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**SEMI-ANNUAL (SECOND HALF 2004)**

**Groundwater Monitoring and Pilot  
Remedial Progress Report**

**575 Paseo Grande  
San Lorenzo, California**

**Prepared for:**

David D. Bohannon Organization  
Sixty 31<sup>st</sup> Avenue  
San Mateo, California

**Prepared By:**

EFI Global  
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EFI Project No. 98360-0013

April 2005

DAVID D. BOHANNON  
ORGANIZATION

April 20, 2005

Ms. Eva Chu  
Hazardous Materials Specialist  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway  
Alameda, California 94502

**Re: 2<sup>nd</sup> Semester 2004 Groundwater Monitoring and Pilot Remedial Progress Report – David D. Bohannon Organization Property Located at 575 Paseo Grande - San Lorenzo, CA**

Dear Ms. Chu:

The David D. Bohannon Organization is pleased to provide the enclosed copy of the above-referenced report. The report was prepared by EFI Global (EFI).

Please contact the undersigned or Mr. Chris Maxwell of EFI if you have questions or comments regarding the report.

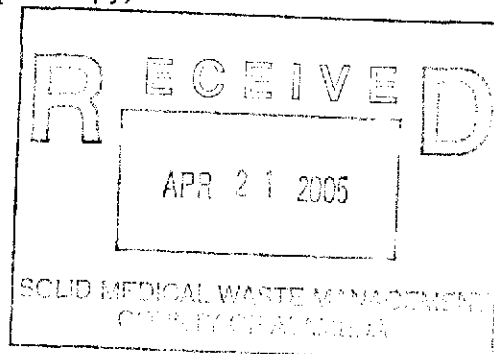
Sincerely,



Mr. Robert Webster  
Chairman

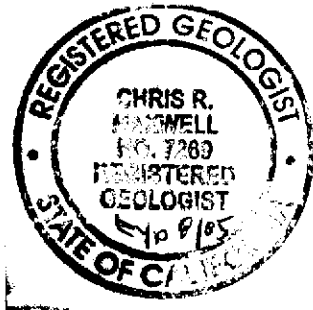
cc: Mr. Chris Maxwell-EFI Global

Attachment: 2<sup>nd</sup> Semester 2004 Groundwater Report (one copy)



**Semi-Annual (Second Half 2004)  
Groundwater Monitoring and Pilot Remedial Progress Report  
575 Paseo Grande  
San Lorenzo, California**

The material and data in this report were prepared under the supervision and direction of the undersigned. This report was prepared consistent with current and generally accepted geologic and environmental consulting principles and practices that are within the limitations provided herein.



EFI Global

A handwritten signature in black ink, appearing to read "Chris R. Maxwell", written over a horizontal line.

Chris R. Maxwell, R.G.  
Branch Manager

A handwritten signature in black ink, appearing to read "Mark B. Williams", written over a horizontal line.

Mark B. Williams  
Senior Scientist

## LIMITATIONS

The conclusions and recommendations contained in this report/assessment are based upon professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location and are subject to the following inherent limitations:

1. The data and findings presented in this report are valid as of the dates when the investigations were performed. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration at the site, analysis of the data, and reevaluation of the findings, observations, and conclusions expressed in the report.
2. The data reported and the findings, observations, and conclusions expressed in the report are limited by the Scope of Work. The Scope of Work was defined by the request of the client, the time and budgetary constraints imposed by the client, and availability of access to the site.
3. Because of the limitations stated above, the findings, observations, and conclusions expressed by EFI in this report are not, and should not be, considered an opinion concerning the compliance of any past or present owner or operator of the site with any federal, state or local law or regulation.
4. No warranty or guarantee, whether expressed or implied, is made with respect to the data or the reported findings, observations, and conclusions, which are based solely upon site conditions in existence at the time of investigation.
5. EFI reports present professional opinions and findings of a scientific and technical nature. While attempts were made to relate the data and findings to applicable environmental laws and regulations, the report shall not be construed to offer legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of federal, state or local governmental agencies. Any use of the report constitutes acceptance of the limits of EFI's liability. EFI's liability extends only to its client and not to any other parties who may obtain the report. Issues raised by the report should be reviewed by appropriate legal counsel.

## TABLE OF CONTENTS

	<u>Page</u>
<b>1.0 INTRODUCTION</b> .....	<b>1</b>
1.1 Background .....	1
<b>2.0 GROUNDWATER MONITORING</b> .....	<b>4</b>
2.1 Water Level Gauging .....	4
2.2 Purging and Sampling .....	4
<b>3.0 RESULTS</b> .....	<b>5</b>
3.1 Groundwater Elevation Results .....	5
3.2 Groundwater Analytical Results .....	5
3.2.1 BTEX.....	5
3.2.2 TPHg.....	5
<b>4.0 PILOT REMEDIAL PROGRAM</b> .....	<b>7</b>

### TABLES

<b>Table 1</b>	Historical Groundwater Elevation Data
<b>Table 2</b>	Historical Groundwater Analytical Data
<b>Table 3</b>	May 2004 Baseline Soil Data for the Pilot Remedial Program
<b>Table 4</b>	Groundwater Data for the Pilot Remedial Program

### FIGURES

<b>Figure 1</b>	Site Location Map
<b>Figure 2</b>	Site Plan
<b>Figure 3</b>	Potentiometric Surface Map – December 2, 2004
<b>Figure 4</b>	Chemical Concentrations in Groundwater – Second Semester 2004
<b>Figure 5</b>	Historical Concentrations of Benzene at MW-2 and MW-4
<b>Figure 6</b>	Historical Concentrations of Benzene at MW-3
<b>Figure 7</b>	Historical Concentrations of TPH-g at MW-2 and MW-4
<b>Figure 8</b>	Historical Concentrations of TPH-g at MW-3

### APPENDICES

<b>Appendix A</b>	Field Data Sheets
<b>Appendix B</b>	Laboratory Analytical Data Sheets

## 1.0 INTRODUCTION

This report presents the results of groundwater monitoring, sampling, and analysis conducted on December 2, 2004 for the property located at 575 Paseo Grande, San Lorenzo, California (Site), Figure 1. This sampling event was conducted by EFI Global (EFI) to continue the assessment of groundwater conditions beneath the Site. The previous groundwater monitoring and sampling was conducted in April 2004. The scope of work included measuring the depth to water in groundwater monitoring wells MW-1 through MW-7 (Figure 2), and collecting groundwater samples for analysis of total petroleum hydrocarbons as gasoline (TPH-g) and benzene, toluene, ethylbenzene, and total xylenes, (collectively BTEX).

During May 2004, EFI installed wells at the Site for the purposes of pilot scale remedial activities (see Figure 2). Four wells were installed on-Site for the purposes of injecting nitrate solution to groundwater upgradient of well MW-4 (NIW-A1, -A2, -B1, -B2). Eight wells were installed on-Site for the purposes of injecting peroxide solution to soil and groundwater upgradient of well MW-3 (PIW-A1 to -A4 and PIW-B1 to -B4). Four wells were installed for the purposes of observing the affects of the injection program (NOBS-B1, POBS-A1, POBS-B1, POBS-B2).

Baseline groundwater sampling from select injection and observation wells was completed in May 2004. System construction and initial injections were completed during May/June 2004. The 1<sup>st</sup> Semester 2004 Semi-Annual groundwater monitoring report details these activities (EFI, 2004). Subsequent injections were completed in July 2004 (Phase Two) and October 2004 (Phase Three). Progress groundwater sampling for Phases Two and Three were conducted in August 2004 and December 2004, respectively. A dual-phase extraction test was completed near the former gasoline UST in February 2005. This report details the results of the progress sampling and dual-phase testing, and provides a description of remedial activities planned for the 1<sup>st</sup> Semester 2005.

### 1.1 Background

Over the last 25 years, the Site has been used as an asphalt-paved parking area located in a C1 commercial zone. The Site was a gasoline station prior to 1969. Little information is known about the Site history related to its use as a gasoline service station. In anticipation of property redevelopment, initial investigation activities were conducted in March 1995 to determine if former underground service station equipment remained-onsite. The work was conducted by Twining Laboratories, Inc. as documented in their letter report dated April 15, 1995. The investigation included a magnetometer survey followed by an exploratory excavation. In summary, the work conducted identified underground gasoline service station equipment which included what appeared to be the former tank pit, approximately 110 feet of fuel delivery system piping, and a grease sump and/or hydraulic lift pit in an area which may have been the former service garage. Field evidence and one soil sample indicated the potential for soil contamination along the piping runs, around the grease sump, and around the inferred location of the former

tank pit. Characterization of the magnitude and extent of potential soil contamination were not performed during the initial activities.

In June 1995, SECOR conducted additional activities at the Site which included removal of the former underground storage tank (UST) system piping and the former grease sump, and characterization soil sampling along the pipelines and around the former grease sump and former tank pit areas. This work was summarized in SECOR's letter report dated June 29, 1995. The characterization data from this investigation indicated that there were two areas of concern at the Site: 1) the former grease sump area; and 2) the former gasoline distribution system area. SECOR subsequently conducted excavation activities in these two areas. The soil excavated from the former sump area was transported off-site for disposal. The soil generated from the UST excavation was treated by means of aeration and later transported off-site for disposal. Three groundwater monitoring wells (MW-1, MW-2, and MW-3) were installed during the investigation activities to evaluate the degree to which the groundwater had been affected. The results of the soil characterization and groundwater monitoring activities are reported in SECOR's *Report of Interim Remedial Actions* dated June 4, 1994, and *Fourth Quarter 1996 Monitoring and Sampling Report* dated November 26, 1996. Monitoring well locations are illustrated in Figure 2.

In June 1999, a utility trench survey was conducted around the Site, and a passive soil vapor survey was performed downgradient from the Site. The results of the utility trench and passive soil vapor surveys are documented in SECOR's *Third Quarter Groundwater Monitoring Results and Plume Definition Report* dated October 21, 1999.

On December 5, 2000, four additional groundwater monitoring wells (MW-4 through MW-7) were installed at the Site. Soil and groundwater sampling was conducted to evaluate possible off-site migration of petroleum-related constituents originating from the Site, and to collect data to direct further subsurface investigations and/or remediation at the Site, if necessary. The work was conducted in general accordance with SECOR's *Work Plan for Additional Groundwater Monitoring Well Installation* dated October 22, 1999, and SECOR's *Addendum to the Work Plan for Additional Groundwater Monitoring Well Installation* dated December 2, 1999. The Work Plan was approved with comments in correspondence from the Alameda County Health Care Services Agency (ACHCSA) in a letter dated November 4, 1999. Historically, two of the on-site wells (MW-2 and MW-3) and one well immediately downgradient to the west (MW-4) contain elevated concentrations of petroleum hydrocarbons. Wells further off-site to the west (MW-6 and MW-7) and south (MW-5) typically do not contain detectable levels of petroleum hydrocarbons, with exception of MW-7, which reported low concentrations of total xylenes (up to 6.7 microgram per Liter [ $\mu\text{g/L}$ ]) in the first two sampling events (December 2000 and February 2001). The well has since been non-detect for all constituents.

In January 2003, SECOR performed an additional limited subsurface investigation as described in the *Remedial Action Work Plan* dated October 25, 2002, and submitted to the ACHCSA. The Work Plan was approved by the ACHSA in a letter dated October 28, 2002. Based on field observations, soil boring logs, and laboratory analytical results, SECOR concluded that: (1)

perched groundwater was encountered within fill materials at approximately 5 to 8 feet below ground surface (bgs); (2) water-bearing zones were encountered in silt and sand at depths of 13 to 15 feet bgs (A zone), in sand from 16 to 19 feet bgs (B zone), and in silty sand at 22.5 feet bgs (C zone); and (3) soil sample analytical results suggest that the majority of chemical impact exists in silty clay from approximately 8 to 13.5 feet bgs within and adjacent to the former gasoline UST and pump island excavation. The findings of the investigation were presented in the report *Limited Subsurface Investigation Report and Work Plan for Additional Soil and Groundwater Assessment* dated February 19, 2003 and prepared by SECOR.

At the request of the ACHCSA, a sensitive receptor survey was performed for the Site. The survey consisted of identifying the locations and depths of subsurface utilities near the Site, and reviewing data provided by the California Department of Water Resources (DWR) for potential groundwater production wells. The survey results are presented in SECOR'S *Third Quarter 1999 Groundwater Monitoring Results and Plume Definition Report*, dated October 21, 1999. The report indicates that no groundwater production wells are likely to be affected by hydrocarbons in the soil and groundwater at the Site.

The October 2002 *Remedial Action Workplan* (RAW) proposed nitrate injections to stimulate biological degradation of hydrocarbons in the groundwater. Based on the data collected in January 2003, additional remediation of soil was also recommended. An addendum to the RAW was submitted by SECOR in December 2003 proposing hydrogen peroxide injections for chemical oxidation of soils in addition to nitrate injections. The RAW addendum was approved by the ACHCSA in a letter to Bohannon dated December 15, 2003.

In May 2004, EFI initiated installation of the pilot groundwater remedial program. Injection and observation well installations were completed during May 2004 in accordance with the approved RAW. Initial chemical injections were completed during May/June 2004, with additional injections completed in July 2004 (Phase Two) and October 2004 (Phase Three). Following Phase Three injections, EFI conducted a dual-phase extraction test in the area of the former gasoline UST. The remedial activities and results of progress sampling are detailed in this report.



## 2.0 GROUNDWATER MONITORING FOR WELLS MW-1 to MW-7

Groundwater monitoring wells MW-1 through MW-7 were gauged for depth-to-water on December 2, 2004. Wells MW-3 through MW-7 were sampled following purging and gauging as detailed below. Wells MW-1 and MW-2 were previously sampled during the 2<sup>nd</sup> Semester 2004 (June and October 2004, respectively), and were not sampled again during the December 2004 sampling event.

### 2.1 Water Level Gauging

Prior to purging and sampling, the depth to groundwater was measured from the top of each well casing using a water-level indicator graduated to 0.01 foot. Depth to groundwater measurements and surveyed wellhead top-of-casing elevations were used to calculate groundwater surface elevations for each well. Table 1 presents historical groundwater elevation data for the Site.

### 2.2 Purging and Sampling

Each of the seven monitor wells were purged using a low-flow purging method consisting of dedicated tubing attached to a variable speed peristaltic pump set to extract groundwater at a rate of approximately 0.1 gallons per minute (gpm). Temperature, conductivity, pH, dissolved oxygen content, and oxidation-reduction potential were monitored using a flow-through cell during purging to confirm stable water conditions prior to sampling. Copies of the field data sheets are attached as Appendix A.

Samples were collected from each well using the dedicated tubing to eliminate the possibility of cross-contamination between wells. Samples were placed in laboratory supplied sample containers, capped, labeled, and stored on ice pending delivery to STL San Francisco, a California state-certified laboratory. The groundwater samples were analyzed for TPH-g by modified U.S. Environmental Protection Agency (EPA) Method 8015m, and for BTEX by EPA Method 8021B.

Well MW-1 has indicated non-detectable levels of hydrocarbon compounds since 2000. These data appeared inconsistent with analytical data prior to 2000. Prior to sampling of MW-1 in June 2004, EFI developed the well by surging and pumping until groundwater was visibly free of sediment. The well was then allowed to stabilize for approximately 24 hours prior to sampling using the low flow methods detailed above.

## 3.0 RESULTS FOR WELLS MW-1 TO MW-7

### 3.1 Groundwater Elevation Results

The average depth to water measurements taken at the Site on December 2, 2004 was 6.12 feet below the top of well casing, with an average water table elevation of 19.74 feet above mean sea level. Groundwater elevations decreased an average of 0.66 feet since the previous monitoring event in April 2004.

A potentiometric surface map illustrating the interpreted groundwater surface elevation and flow direction on December 2, 2004 is presented as Figure 3. The hydraulic gradient across the Site was approximately 0.0018 feet per foot (ft/ft) toward the west. These results are generally consistent with flow direction results obtained during the prior monitoring events. As noted in previous reports, the flow direction beneath the Site is potentially tidally influenced by the San Francisco bay to the west.

### 3.2 Groundwater Analytical Results

Table 2 presents historical groundwater laboratory analytical results for the Site including the December 2, 2004 event. Petroleum hydrocarbon chemical data for the December 2004 event are illustrated on Figure 4.

TPH-g and BTEX concentrations continued to be below the laboratory method reporting limits in off-site wells MW-5, MW-6, and MW-7. Following redevelopment, well MW-1 contained low concentrations of petroleum hydrocarbons consistent with historical data prior to 2000. Samples from wells MW-2, MW-3, and MW-4 indicate detectable concentrations of petroleum hydrocarbons. These wells are located in proximity to the on-going pilot remedial activities, and these data are further discussed in Section 4.

Copies of the laboratory analytical reports for groundwater samples are attached as Appendix B. The following two subsections provide a brief discussion of the analytical results.

#### 3.2.1 BTEX

BTEX constituents were reported in samples collected from wells MW-1 through MW-4. Historical concentrations of benzene at wells MW-2 through MW-4 are shown on Figure 5 (MW-2 and MW-4) and Figure 6 (MW-3). During the December 2, 2004 event, benzene concentrations ranged from 1.5 µg/L in MW-1 to 2,400 µg/L in MW-3.

#### 3.2.2 TPH-g

TPH-g was reported in samples collected from wells MW-1 through MW-4. Historical concentrations of TPH-g in wells MW-2 through MW-4 are shown on Figure 7 (MW-2 and MW-4) and Figure 8 (MW-3). During the December 2, 2004 event, the TPH-g concentrations ranged from 150 µg/L at MW-1 to 8,300 µg/L at MW-3.

## 4.0 REMEDIAL PILOT TESTING

The 1<sup>st</sup> Semester 2004 report provides details regarding the installation and initial operation of the pilot remedial system, including well installation and initial injections (Phase One and Phase Two) of peroxide and nitrate solutions. The pilot remedial system generally consists of chemical storage tanks, connecting valves, and flexible hosing. Chemical storage tanks are temporary rental equipment, provided by the chemical company and then removed following completion of the injection program. No permanent storage tanks are currently located at the Site.

The remedial pilot program consists of gravity injecting nitrate and peroxide solutions to the subsurface. Nitrate is being injected upgradient of well MW-4 to reduce concentrations of dissolved phase hydrocarbons in groundwater. The nitrate is intended to facilitate anaerobic degradation. Peroxide is being injected upgradient of well MW-3 to chemically oxidize petroleum hydrocarbons in soil and groundwater, including light non-aqueous phase liquids (LNAPL). The peroxide may also increase dissolved oxygen and ORP levels in the groundwater, thereby facilitating aerobic degradation.

### 4.1 Summary of Phase One and Two Injection Program

The Phase One and Phase Two injection program activities are detailed in the 1<sup>st</sup> Semester 2004 report (EFI, 2004). The following summarizes these activities, including the baseline sampling conducted prior to injections. Referenced injection and observation well locations are shown on Figure 2. Field data sheets and laboratory data for the baseline and Phase One progress sampling are provided in Appendices A and B, respectively, of the 1<sup>st</sup> Semester 2004 report.

Groundwater samples were collected in May 2004 from select injection and observation wells to provide a baseline for groundwater conditions prior to chemical/nitrate injections. These data, in addition to the April 2004 results for MW-3 and MW-4, provide a pre-injection baseline from which to evaluate remedial progress. The baseline data is summarized on Table 4.

Phase One injections were completed in late May 2004. Phase One of the chemical oxidation program generally consisted of injecting a total of 1,000 gallons of peroxide solution (7% by weight) into the four A Zone (PIW-A1 through -A4) and four B Zone (PIW-B-1 through -B4) injection wells. Phase One of the anaerobic degradation program consisted of injecting approximately 400 gallons of nitrate solution (approximately 260 mg/L total kjeldahl nitrogen – TKN) into the two A Zone (NIW-A1 and -A2) injection wells. Nitrate injections were not conducted for the B Zone wells because baseline data indicated the presence of nitrate.

Phase Two injections were completed in July 2004. Phase Two of the chemical oxidation program consisted of injecting 1,000 gallons of peroxide solution (7% by weight) into the four A Zone wells (PIW-A1 to -A4). No peroxide injections were completed for the four B Zone wells because the Phase One progress data suggested the initial injections significantly reduced hydrocarbon concentrations in this zone. Phase Two of the anaerobic degradation program

consisted of injecting approximately 2,500 gallons of nitrate solution (approximately 260 mg/L TKN) to the two A Zone wells (NIW-A1 and -A2). The Phase Two nitrate injections were conducted because observation well MW-4 did not indicate the presence of nitrate solution.

#### **4.2 Phase Two Progress Sampling and Phase Three Injections**

Phase Two remedial progress sampling was conducted in August 2004. These data are shown on Table 4, and suggested the following:

- Chemical oxidation in the A Zone successfully reduced hydrocarbon concentrations in injection wells. However, the radius of influence appears limited based on data for observation wells MW-3 and POBS-A1. Specifically, hydrocarbon concentrations in these two wells were higher than baseline data collected in May 2004.
- Chemical oxidation in the B Zone (Phase One only) significantly reduced hydrocarbon concentrations in the four injection wells and two observation wells (POBS-B1 and -B2). Concentrations at one of the two observations wells (POBS-B2) increased slightly between the Phase One and Two remedial progress sampling (June and August 2004, respectively), suggesting that additional chemical injections may be appropriate.
- Nitrate injections in the A Zone wells appeared to significantly reduce hydrocarbon concentrations in both the injection wells (NIW-A1 and -A2) and the observation well (MW-4). The hydrocarbon concentration detected at MW-4 was significantly lower than historical data since this well was installed in 2000. The nitrate analytical data (TKN and ammonia) suggested dilution of the nitrate solution from the injection wells (i.e., injection well concentrations were approximately 50% of the injection solution concentration). However, neither TKN nor ammonia was detected in the groundwater of MW-4.
- The relatively low hydrocarbon concentrations in the B Zone wells in the anaerobic degradation pilot remedial testing area (NIW-B1 and -B2 and NOBS-B1) were generally consistent with the May 2004 baseline data. No nitrate injections have been completed for the B Zone because the hydrocarbon concentrations are low, and because baseline sampling suggested the "natural" presence of nitrate without injections.

Based on the findings of the Phase Two progress sampling (August 2004), Phase Three injections were completed in late September 2004. The goals of the Phase Three injections were to further evaluate the potential for hydrocarbon mass destruction in the A Zone through chemical oxidation, and to determine if nitrate injections in the anaerobic remedial testing area (NIW-A1 and -A2) could extend to observation well MW-4 located approximately 35 feet down-gradient of the injection area. Phase Three injections consisted of:

- Approximately 650 gallons of peroxide solution (7% by weight) and 350 gallons of sodium persulfate solution (7% by weight) were cumulatively injected into the four A Zone wells (PIW-A1 through -A4). The sodium persulfate was added to the remedial testing program to slow the chemical reaction of the peroxide, and to facilitate Fenton's reaction (i.e., reaction between the hydroxyl radical and hydrocarbons).
- Approximately 650 gallons of peroxide solution (7% by weight) and 350 gallons of sodium persulfate solution (7% by weight) were cumulatively injected into the four B Zone wells (PIW-B1 through -B4).
- Approximately 2,000 gallons of nitrate solution was injected into the two A Zone wells (NIW-A1 and -A2). The nitrate solution contained approximately 450 mg/L TKN. The TKN concentration was increased compared to Phases One and Two to facilitate movement of nutrients to observation well MW-4.

Phase One and Two oxidant injections were completed by gravity draining the chemical oxidant into the groundwater system. This method is preferred to high-pressure injection because lower pressure prevents "short-circuiting" along preferential flow paths. However, the low pressure created by the hydraulic head in the well casing (approximately 2 to 3 psi) did not appear to provide a significant radius of influence to move the oxidants into the clay and silt sediments of the A Zone. During Phase Three, the injection pressure was boosted using an air compressor. Injection pressures were still relatively low, ranging from approximately 3 to 10 pounds per square inch (psi). The injection process was conducted by filling the well casing with chemical oxidant, capping the well, and then applying air pressure as necessary to facilitate movement of the solutions into the soils and groundwater system. The EFI field personnel alternated between injecting the hydrogen peroxide and sodium persulfate solutions to facilitate mixing of the chemicals in the aquifer system.

During the Phase Three injections, field observations suggested an increase in the radius of influence of the chemical injections. Groundwater in A zone observation wells MW-3 and POBS-A1, and B zone observation wells POBS-B1 and -B2, was observed to bubble. This observation suggests movement of oxidant to these locations.

#### **4.3 Phase Three Progress Sampling**

Phase Three remedial progress sampling was completed in December 2004 coincident with the above-described 2<sup>nd</sup> Semester 2004 sampling event. The analytical results are summarized on Table 4. Field data sheets and analytical data are provided in Appendices A and B, respectively. The following summarizes the findings of the sampling:

### **Chemical Oxidant Remedial Test Area**

- Hydrocarbon concentrations in A Zone peroxide injection wells were significantly lower than baseline levels. At one well (PIW-A1), concentrations were slightly higher than Phase Two progress results. In the other well sampled (PIW-A2), concentrations were the lowest detected since the remedial pilot program was initiated in May 2004.
- pH measurements collected from select A Zone and B Zone wells in the oxidant remedial area indicate acidic conditions. pH values less than 6.0 pH units were measured at each of the four A Zone oxidant injection wells (PIW-A1 through -A4) and two of the B Zone oxidant injection wells (PIW-B1 and -B2). These data suggest that the injection program has likely resulted in localized Fenton's chemical reactions in the immediate vicinity of the injection wells.
- Hydrocarbon concentrations in A Zone oxidant observation wells (MW-3 and POBS-A1) continued to be above the May 2004 baseline levels. As noted on Figures 6 and 8, hydrocarbon concentrations at well MW-3 have been steadily increasing during the remedial program. Although field observations (bubbling in observation well groundwater) suggest movement of oxidant to the observation well locations, the radius of "significant" chemical influence of the injections was likely not laterally significant.

Note that well MW-3 and peroxide injection well PIW-A3 were sampled on December 15, 2004 to further evaluate groundwater conditions in the oxidant injection area. Prior to sampling, both wells were purged of approximately 50 gallons of water to remove sediment and ensure collection of representative aquifer samples. The analytical data for this additional sampling event is provided on Table 4. The concentrations of TPH-g and BTEX at MW-3 were higher in the sample collected on December 15<sup>th</sup> than on December 2<sup>nd</sup>. The concentrations at PIW-A3, which is located approximately five (5) feet east of MW-3, were much lower than detected at MW-3. These data are consistent with samples from other injection wells, where the hydrocarbon concentrations are relatively low at the oxidant injection wells compared to nearby observation wells.

- Hydrocarbon concentrations in B Zone injection and observation wells in the oxidant remedial area indicate much lower levels than the May 2004 baseline, the Phase One progress data, and the Phase Two progress data. Hydrocarbon compounds were slightly above laboratory method reporting limits (MRLs) at both injection wells sampled (PIW-B1 and -B3) and one observation well (POBS-B1), and less than MRLs at the other observation well (POBS-B2). These data represent a decrease in concentration by several orders of magnitude compared to the May 2004 baseline data.

### ***Nitrate Injection Remedial Area***

- Hydrocarbon concentrations in A Zone nitrate injection wells were significantly lower than baseline levels. At one well (NIW-A1), concentrations were approximately five times lower than the baseline levels. In the other well sampled (NIW-A2), concentrations were less than MRLs.
- Hydrocarbon concentrations at the A Zone nitrate observation well (MW-4) were approximately one-half to one-third of the May 2004 baseline levels. As shown on Figures 5 and 7, hydrocarbon concentrations at well MW-4 reached historical lows during the remedial program. The Phase Three progress concentrations were greater than the Phase Two progress data (August 2004).
- TKN and ammonia data indicate dilution and lateral migration of nitrate solutions from the injection wells to well MW-4. TKN concentrations at NIW-A1 (260 mg/L) and NIW-A2 (270 mg/L) are approximately one-half the injected concentration. TKN was not detected at A Zone observation well MW-4, but ammonia was detected at a concentration of 0.34 mg/L. These data suggest that the injected nitrate solution is spreading to MW-4. Additionally, the very low concentration of ammonia and absence of TKN at MW-4 suggest the microbial consumption of the nitrate.
- Hydrocarbon compounds in B Zone injection wells (NIW-B-1 and -B2) and observation well (NOBS-B1) in the nitrate injection area were less than MRLs, with the exception of 2.0 µg/L benzene at NOBS-B1. These data indicate a reduction in hydrocarbon concentrations compared to baseline data. Note that although nitrate solution was not injected directly into the B zone, TKN and ammonia were detected in B-Zone injection and observation wells. TKN was detected at NIW-B1 (94 mg/L), NIW-B2 (17 mg/L), and NOBS-B1 (4.3 mg/L). These data suggest vertical conductivity between the A and B Zones at the Site in the nitrate injection area. The significant reduction in hydrocarbon concentrations in the B Zone may be attributed to the indirect injection of nutrients into the groundwater of this zone.

#### **4.3 Summary of Oxidant and Nutrient Pilot Remedial Studies**

Based on field observations, field data, and laboratory analytical data, the following can be summarized for the initial three injection phases of the pilot remedial studies conducted at the Site.

- Nitrate solution injections have significantly reduced petroleum hydrocarbon concentrations in groundwater of the A and B Zones at the Site. The reduction in concentrations appears to be associated with anaerobic degradation. Microbial studies conducted by EFI prior to implementation of the pilot program identified abundant facultative bacteria in the groundwater of well MW-4. The nitrate solution has provided important nutrients for these existing bacteria to aggressively consume hydrocarbons.
- Injection of chemical oxidant has significantly reduced petroleum hydrocarbon concentrations in the B zone groundwater at the Site. The success of the oxidant injections can be attributed to the transmissive nature of the B Zone sand and gravel sediments, and the absence of clay and organic materials that consume the oxidant.
- Injection of chemical oxidant into the A zone has significantly reduced petroleum hydrocarbon concentrations at the injection wells. The injections have also facilitated localized Fenton's reactions (i.e., creation of the hydroxyl radical), which is critical for hydrocarbon mass reduction. However, the lateral influence for each injection well appears limited. The A Zone also contains abundant clays and organic matter, which may have consumed some of the injected oxidant.

#### **4.4 Dual-Phase Extraction Pilot Test**

Based on the findings of the pilot remedial studies, it has been determined that chemical oxidation of hydrocarbons in soil and groundwater of the A zone in the area of the former gasoline UST is not an appropriate remedy. Specifically, the volume of oxidant required and the spacing of injection wells would not be cost effective.

Dual-phase extraction (extraction of soil vapor and groundwater) has been selected for remedial evaluations to reduce benzene concentrations in groundwater. The general goal of the dual-phase extraction is to effectively dewater to zone of hydrocarbon impact, and then remove volatile hydrocarbons (such as benzene, primarily in the vapor phase). Continued groundwater extraction and management (treatment and discharge) is required during the remedial program to maintain the dewatering.

To initially evaluate this remedial approach, EFI provided direct oversight of a one-day test on February 3, 2005. The following summarizes the methods and findings of the test:

- A 25 horsepower (HP) liquid ring blower was used to extract groundwater and vapor from wells PIW-A1 through PIW-A4. The wells were connected to the unit using temporary flexible hoses and fittings.
- Measurements were collected at the wellhead and observations wells, including vacuum, vapor removal rate (feet per minute), and groundwater extraction rate (gallons per minute).
- Extracted vapors were treated using an on-Site thermal oxidation unit. The treated vapors will be discharged under a mobile treatment unit permit.



- Extracted groundwater was stored on-Site in 55-gallon drums. An estimated 900 gallons of groundwater were generated during the test.
- Wells PIW-A2 and -A4 yielded groundwater in excess of several gallons per minute (gpm) from each well. Groundwater would be more effectively removed from these wells using pumps rather than the vacuum system. These two wells were disconnected from the vacuum system after approximately one-half hour of testing.
- Vacuum at wells PIW-A1 and -A3 was significant throughout the test, ranging from approximately 25 to 28 inches of water.
- Vacuum at observation wells MW-3 and POBS-A1 were not greater than 0.5 inches of water. These data suggest that the applied vacuum did not develop a significant radius of influence during the test. Note that the test area was, and would not be expected to be, dewatered in the brief time period of the test. The radius of influence of the applied vacuum will not expand a significant distance from the vacuum extraction wells until dewatering is more advanced.
- Influent vapor samples to the treatment system were collected four times during the test. These data are presented on Table 3. Hydrocarbon concentrations as gasoline (TPH-g) ranged from approximately 0.17 to 0.97 milligrams per liter of air (mg/L<sub>air</sub>).
- Vapor removal rates ranged from approximately 350 to 800 feet per minute. These data equate to approximately 17 to 39 standard cubic feet per minute (SCFM).
- Assuming 1.0 mg/L<sub>air</sub> and 39 SCFM, the dual-phase extraction system peak hydrocarbon removal rate for the single-day test is estimated at approximately 3.5 pounds of hydrocarbons per day in the vapor phase. The rate would likely increase significantly once the area is effectively dewatered, and air removal rate and concentration should both increase.
- The groundwater removal rate during the test is estimated at approximately 3.0 gpm. The removal rate would have been much higher if all four wells (PIW-A1 through PIW-A4) were connected to the extraction system throughout the test. Although the cumulative removal rate during the initial phase of full-scale application would be much higher than 3.0 gpm (estimated to be the first 12 to 36 hours), less than 1.5 gpm would likely be required once dewatering is complete.

In summary, data collected during the one-day test suggest the dual-phase remedial technology has the potential to remove the volatile hydrocarbons (TPH-g) from soil and groundwater in the area of the former gasoline UST. Additional evaluation is needed to develop a full-scale design.

A one-week dual-phase test is planned for the last week in April 2005. The test will consist of:

- Continuous dewatering from wells PIW-A1 through -A4 using pumps set with high-low switches (i.e., the pumps will turn on and off based on water levels in the wells).
- Continuous vapor removal from the four wells using a 25HP blower. The vapor will be treated using catalytic and thermal oxidation, and discharged under a mobile permit to operate issued by the air quality management district.
- Treatment of extracted groundwater using activated carbon, and discharge of the treated water to the sanitary sewer under appropriate permit from the sanitation district.
- Collection of measurements during the test, including extraction wellhead vacuum, observation wellhead vacuum, and system airflow in feet per minute.
- Daily influent vapor samples for laboratory analysis, including TPH-g and BTXE.

The results of the one-week test will be presented on the 1<sup>st</sup> Semester 2005 remedial progress report.

EFI will also continue to evaluate the progress of the anaerobic microbial remediation in the area of well MW-4. Groundwater samples will be collected from the injection and observation wells during the 1<sup>st</sup> Semester 2005. Additional nitrate solution may be added to the injection wells depending upon the results of the sampling.

Table 1  
 Historical Groundwater Elevation Data  
 575 Paseo Grande  
 San Lorenzo, California

Date Sampled	TOC (ft msl)	DTW (ft bTOC)	ELEV (ft msl)
<b>MW-1</b>			
5/17/1996	27.11	5.65	21.46
10/8/1996		7.47	19.64
4/1/1997		6.27	20.84
6/12/1997		6.90	20.21
9/10/1997		7.48	19.63
6/8/1999		6.44	20.67
9/13/1999		7.56	19.55
12/21/1999		7.41	19.70
3/17/2000		5.35	21.76
12/5/2000	26.98	6.99	19.99
2/28/2001		5.71	21.27
8/22/2001		7.39	19.59
5/22/2002		6.25	20.73
8/29/2002		7.23	19.75
12/2/2002		7.13	19.85
3/4/2003		5.77	21.21
12/18/2003		6.37	20.61
4/13/2004		6.13	20.85
12/2/2004		6.93	20.05
<b>MW-2</b>			
5/17/1996	26.73	5.56	21.17
10/8/1996		7.15	19.58
4/1/1997		6.61	20.12
6/12/1997		6.76	19.97
9/10/1997		7.19	19.54
6/8/1999		6.45	20.28
9/13/1999		7.46	19.27
12/21/1999		7.26	19.47
3/17/2000		5.56	21.17
12/5/2000	26.73	7.01	19.72
2/28/2001		5.81	20.92
8/22/2001		7.42	19.31
5/22/2002		6.40	20.33
8/29/2002		7.26	19.47
12/2/2002		7.02	19.71
3/4/2003		5.91	20.82
12/18/2003		6.47	20.26
4/13/2004		6.28	20.45
12/2/2004		6.80	19.93

Table 1  
 Historical Groundwater Elevation Data  
 575 Paseo Grande  
 San Lorenzo, California

Date Sampled	TOC (ft msl)	DTW (ft bTOC)	ELEV (ft msl)
<b>MW-3</b>			
5/17/1996	26.15	4.39	21.76
10/8/1996		6.82	19.33
4/1/1997		5.53	20.62
6/12/1997		6.18	19.97
9/10/1997		6.81	19.34
6/8/1999		5.74	20.41
9/13/1999		6.88	19.27
12/21/1999		6.66	19.49
3/17/2000		4.51	21.64
12/5/2000	26.55	6.84	19.71
2/28/2001		5.44	21.11
8/22/2001		7.29	19.26
5/22/2002		6.22	20.33
8/29/2002		7.26	19.29
12/2/2002		6.85	19.70
3/4/2003		5.72	20.83
12/18/2003		6.15	20.40
4/13/2004		5.97	20.58
12/2/2004		6.64	19.91
<b>MW-4</b>			
12/5/2000	25.87	6.28	19.59
2/28/2001		4.99	20.88
8/22/2001		6.73	19.14
5/22/2002		5.50	20.37
8/29/2002		6.55	19.32
12/2/2002		6.28	19.59
3/4/2003		5.28	20.59
12/18/2003		5.85	20.02
4/13/2004		5.50	20.37
12/2/2004		6.05	19.82
<b>MW-5</b>			
12/5/2000	25.77	6.25	19.52
2/28/2001		4.95	20.82
8/22/2001		6.69	19.08
5/22/2002		5.50	20.27
8/29/2002		6.54	19.23
12/2/2002		6.37	19.40
3/4/2003		5.41	20.36
12/18/2003		5.65	20.12
4/13/2004		5.37	20.40
12/2/2004		6.03	19.74

Table 1  
 Historical Groundwater Elevation Data  
 575 Paseo Grande  
 San Lorenzo, California

Date Sampled	TOC (ft msl)	DTW (ft bTOC)	ELEV (ft msl)
<b>MW-6</b>			
12/5/2000	24.89	5.68	19.21
2/28/2001		4.35	20.54
8/22/2001		6.15	18.74
5/22/2002		4.91	19.98
8/29/2002		5.96	18.93
12/2/2002		5.70	19.19
3/4/2003		4.69	20.20
12/18/2003		5.05	19.84
4/13/2004		4.87	20.02
12/2/2004		5.42	19.47
<b>MW-7</b>			
12/5/2000	25.43	6.43	19.00
2/28/2001		4.76	20.67
8/22/2001		6.95	18.48
5/22/2002		5.55	19.88
8/29/2002		NM	--
12/2/2002		6.43	19.00
3/4/2003		5.10	20.33
12/18/2003		5.65	19.78
4/13/2004		5.27	20.16
12/2/2004		6.15	19.28

Notes:

TOC = Top of casing

DTW = Depth to water

ELEV = Water table elevation above mean sea level (msl)

ft msl = feet above msl

ft bTOC = feet below TOC

NM = Not measured

Table 2  
 Historical Groundwater Analytical Data  
 575 Paseo Grande  
 San Lorenzo, California

Date Sampled	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Chromium (µg/L)	Dissolved Inorganic Lead (µg/L)
<b>MW-1</b>								
5/17/1996	1,100	<0.5	8.7	7.4	17	--	<10	<50
10/8/1996	120	<0.5	<0.5	2.7	<0.5	--	--	--
4/1/1997	550	<0.5	<0.5	7.6	6.6	--	--	--
6/12/1997	160	<0.5	<0.5	2.9	1.7	--	--	--
9/10/1997	640	2.2	3.8	7.4	16	--	--	--
6/8/1999	<50	<0.5	<0.5	<0.5	<0.5	<10	<10	<20
9/13/1999	<50	<0.5	<0.5	<0.5	1.1	--	--	<5
12/21/1999	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
3/17/2000	<50	<0.5	<0.5	<0.5	0.79	<5	--	<5
12/5/2000	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
2/28/2001	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
8/22/2001	<50	<0.5	<0.5	<0.5	<0.5	<5	--	<5
5/22/2002	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
8/29/2002	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
12/2/2002	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
3/4/2003	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
12/18/2003	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
4/13/2004	<50	<0.5	<0.5	<0.5	<1.0	--	--	--
6/18/2004	150	1.5	<0.5	2.7	2.4	--	--	--
<b>MW-2</b>								
5/17/1996	23,000	900	330	650	1,500	--	<10	<50
10/8/1996	8,400	530	<50	400	360	--	--	--
4/1/1997	7,600	470	64	210	250	--	--	--
6/12/1997	8,200	440	52	190	190	--	--	--
9/10/1997	8,500	390	51	220	240	--	--	--
6/8/1999	2,100	240	8	33	40	<10	<10	33
9/13/1999	1,300	120	<5	<5	15	--	--	--
12/21/1999	1,400	110	5.6	11	17	--	--	<5
3/17/2000	1,200	180	19	28	31	<50	--	<5
12/5/2000	800	75	1.8	11	14	--	--	--
2/28/2001	1,200	120	7.1	19	27	--	--	--
8/22/2001	990	75	3.5	8.9	8.1	<5	--	<5
5/22/2002	1,700	230	12	12	25	--	--	--
8/29/2002	1,000	66	2.6	12	12	--	--	--
12/2/2002	1,100	76	8.7	11	17	--	--	--
3/4/2003	1,100	130	4.5	22	24	--	--	--
12/18/2003	910	55	4.1	3.3	3.7	--	--	--
4/13/2004	2,700	350	15	18	24	--	--	--
10/5/2004	2,000	120	5.5	<2.5	8.3	--	--	--
<b>MW-3</b>								
5/17/1996	6,700	140	45	210	180	--	<10	<50
10/8/1996	1,800	2,700	240	910	970	--	--	--
4/1/1997	27,000	520	50	520	450	--	--	--
6/12/1997	29,000	2,700	160	940	500	--	--	--
9/10/1997	290,000	1,800	3,200	2,800	6,900	--	--	--
6/8/1999	1,700	320	6.4	15	<0.5	<10	<10	24
9/13/1999	5,400	1,000	<20	<20	<20	--	--	--
12/21/1999	8,800	1,400	63	17	23	--	--	<5
3/17/2000	1,500	190	<5	7.6	<5	<50	--	<5
12/5/2000	5,400	790	20	7.4	10	--	--	--
2/28/2001	3,600	850	15	25	10	--	--	--
8/22/2001	8,100	1,600	28	44	17	<50	--	<5
5/22/2002	5,400	1,000	32	13	21	--	--	--
8/29/2002	6,700	1,700	55	49	38	--	--	--
12/2/2002	5,700	650	17	37	33	--	--	--
3/4/2003	5,000	650	18	42	27	--	--	--
12/18/2003	5,200	910	25	20	21	--	--	--
4/13/2004	3,900	1,200	19	<5.0	<10	--	--	--
6/18/2004	4,300	1,600	40	81	26	--	--	--
8/27/2004	6,900	2,100	59	220	<50	--	--	--
10/5/2004	9,800	2,500	52	160	38	--	--	--
12/2/2004	8,300	2,400	41	200	29	--	--	--
12/14/2004	15,000	3,600	140	560	210	--	--	--

Table 2  
 Historical Groundwater Analytical Data  
 575 Paseo Grande  
 San Lorenzo, California

Date Sampled	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Chromium (µg/L)	Dissolved Inorganic Lead (µg/L)
<b>MW-4</b>								
12/5/2000	3,900	320	13	41	31	--	--	<5
2/28/2001	3,400	250	14	44	22	--	--	<5
8/22/2001	4,800	260	12	27	9	<50	--	<5
5/22/2002	5,100	320	29	74	50	--	--	--
8/29/2002	3,700	260	<5	30	28	--	--	--
12/2/2002	5,100	250	8.9	26	22	--	--	--
3/4/2003	4,500	170	18	63	47	--	--	--
12/18/2003	2,900	160	8.3	8	<5	--	--	--
4/13/2004	7,400	290	29	110	100	--	--	--
6/18/2004	2,700	140	12	36	16	--	--	--
8/27/2004	460	19	1.2	1.1	1.5	--	--	--
10/5/2004	460	19	<1.0	<1.0	<1.0	--	--	--
12/2/2004	2,800	120	5.4	8.3	5.3	--	--	--
<b>MW-5</b>								
12/5/2000	<50	<0.5	<0.5	<0.5	<0.5	--	--	<5
2/28/2001	<50	<0.5	<0.5	<0.5	<0.5	--	--	<5
8/22/2001	<50	<0.5	<0.5	<0.5	<0.5	<5	--	<5
5/22/2002	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
8/29/2002	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
12/2/2002	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
3/4/2003	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
12/18/2003	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
4/13/2004	<50	<0.5	<0.5	<0.5	<1.0	--	--	--
12/2/2005	<50	<0.5	<0.5	<0.5	<1.0	--	--	--
<b>MW-6</b>								
12/5/2000	<50	<0.5	<0.5	<0.5	<0.5	--	--	<5
2/28/2001	<50	<0.5	<0.5	<0.5	<0.5	--	--	<5
8/22/2001	<50	<0.5	<0.5	<0.5	<0.5	<5	--	<5
5/22/2002	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
8/29/2002	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
12/2/2002	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
3/4/2003	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
12/18/2003	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
4/13/2004	<50	<0.5	<0.5	<0.5	<1.0	--	--	--
12/2/2004	<50	<0.5	<0.5	<0.5	<1.0	--	--	--
<b>MW-7</b>								
12/5/2000	<50	<0.5	<0.5	<0.5	1.5	--	--	<5
2/28/2001	<50	<0.5	<0.5	<0.5	6.7	--	--	<5
8/22/2001	<50	<0.5	<0.5	<0.5	<0.5	<5	--	<5
5/22/2002	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
12/2/2002	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
3/4/2003	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
12/18/2003	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
4/13/2004	<50	<0.5	<0.5	<0.5	<1.0	--	--	--
12/2/2004	<50	<0.5	<0.5	<0.5	<1.0	--	--	--

Notes:

- TOC = Top of casing
- DTW = Depth to water
- ELEV = Water table elevation above mean sea level (msl)
- ft msl = feet above msl
- ft bTOC = feet below TOC
- NM = Not measured
- = water sample not analyzed for specified constituents

**Table 3**  
**February 2005 Soil Vapor Data Collected During Single-Day Dual-Phase Extraction Test**

575 Paseo Grande  
 San Lorenzo, California

Sample ID Number	Sample Date	Well(s) Under Vacuum	Sample Time	TPH-gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
USEPA Lab Analytical Methods				8260B				
Units				micrograms per liter of air				
VS-1	02/03/05	PIW-A1, -A3	1044	760	21	1.8	4.5	8.0
VS-2	02/03/05	PIW-A1, -A3	1120	760	16	1.3	4.5	5.8
VS-3	02/03/05	PIW-A1	1400	170	3.3	<1.0	<1.0	2.4
VS-4	02/03/05	PIW-A3	1520	950	35	2.4	9.2	7.4

TPH = total petroleum hydrocarbons

< = less than the laboratory method reporting limit as specified



Table 4  
 Groundwater Data for Pilot Remedial Program  
 575 Paseo Grande  
 San Lorenzo, California

Well ID	Date Sampled	TPH-g <i>Units</i>	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Nitrate as NO <sub>3</sub> mg/L	Kjeldahl Nitrogen mg/L	Dissolved Oxygen <sup>(1)</sup> mg/L	ORP <sup>(1)</sup> millivolts
<b>Peroxide Treatment Area - A Zone Injection Wells</b>										
PIW-A1	5/13/2004	6,800	460	50	31	300	NA	NA	0.10	99
	6/18/2004	240	10	2.1	4	11	NA	NA	25.42	213
	8/27/2004	220	14	1.2	2	5	NA	NA	20.11	NA
	10/5/2004	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	NA	NA
	12/2/2004	640	63	12.0	15	29	NA	NA	3.72	294
PIW-A2	5/13/2004	20,000	1,500	460	760	2,600	NA	NA	1.23	99
	6/18/2004	2,800	150	14	6.5	90	NA	NA	12.57	267
	8/27/2004	500	34	3	4.4	12	NA	NA	19.58	NA
	12/2/2004	350	6.1	1.2	2.4	5.4	NA	NA	18.50	320
PIW-A3	12/14/2004	1,500	220	28	55	99	NA	NA	NA	NA
<b>Peroxide Treatment Area - B Zone Injection Wells</b>										
PIW-B1	5/13/2004	1,900	28	<5.0	11	51	NA	NA	1.30	103
	6/18/2004	270	22	1	2.2	2.7	NA	NA	19.87	243
	8/27/2004	230	11	0.85	1.7	4.3	NA	NA	18.69	NA
	12/2/2002	66	<0.5	<0.5	<0.5	<1.0	NA	NA	29.95	441
PIW-B3	5/13/2004	3,300	420	17	7.8	44	NA	NA	0.32	108
	6/18/2004	180	1.2	<0.5	<0.5	2.4	NA	NA	15.50	302
	8/27/2004	230	20.0	0.93	3.3	2.9	NA	NA	19.12	NA
	12/2/2004	64	0.75	<0.5	<0.5	<1.0	NA	NA	26.96	335
<b>Peroxide Treatment Area - A Zone Observation Wells</b>										
POBS-A1	5/13/2004	16,000	2,200	220	480	980	NA	NA	0.71	126
	6/18/2004	11,000	2,200	150	120	820	NA	NA	1.09	92
	8/27/2004	23,000	2,900	140	180	470	NA	NA	0.15	NA
	10/5/2004	13,000	2,400	83	130	94	NA	NA	NA	NA
	12/2/2004	17,000	3,500	240	210	730	NA	NA	0.22	26
	12/14/2004	13,000	2,700	200	220	510	NA	NA	NA	NA
MW-3	5/13/2004	3,900	1,200	19	<5.0	<10	NA	NA	0.31	-121
	6/18/2004	4,300	1,600	40	81	26	NA	NA	1.19	-66
	8/27/2004	6,900	2,100	59	220	<50	NA	NA	0.33	NA
	10/5/2004	9,800	2,500	52	160	38	NA	NA	NA	NA
	12/2/2004	8,300	2,400	41	200	29	NA	NA	0.43	18
	12/14/2004	15,000	3,600	140	560	210	NA	NA	NA	NA

Table 4  
 Groundwater Data for Pilot Remedial Program  
 575 Paseo Grande  
 San Lorenzo, California

Well ID	Date Sampled	TPH-g <i>Units</i>	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Nitrate as NO <sub>3</sub> mg/L	Kjeldahl Nitrogen mg/L	Dissolved Oxygen <sup>(1)</sup> mg/L	ORP <sup>(1)</sup> millivolts
<b>Peroxide Treatment Area - B Zone Observation Wells</b>										
POBS-B1	5/13/2004	11,000	250	71	160	590	NA	NA	0.11	77
	6/18/2004	3,500	9.8	<0.5	0.8	13	NA	NA	1.61	132
	8/27/2004	500	1.4	<0.5	<0.5	<1.0	NA	NA	0.19	NA
	12/2/2004	190	2.6	<0.5	<0.5	<1.0	NA	NA	0.22	-21
POBS-B2	5/13/2004	4,500	150	23	11	120	NA	NA	0.21	92
	6/18/2004	97	7.4	0.8	1.6	1.7	NA	NA	7.95	266
	8/27/2004	240	36.0	1.6	6.7	4.2	NA	NA	7.33	NA
	12/2/2004	<50	<0.5	<0.5	<0.5	<1.0	NA	NA	10.80	280
<b>Nitrate Injection Area - A Zone Injection Wells</b>										
NIW-A1	5/13/2004	9,300	1,800	59	250	96	<1.0	NA	1.93	117
	6/18/2004	3,100	340	22	93	55	<2.0	NA	2.99	-34
	8/27/2004	250	13	1.4	6	5.7	<1.0	180	0.49	NA
	10/5/2004	1,700	150	<5.0	24	12	NA	120	NA	NA
	12/2/2004	1,400	28	6.2	10	23	NA	260	0.13	-1
NIW-A2	5/13/2004	970	18	<2.5	<2.5	4	<1.0	NA	0.53	112
	6/18/2004	200	6.4	1.7	2.1	3.5	<2.0	NA	1.96	-57
	8/27/2004	<500	6.3	<5.0	<5.0	<10	<1.0	180	0.35	NA
	12/2/2004	<50	<0.5	<0.5	<0.5	<1.0	NA	270	0.21	29

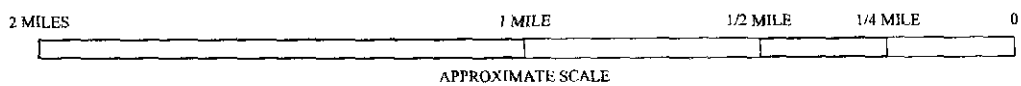
Table 4  
 Groundwater Data for Pilot Remedial Program  
 575 Paseo Grande  
 San Lorenzo, California

Well ID	Date Sampled	TPH-g <i>Units</i>	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Nitrate as NO <sub>3</sub> mg/L	Kjeldahl Nitrogen mg/L	Dissolved Oxygen <sup>(1)</sup> mg/L	ORP <sup>(1)</sup> millivolts
<b>Nitrate Injection Area - B Zone Injection Wells</b>										
NIW-B1	5/13/2004	170	6.5	1.1	2.4	8.0	25	NA	0.37	120
	6/18/2004	160	2.9	0.7	2.6	2.5	26	NA	0.55	-76
	8/27/2004	110	6.9	<0.5	1.4	2.0	30	5	0.16	NA
	12/2/2004	<50	<0.5	<0.5	<0.5	<1.0	NA	94	0.18	43
NIW-B2	5/13/2004	260	8.9	1.5	4	8.4	35	NA	0.25	112
	6/18/2004	120	1.0	<0.5	1.1	<1	40	NA	0.35	-46
	8/27/2004	120	4.4	<0.5	1.1	1.6	39	10	0.31	NA
	12/2/2004	<50	<0.5	<0.5	<0.5	<1.0	NA	17	0.26	247
<b>Nitrate Injection Area - Observation Wells</b>										
MW-4	5/13/2004	7,400	290	29	110	100	<1.0	NA	0.33	-52
	6/18/2004	2,700	140	12	36	16	<1.0	NA	0.56	-63
	8/27/2004	460	19	1.2	1.1	1.5	<1.0	<0.40	0.38	NA
	10/5/2004	460	19	<1.0	<1.0	<1.0	NA	<0.40	NA	NA
	12/2/2004	2,800	120	5.4	8.3	5.3	NA	<0.40	0.25	-12
NOBS-B1	5/13/2004	120	4.6	0.8	2.3	5.4	35	NA	0.11	93
	6/18/2004	88	1.9	0.7	1.7	<1	34	NA	0.53	-76
	8/27/2004	180	5.5	0.53	0.99	1.6	38	1.7	0.30	NA
	12/2/2004	<50	2.0	<0.5	<0.5	<1.0	NA	4.3	0.27	12

Notes:

NA = water sample not analyzed for specified constituents

(1) - Field Measurement Using Flow Through Cell



TOPOGRAPHIC MAP  
SAN LORENZO, CALIFORNIA  
1993

**EFI**  
Engineering and Fire  
Investigations

111 Deerwood road,  
Suite 195  
San Ramon, California 94583  
PH. (925) 820-9580  
Fax (925) 820-9587

**FIGURE 1**  
SITE LOCATION MAP

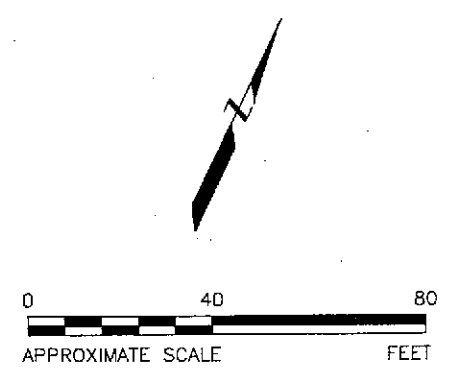
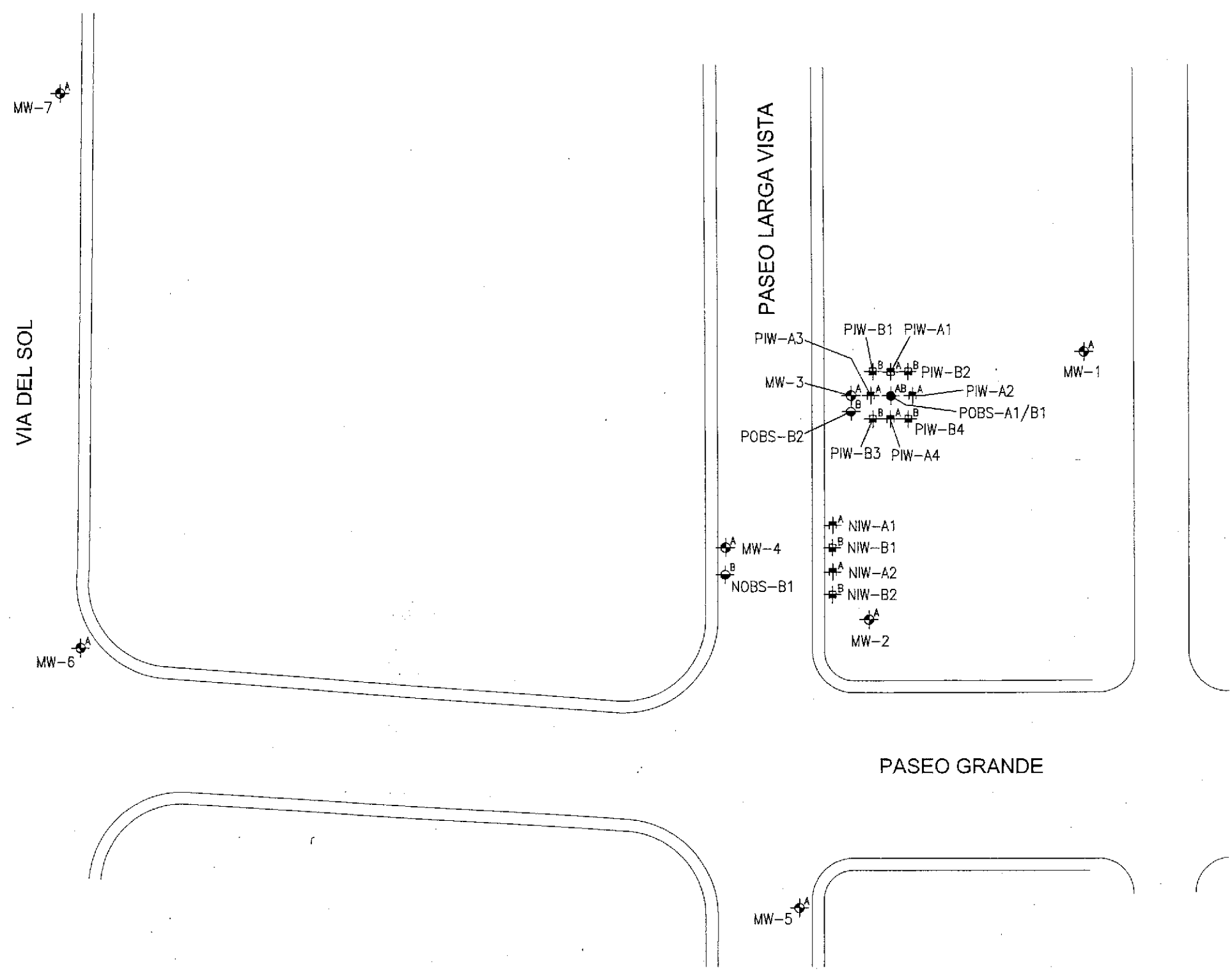
**BOHANNON DEVELOPMENT  
COMPANY**

575 PASEO GRANDE  
SAN LORENZO, CALIFORNIA

EFJ Job No.  
98360.00001

4/5/04

LEGEND	
	A-ZONE GROUNDWATER MONITORING WELL
	A-ZONE NITRATE INJECTION WELL
	B-ZONE NITRATE INJECTION WELL
	A-ZONE HYDROGEN PEROXIDE INJECTION WELL
	B-ZONE HYDROGEN PEROXIDE INJECTION WELL
	B-ZONE OBSERVATION WELL
	A-ZONE/B-ZONE OBSERVATION WELLS (NESTED WELLS)



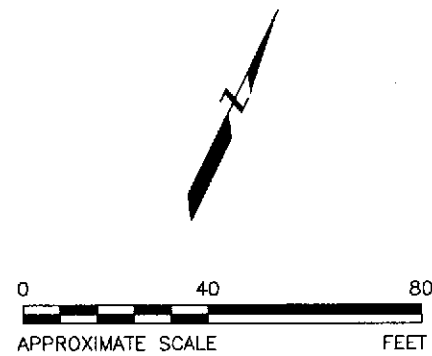
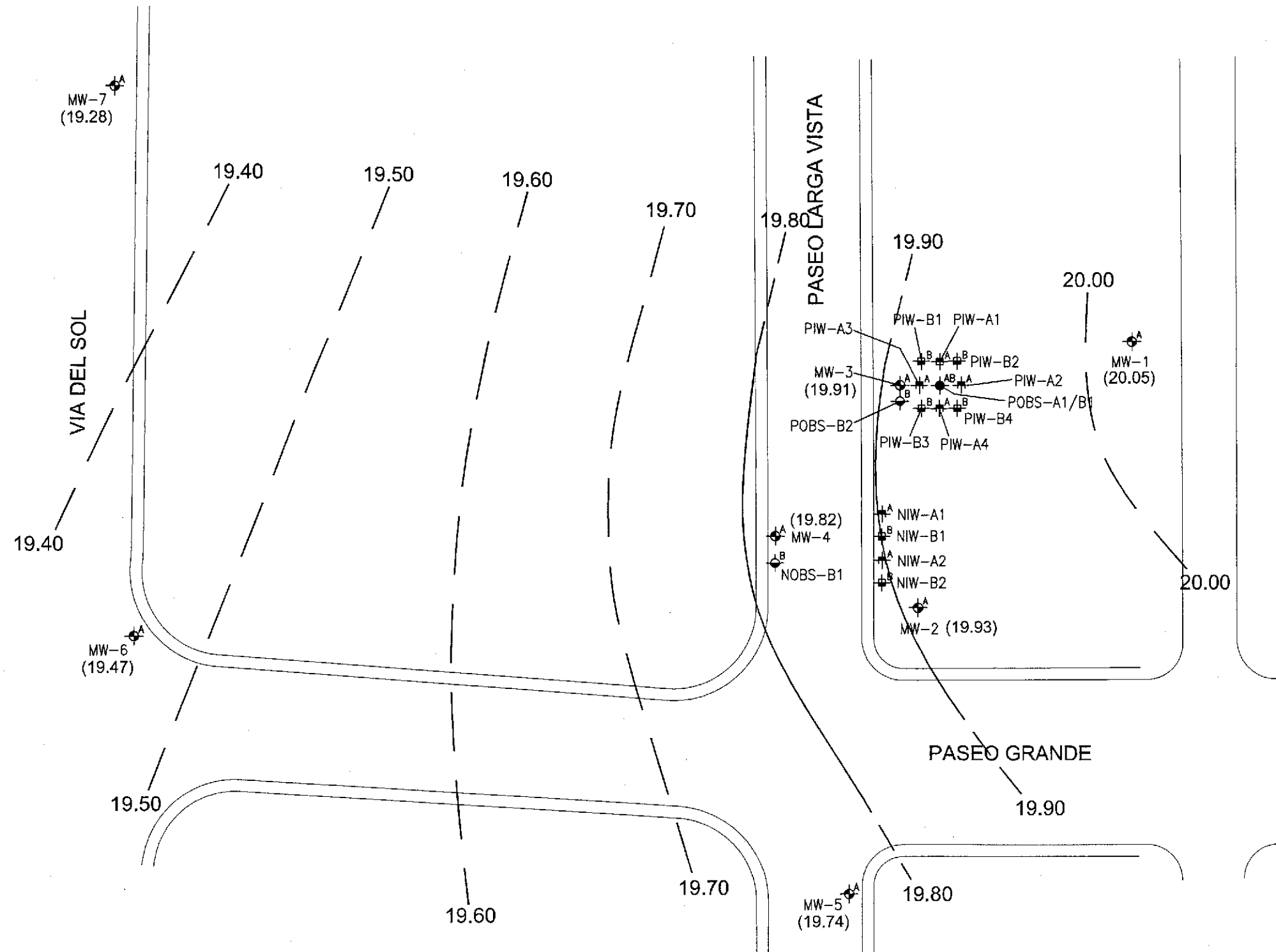
**FIGURE 2**  
SITE PLAN

**BOHANNON DEVELOPMENT COMPANY**  
  
575 PASEO GRANDE  
SAN LORENZO, CALIFORNIA

EFI Job No.  
98360-00011  
  
Date:  
03/13/05

LEGEND	
	A-ZONE GROUNDWATER MONITORING WELL
	A-ZONE NITRATE INJECTION WELL
	B-ZONE NITRATE INJECTION WELL
	A-ZONE HYDROGEN PEROXIDE INJECTION WELL
	B-ZONE HYDROGEN PEROXIDE INJECTION WELL
	B-ZONE OBSERVATION WELL
	A-ZONE/B-ZONE OBSERVATION WELLS (NESTED WELLS)

(19.28) POTENTIOMETRIC SURFACE ELEVATION (ft msl)  
 19.90 POTENTIOMETRIC SURFACE ELEVATION CONTOUR (ft msl)  
 ft msl FEET ABOVE MEAN SEA LEVEL



**FIGURE 3**

POTENTIOMETRIC SURFACE MAP, DECEMBER 2, 2004

**BOHANNON DEVELOPMENT COMPANY**

575 PASEO GRANDE  
 SAN LORENZO, CALIFORNIA

EFI Job No.  
 98360-00011

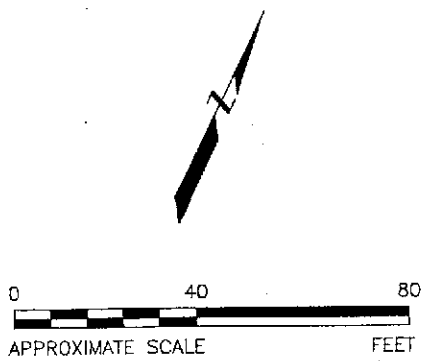
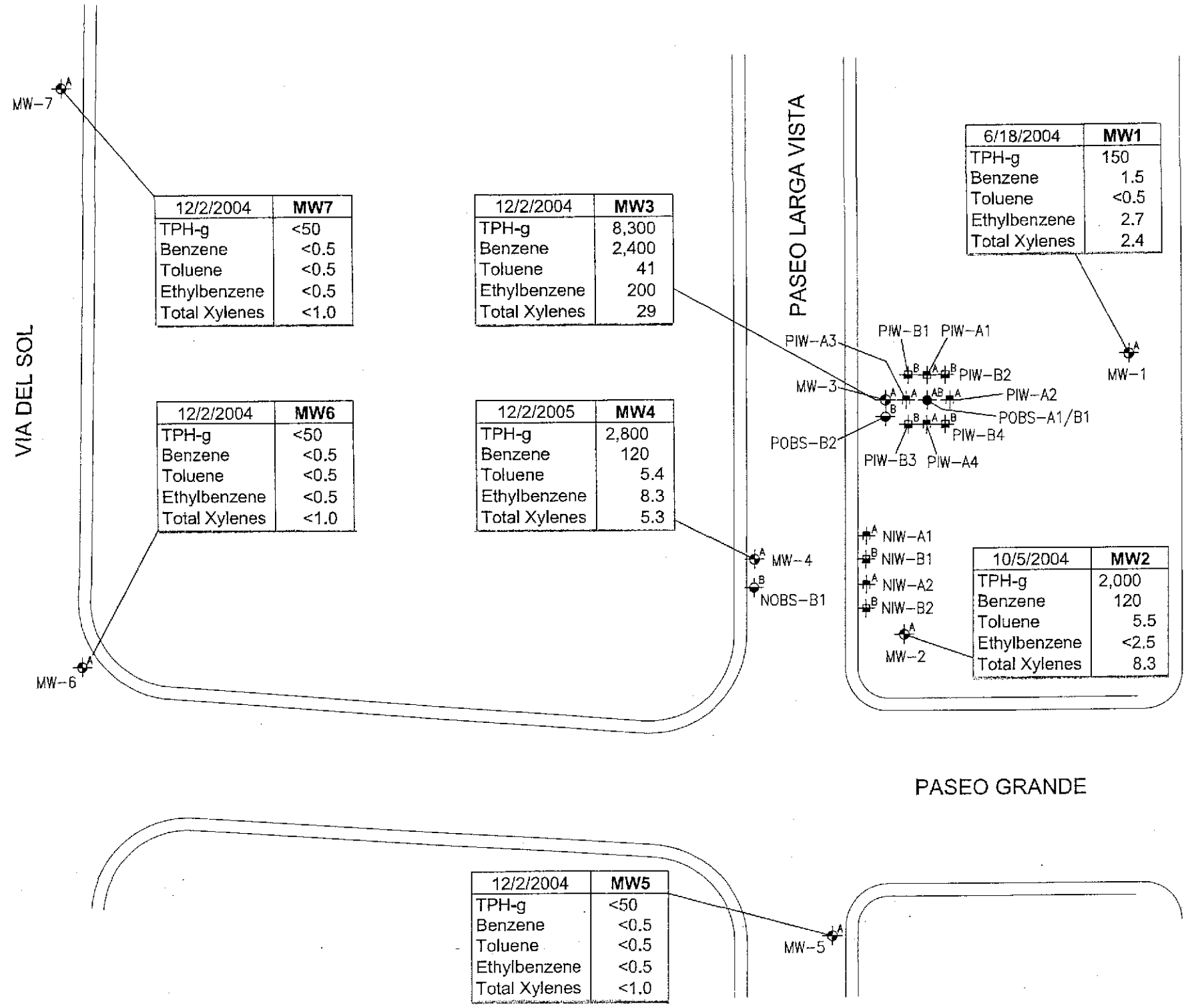
Date:  
 03/13/05



**LEGEND**

- A-ZONE GROUNDWATER MONITORING WELL
- NIW-A1 A-ZONE NITRATE INJECTION WELL
- NIW-B1 B-ZONE NITRATE INJECTION WELL
- PIW-A1 A-ZONE HYDROGEN PEROXIDE INJECTION WELL
- PIW-B1 B-ZONE HYDROGEN PEROXIDE INJECTION WELL
- POBS-B1 B-ZONE OBSERVATION WELL
- A-ZONE/B-ZONE OBSERVATION WELLS (NESTED WELLS)

NOTE:  
RESULTS REPORTED IN MILLIGRAMS  
PER LITER (mg/L).



**FIGURE 4**  
CHEMICAL  
CONCENTRATIONS  
IN GROUNDWATER  
SECOND SEMESTER, 2004

**BOHANNON DEVELOPMENT  
COMPANY**  
  
575 PASEO GRANDE  
SAN LORENZO, CALIFORNIA

EFI Job No.  
98360-00011  
  
Date:  
03/13/05

Figure 5 - Historical Concentrations of Benzene at MW-2 and MW-4

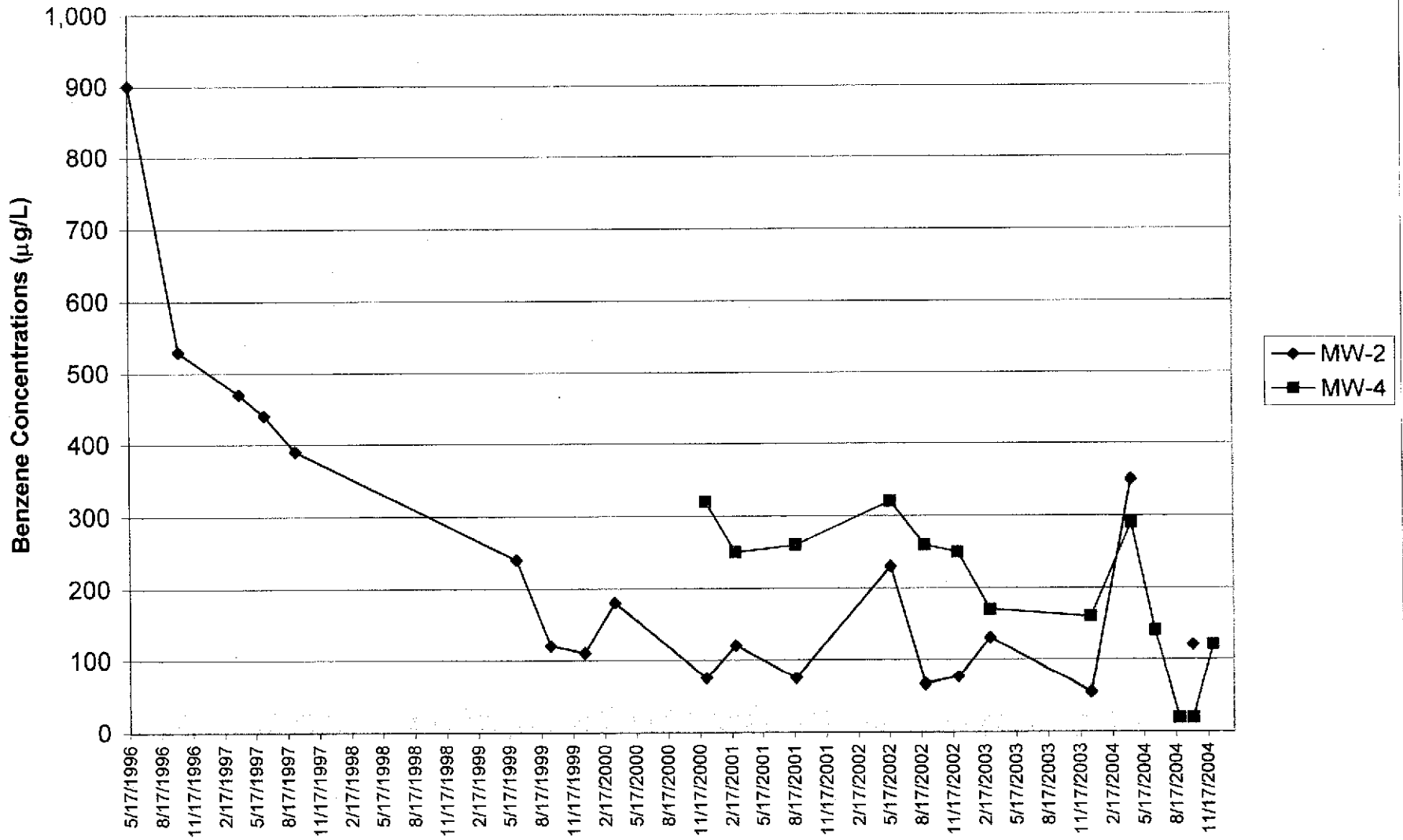




Figure 6 - Historical Concentrations of Benzene at MW-3

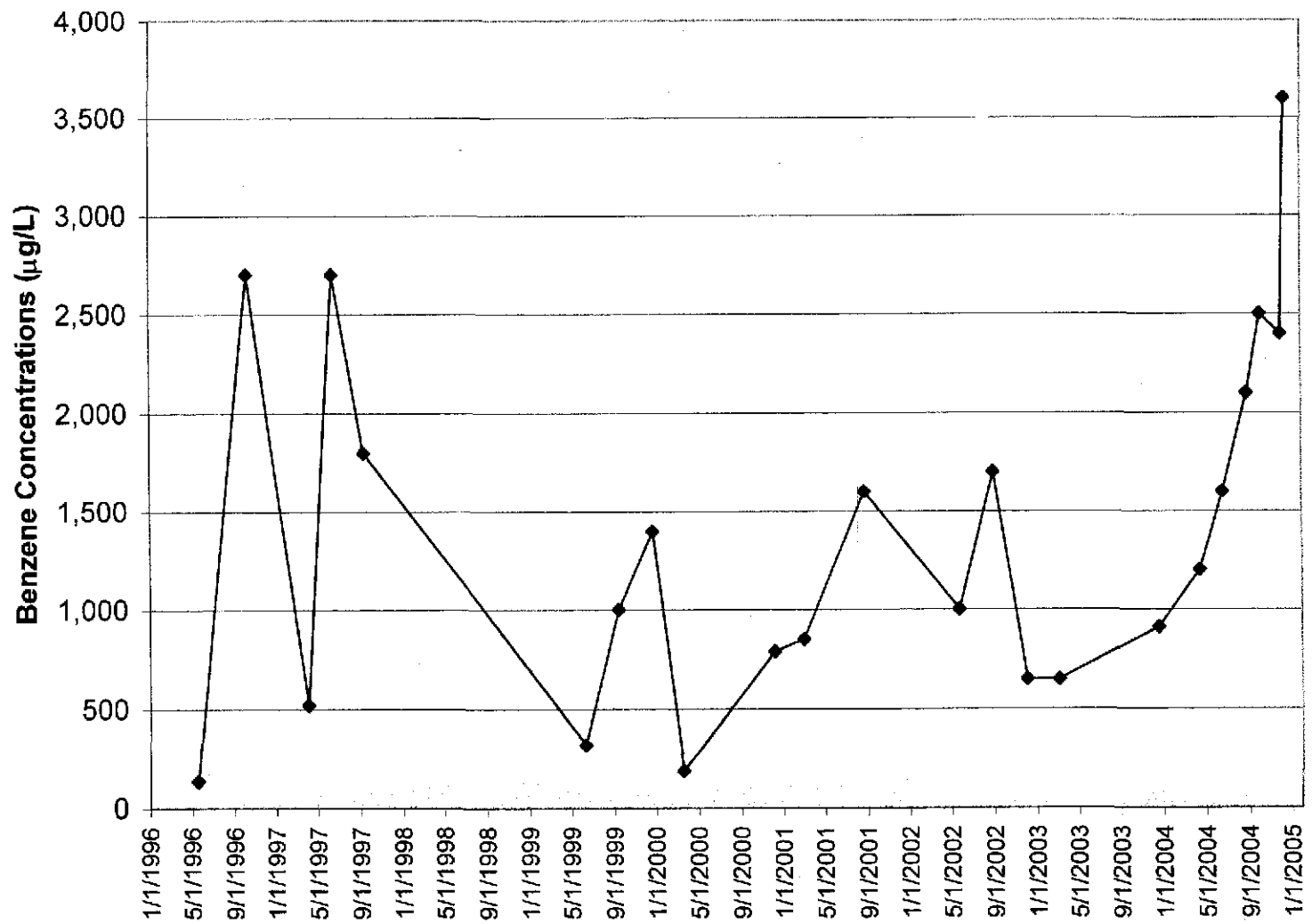


Figure 7 - Historical Concentrations of TPH-g at MW-2 and MW-4

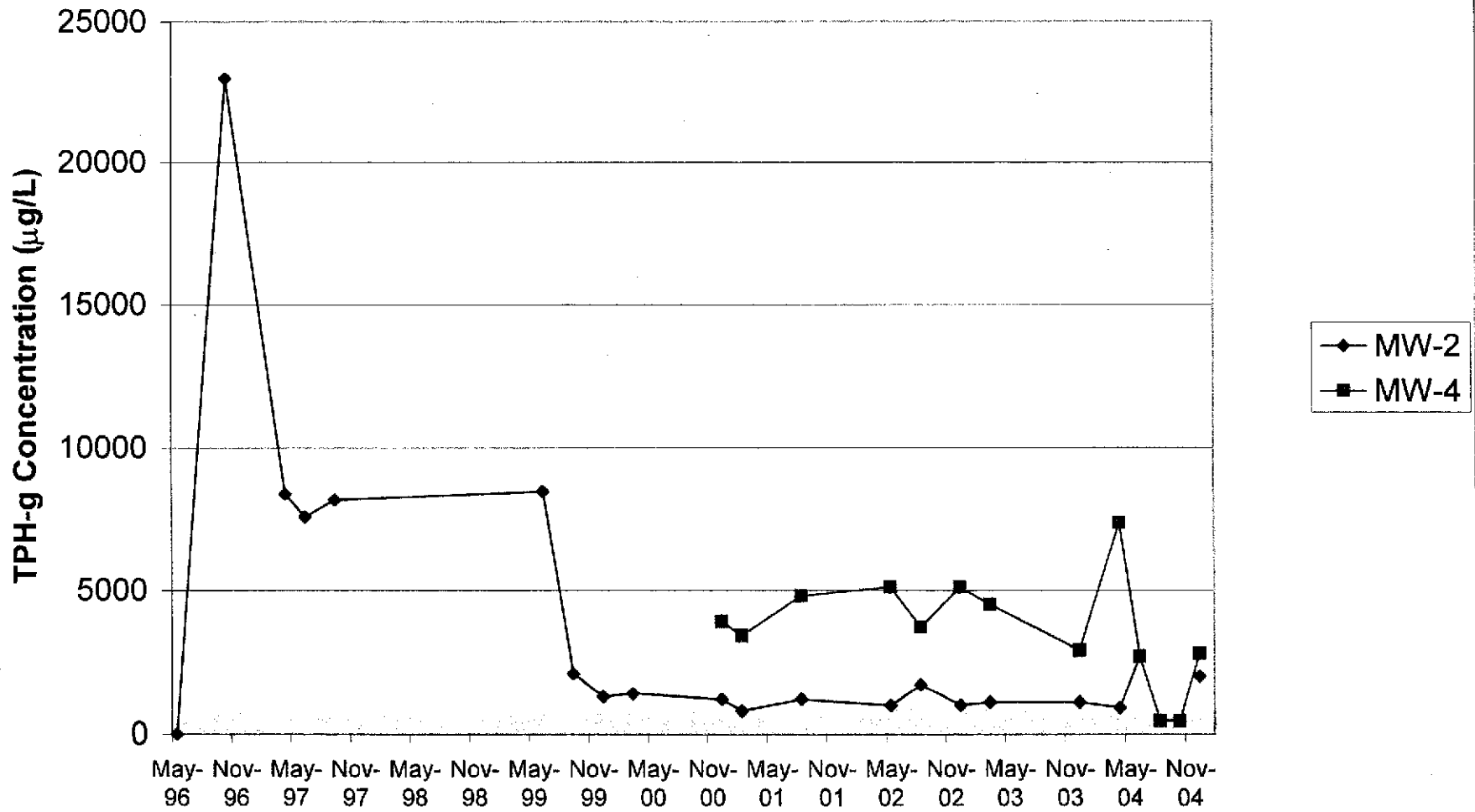
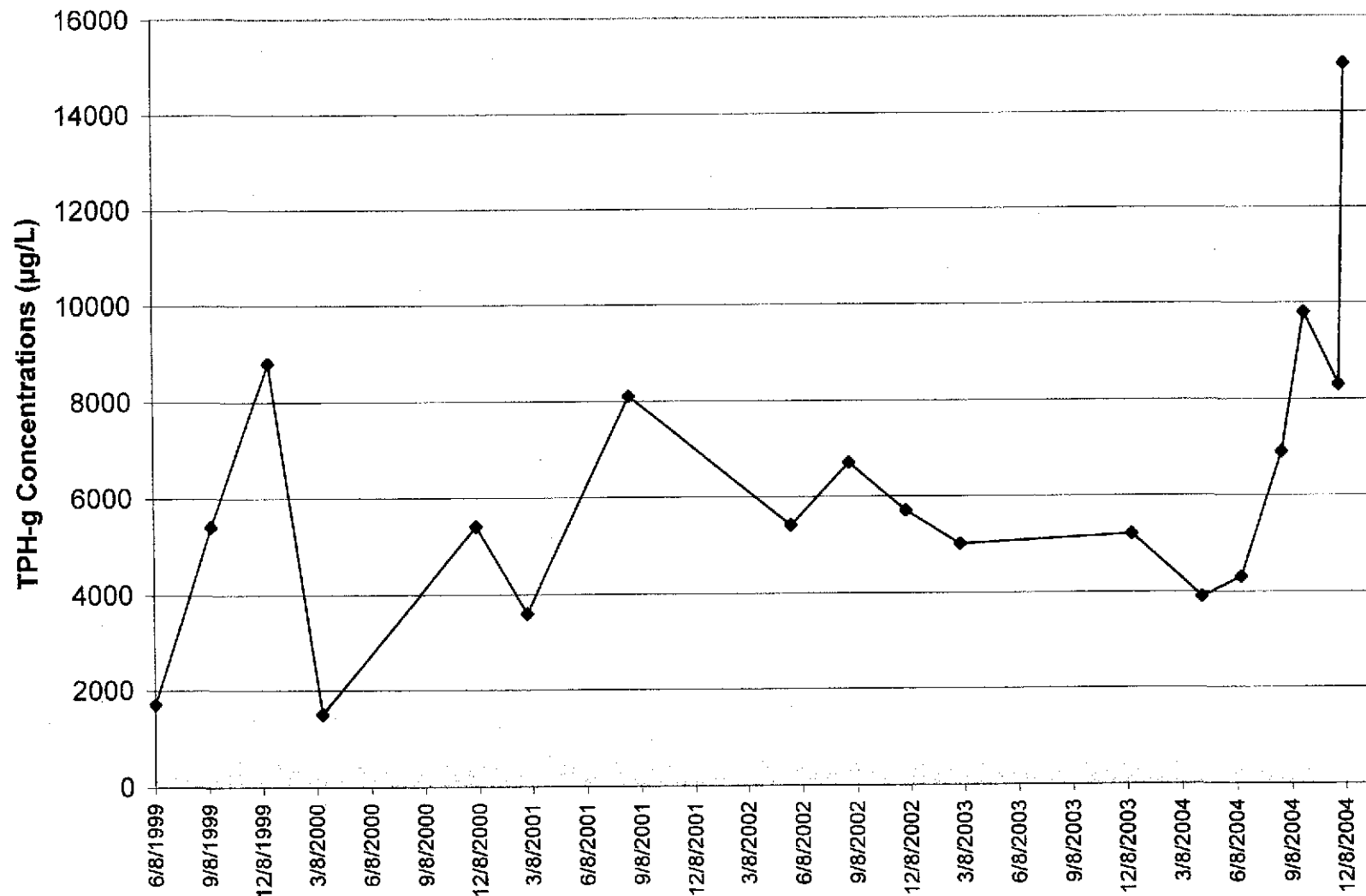


Figure 8 - Historical Concentrations of TPH-g at MW-3  
(June 1999 to December 2005)



APPENDIX A  
FIELD DATA SHEETS

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon Well Designation: N1W-A1  
 Project Number: \_\_\_\_\_ Field Personnel: Mark Williams  
 Site Location: San Lorenzo, Ca

WELL VOLUME CALCULATION							
Total Well Depth (ft)	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
				2-inch	4-inch	6-inch	
		=		0.16	0.64	1.44	1X =
		=					3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	<u>24.26</u>	<u>24.22</u>	<u>24.07</u>				
ORP	<u>214</u>	<u>212</u>	<u>215</u>				
Dissolved Oxygen	<u>0.47</u>	<u>0.51</u>	<u>0.49</u>				
pH	<u>6.58</u>	<u>6.59</u>	<u>7.00</u>				
Specific Conductivity (µmhos)	<u>1.73</u>	<u>1.80</u>	<u>1.80</u>				
Turbidity/Color	<u>Clear</u>	<u>clear</u>	<u>clear</u>				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: Nitrate + BTEX/gals

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon  
Project Number: \_\_\_\_\_  
Site Location: San Lorenzo, Ca

Well Designation: N1W-A2  
Field Personnel: Mark Williams

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-		=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)	1	1	1				
Temperature (°C)	23.61	23.66	23.49				
ORP	205	204	207				
Dissolved Oxygen	0.35	0.39	0.35				
pH	6.78	6.54	6.50				
Specific Conductivity (µmhos)	1.63	1.73	1.77				
Turbidity/Color	blue	blue	blue				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: Nitrate + BTEX/gas

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon  
Project Number: \_\_\_\_\_  
Site Location: San Lorenzo, Ca

Well Designation: NLW-81  
Field Personnel: Mark Williams

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
					0.16	0.64	1.44	1X =
								3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)	1	1	1				
Temperature (°C)	23.68	23.60	23.59				
ORP	206	208	207				
Dissolved Oxygen	0.19	0.17	0.16				
pH	6.81	6.80	6.75				
Specific Conductivity (µmhos)	1.258	1.342	1.307				
Turbidity/Color	Clear	Clear	Clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: Velocity 0.5ex / gpm

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon

Well Designation: NIW-BZ

Project Number: \_\_\_\_\_

Field Personnel: Mark Williams

Site Location: San Lorenzo, Ca

WELL VOLUME CALCULATION							
Total Well Depth (ft)	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
		=		2-inch	4-inch	6-inch	1X =
		=		0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)							
Temperature (°C)	24.81	24.80	24.85				
ORP	200	201	199				
Dissolved Oxygen	0.32	0.30	0.31				
pH	6.83	6.80	6.85				
Specific Conductivity (µmhos)	1.23	1.07	1.11				
Turbidity/Color	Clear	Clear	Clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_

Water Level Determined By: \_\_\_\_\_

Purge Method: \_\_\_\_\_

Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_

Sampling Equipment: \_\_\_\_\_

Time of Sample Collection: \_\_\_\_\_

Comments: Nitrate / BTEX / etc

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_

Drum Designation(s)/Volume: \_\_\_\_\_

Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO

Inside of Well Head and Outer Casing Dry?: YES NO

Comments: \_\_\_\_\_



GROUNDWATER WELL - PURGE AND SAMPLE RECORD

Date: August 27, 2004

Project Name: Bohannon Well Designation: MW-4  
 Project Number: \_\_\_\_\_ Field Personnel: Mark Williams  
 Site Location: San Lorenzo, Ca

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-	<u>6.53</u>	=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	<u>1</u>	<u>2</u>	<u>3</u>				
Purge Rate (gpm)							
Temperature (°C)	<u>21.95</u>	<u>21.11</u>	<u>21.15</u>				
ORP	<u>162</u>	<u>159</u>	<u>158</u>				
Dissolved Oxygen	<u>4.86.39</u>	<u>0.36</u>	<u>0.36</u>				
pH	<u>6.67</u>	<u>6.61</u>	<u>6.67</u>				
Specific Conductivity (µmhos)	<u>1.196</u>	<u>1.170</u>	<u>1.182</u>				
Turbidity/Color	<u>slightly cloudy</u>	<u>slightly cloudy</u>	<u>clear</u>				
Odor/Sheen	<u>odor</u>	<u>slightly odor</u>	<u>slightly odor</u>				
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**  
 Static Water Level: 6.53 Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: Nitrak / BTEX / 44

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**  
 Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**  
 Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon

Well Designation: NOBS-B

Project Number: \_\_\_\_\_

Field Personnel: Mark Williams

Site Location: San Lorenzo, Ca

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-	<u>6.40</u>	=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	<u>1</u>	<u>2</u>	<u>3</u>				
Purge Rate (gpm)							
Temperature (°C)	<u>22.38</u>	<u>22.41</u>	<u>22.39</u>				
ORP	<u>176</u>	<u>181</u>	<u>179</u>				
Dissolved Oxygen	<u>0.32</u>	<u>0.29</u>	<u>0.30</u>				
pH	<u>6.92</u>	<u>6.88</u>	<u>6.87</u>				
Specific Conductivity (µmhos)	<u>1267</u>	<u>1301</u>	<u>1285</u>				
Turbidity/Color	<u>Clear</u>	<u>Clear</u>	<u>Clear</u>				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: 6.40 Description of Water Level Measurement Point: \_\_\_\_\_

Water Level Determined By: \_\_\_\_\_

Purge Method: \_\_\_\_\_

Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_

Sampling Equipment: \_\_\_\_\_

Time of Sample Collection: \_\_\_\_\_

Comments: Nitrate / BTEX / GHS

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_

Drum Designation(s)/Volume: \_\_\_\_\_

Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO

Inside of Well Head and Outer Casing Dry?: YES NO

Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon  
Project Number: \_\_\_\_\_  
Site Location: San Lorenzo, Ca

Well Designation: P1W-A1  
Field Personnel: Mark Williams

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	1X =
	-		=		0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)	1						
Temperature (°C)	23.29	23.33	23.30				
ORP	207	206	201				
Dissolved Oxygen	20.96	20.85	20.11				
pH	6.80	6.75	6.77				
Specific Conductivity (µmhos)	0.902	0.877	0.891				
Turbidity/Color	Clear	Clear	Clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: BTEX / gas

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

GROUNDWATER WELL - PURGE AND SAMPLE RECORD

Date: August 27, 2004

Project Name: Bohannon Well Designation: P.W.-A2  
 Project Number: \_\_\_\_\_ Field Personnel: Mark Williams  
 Site Location: San Lorenzo, Ca

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-		=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)							
Temperature (°C)	25.07	25.66	25.61				
ORP	196	191	190				
Dissolved Oxygen	19.60	19.59	19.58				
pH	6.85	6.84	6.87				
Specific Conductivity (µmhos)	0.602	0.611	0.617				
Turbidity/Color	Clear	Clear	Clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: BTEX / 945

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

GROUNDWATER WELL - PURGE AND SAMPLE RECORD

Date: August 27, 2004

Project Name: Bohannon  
Project Number: \_\_\_\_\_  
Site Location: San Lorenzo, Ca

Well Designation: PIW-A3  
Field Personnel: Mark Williams

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
	-		=		0.16	0.64	1.44	1X = 3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)							
Temperature (°C)	24.73	24.71	24.72				
ORP	209	205	207				
Dissolved Oxygen	17.23	16.95	16.55				
pH	6.50	6.45	6.49				
Specific Conductivity (µmhos)	0.703	0.711	0.707				
Turbidity/Color	Clear	Clear	Clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: Water field parameters

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon  
Project Number: \_\_\_\_\_  
Site Location: San Lorenzo, Ca

Well Designation: PIW-A4  
Field Personnel: Mark Williams

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
					0.16	0.64	1.44	1X =
								3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)							
Temperature (°C)	25.05	25.11	25.16				
ORP	207	206	208				
Dissolved Oxygen	17.17	17.05	17.09				
pH	6.48	6.49	6.50				
Specific Conductivity (µmhos)	0.941	0.873	0.895				
Turbidity/Color	clear	clear	clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: Water field parameter

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon  
Project Number: \_\_\_\_\_  
Site Location: San Lorenzo, Ca

Well Designation: PIW-51  
Field Personnel: Mark Williams

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
	-		=		0.16	0.64	1.44	1X =
								3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)							
Temperature (°C)	23.11	23.25	23.25				
ORP	218	217	216				
Dissolved Oxygen	18.63	18.72	18.69				
pH	7.41	7.42	7.45				
Specific Conductivity (µmhos)	0.447	0.439	0.443				
Turbidity/Color	clear	clear	clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: yes/BTEX

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon  
Project Number: \_\_\_\_\_  
Site Location: San Lorenzo, Ca

Well Designation: P1W-B2  
Field Personnel: Mark Williams

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-		=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)							
Temperature (°C)	24.50	24.32	23.24.45				
ORP	221	225	222				
Dissolved Oxygen	11.33	19.05	18.99				
pH	7.21	7.22	7.19				
Specific Conductivity (µmhos)	0.621	0.637	0.633				
Turbidity/Color	Clear	Clear	Clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: Water field personal

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_



GROUNDWATER WELL - PURGE AND SAMPLE RECORD

Date: August 27, 2004

Project Name: Bohannon Well Designation: P1W-B3  
 Project Number: \_\_\_\_\_ Field Personnel: Mark Williams  
 Site Location: San Lorenzo, Ca

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
	-		=		0.16	0.64	1.44	1X =
								3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)							
Temperature (°C)	24.77	24.65	24.63				
ORP	212	210	205				
Dissolved Oxygen	19.56	19.33	19.12				
pH	7.19	7.15	7.18				
Specific Conductivity (µmhos)	0.451	0.466	0.469				
Turbidity/Color	clear	clear	clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: gls/BTL

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL – PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon  
Project Number: \_\_\_\_\_  
Site Location: San Lorenzo, Ca

Well Designation: P1W-84  
Field Personnel: Mark Williams

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-		=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)							
Temperature (°C)	24.63	24.67	24.62				
ORP	221	225	227				
Dissolved Oxygen	2.137	2.105	2.101				
pH	6.99	7.00	7.01				
Specific Conductivity (µmhos)	0.686	0.677	0.672				
Turbidity/Color	Clear	Clear	Clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: water field parameter

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

GROUNDWATER WELL - PURGE AND SAMPLE RECORD

Date: August 27, 2004

Project Name: Bohannon  
Project Number: \_\_\_\_\_  
Site Location: San Lorenzo, Ca

Well Designation: POBS-131 POBS-A1  
Field Personnel: Mark Williams

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
<del>24</del>		<del>2.50</del>	=		0.16	0.64	1.44	IX =
<u>17.50</u>		<u>7.49</u>						3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	1	2	3				
Purge Rate (gpm)							
Temperature (°C)	23.34	23.41	22.44				
ORP	<del>28</del> 193	199	201				
Dissolved Oxygen	0.18	0.17	0.15				
pH	6.50	6.49	6.50				
Specific Conductivity (umhos)	1164	1168	1165				
Turbidity/Color	clear	clear	clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

SAMPLE DATA:

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: gas / filter

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

PURGE WATER DISPOSAL:

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

WELL HEAD CONDITIONS:

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon

Well Designation: POB3-AB

POB3-B

Project Number: \_\_\_\_\_

Field Personnel: Mark Williams

Site Location: San Lorenzo, Ca

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	1X =
<u>17.10</u>	-	<u>2.47</u>	=		0.16	0.64	1.44	3X =
<u>24.3</u>		<u>7.56</u>						

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	<u>1</u>	<u>2</u>	<u>3</u>				
Purge Rate (gpm)							
Temperature (°C)	<u>22.35</u>	<u>22.49</u>	<u>22.48</u>				
ORP <u>mv</u>	<u>205</u>	<u>205</u>	<u>207</u>				
Dissolved Oxygen <u>ml</u>	<u>0.22</u>	<u>0.21</u>	<u>0.19</u>				
pH	<u>6.76</u>	<u>6.77</u>	<u>6.75</u>				
Specific Conductivity ( <u>µmhos</u> ) <u>ms/cm</u>	<u>1.335</u>	<u>1.344</u>	<u>1.351</u>				
Turbidity/Color	<u>clear</u>	<u>clear</u>	<u>clear</u>				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_

Water Level Determined By: \_\_\_\_\_

Purge Method: \_\_\_\_\_

Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_

Sampling Equipment: \_\_\_\_\_

Time of Sample Collection: \_\_\_\_\_

Comments: gls / BTEX

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_

Drum Designation(s)/Volume: \_\_\_\_\_

Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO

Inside of Well Head and Outer Casing Dry?: YES NO

Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon

Well Designation: MW-3

Project Number: \_\_\_\_\_

Field Personnel: Mark Williams

Site Location: San Lorenzo, Ca

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-	<u>6.1</u>	=		2-inch	4-inch	6-inch	1X =
		<u>7.92</u>			0.16	0.64	1.44	3X =
		<u>7.09</u>						

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	<u>1</u>	<u>2</u>	<u>3</u>				
Purge Rate (gpm)							
Temperature (°C)	<u>24.75</u>	<u>24.77</u>	<u>24.75</u>				
ORP	<u>174</u>	<u>165</u>	<u>169</u>				
Dissolved Oxygen	<u>0.35</u>	<u>0.31</u>	<u>0.33</u>				
pH	<u>6.59</u>	<u>6.61</u>	<u>6.60</u>				
Specific Conductivity (µmhos)	<u>1.97</u>	<u>1.89</u>	<u>1.93</u>				
Turbidity/Color	<u>Clear</u>	<u>Clear</u>	<u>Clear</u>				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_

Water Level Determined By: \_\_\_\_\_

Purge Method: \_\_\_\_\_

Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_

Sampling Equipment: \_\_\_\_\_

Time of Sample Collection: \_\_\_\_\_

Comments: gas / BTEX

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_

Drum Designation(s)/Volume: \_\_\_\_\_

Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO

Inside of Well Head and Outer Casing Dry?: YES NO

Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: August 27, 2004

Project Name: Bohannon  
Project Number: \_\_\_\_\_  
Site Location: San Lorenzo, Ca

Well Designation: POBS-23 POBS-82  
Field Personnel: Mark Williams

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-	<u>6.92</u>	=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged	<u>1</u>	<u>2</u>	<u>3</u>				
Purge Rate (gpm)							
Temperature (°C)	<u>29.71</u>	<u>29.12</u>	<u>29.25</u>				
ORP	<u>191</u>	<u>196</u>	<u>189</u>				
Dissolved Oxygen	<u>7.32</u>	<u>7.36</u>	<u>7.33</u>				
pH	<u>6.80</u>	<u>6.82</u>	<u>6.81</u>				
Specific Conductivity (µmhos)	<u>1.307</u>	<u>1.343</u>	<u>1.332</u>				
Turbidity/Color	<u>Clear</u>	<u>Clear</u>	<u>Clear</u>				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: 995 BTW

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

GROUNDWATER WELL - PURGE AND SAMPLE RECORD

Date: 12/2/04

Project Name: Bohannon Groundwater Decontamination  
Project Number: 98360-02-015  
Site Location: San Lorenzo, CA

Well Designation: MW-7  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION							
Total Well Depth (ft)	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	6.15	=		2-inch	4-inch	6-inch	1X =
				0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	11:40	11:43	11:45	11:47			
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	18.97	18.97	18.98	19.02			
ORP	272.5	268	263.4	258.6			
Dissolved Oxygen (mg/L)	0.58	0.52	0.45	0.52			
pH	6.84	6.85	6.85	6.85			
Specific Conductivity (µmhos)	820	820	820	820			
Turbidity/Color	clear	clear	clear	clear			
Odor/Sheen	none	none	none	none			
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

SAMPLE DATA:

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

PURGE WATER DISPOSAL:

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

WELL HEAD CONDITIONS:

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: 12/2/04

Project Name: Bohannon Groundwater Decont  
Project Number: 98360-02-015  
Site Location: San Lorenzo, CA

Well Designation: MW-6  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
		<u>5.42</u>	=		0.16	0.64	1.44	1X = 3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	<u>12:00</u>	<u>12:03</u>	<u>12:10</u>	<u>12:12</u>			
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	<u>20.74</u>	<u>20.77</u>	<u>20.76</u>	<u>20.74</u>			
ORP	<u>249.7</u>	<u>248.5</u>	<u>245.4</u>	<u>246</u>			
Dissolved Oxygen	<u>0.59</u>	<u>0.54</u>	<u>0.45</u>	<u>0.42</u>			
pH	<u>6.79</u>	<u>6.76</u>	<u>6.74</u>	<u>6.79</u>			
Specific Conductivity (µmhos)	<u>702</u>	<u>701</u>	<u>697</u>	<u>696</u>			
Turbidity/Color	<u>cloudy</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>			
Odor/Sheen	<u>none</u>	<u>none</u>	<u>none</u>	<u>none</u>			
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_



GROUNDWATER WELL - PURGE AND SAMPLE RECORD

Date: 12/2/04

Project Name: Bohannon Groundwater Decont  
Project Number: 98360-02-BIS  
Site Location: San Lorenzo, CA

Well Designation: MW-5  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-	6.03	=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	12:23	12:25	12:27	12:29	12:31		
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	21.64	21.90	21.98	22.0	21.99		
ORP	261.4	250.2	246.8	241.6	235.0		
Dissolved Oxygen	2.17	1.58	1.12	0.88	0.76		
pH	6.88	6.78	6.85	6.83	6.84		
Specific Conductivity (µmhos)	850	859	873	882	886		
Turbidity/Color							
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

SAMPLE DATA:

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

PURGE WATER DISPOSAL:

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

WELL HEAD CONDITIONS:

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

GROUNDWATER WELL - PURGE AND SAMPLE RECORD

Date: 12/2/04

Project Name: Bohannon Groundwater Decade  
Project Number: 98560-00-015  
Site Location: San Lorenzo, CA

Well Designation: MW-4  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	1X =
		6.05	=		0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	10:52	10:54	11:01	11:03	11:05	11:08	
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	20.99	20.92	20.96	20.97	20.99	20.99	
ORP	3.9	-0.9	-6.4	-6.2	-9.1	-12.2	
Dissolved Oxygen	0.55	0.39	0.29	0.27	0.25	0.25	
pH	6.44	6.46	6.41	6.39	6.39	6.31	
Specific Conductivity (µmhos)	990	990	994	995	996	999	
Turbidity/Color	clear	clear	clear	clear	clear	clear	
Odor/Sheen	slight	slight	slight	slight	slight	slight	
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

SAMPLE DATA:

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

PURGE WATER DISPOSAL:

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

WELL HEAD CONDITIONS:

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO

Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Project Name: Bohannon Groundwater Decade Well Designation: 11W-#3 Date: 12/2/04  
 Project Number: 98360-00-015 Field Personnel: Mark Williams / Chris Maxwell  
 Site Location: San Lorenzo, CA

WELL VOLUME CALCULATION							
Total Well Depth (ft)	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	<u>4.64</u>	=		2-inch	4-inch	6-inch	1X =
				0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	<u>1538</u>	<u>1542</u>	<u>1545</u>				
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	<u>22.88</u>	<u>23.10</u>	<u>23.04</u>				
ORP	<u>160.0</u>	<u>34.7</u>	<u>17.5</u>				
Dissolved Oxygen	<u>1.07</u>	<u>0.71</u>	<u>0.43</u>				
pH	<u>6.25</u>	<u>6.30</u>	<u>6.28</u>				
Specific Conductivity (µmhos)	<u>2870</u>	<u>2919</u>	<u>2903</u>				
Turbidity/Color							
Odor/Sheen	<u>odor</u>	<u>odor</u>	<u>slight odor</u>				
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: 12/2/04

Project Name: Bohannon Groundwater Decatur  
Project Number: 98360-00-015  
Site Location: San Lorenzo, CA

Well Designation: MW-2  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
		<u>6.80</u>	=		0.16	0.64	1.44	1X = 3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day							
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)							
ORP							
Dissolved Oxygen							
pH							
Specific Conductivity (µmhos)							
Turbidity/Color							
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: 12/2/04 12/3/04

Project Name: Bohannon Groundwater Decont  
Project Number: 98560-02-015  
Site Location: San Lorenzo, CA

Well Designation: NOBS-B1  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-	<u>5.94</u>	=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	<u>10:33</u>	<u>10:37</u>	<u>10:39</u>	<u>10:41</u>	<u>10:43</u>		
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	<u>20.29</u>	<u>20.68</u>	<u>20.74</u>	<u>20.74</u>	<u>20.75</u>		
ORP	<u>20.1</u>	<u>14.9</u>	<u>13.4</u>	<u>12.3</u>	<u>12.0</u>		
Dissolved Oxygen	<u>0.96</u>	<u>0.40</u>	<u>0.32</u>	<u>0.30</u>	<u>0.27</u>		
pH	<u>6.61</u>	<u>6.71</u>	<u>6.72</u>	<u>6.73</u>	<u>6.72</u>		
Specific Conductivity (µmhos)	<u>1043</u>	<u>1053</u>	<u>1054</u>	<u>1050</u>	<u>1054</u>		
Turbidity/Color	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>	<u>clear</u>		
Odor/Sheen	<u>no odor</u>	<u>no odor</u>	<u>no odor</u>	<u>no odor</u>	<u>no odor</u>		
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: 12/2/04

Project Name: Bohannon Groundwater Decembe  
Project Number: 98360-02-015  
Site Location: San Lorenzo, CA

Well Designation: NW-1-B2  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-		=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	1252	1244	1236	1258			
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	21.95	22.10	22.11	22.12			
ORP	264.6	293.6	250.0	246.7			
Dissolved Oxygen	0.87	0.37	0.31	0.26			
pH	6.95	6.59	6.58	6.57			
Specific Conductivity (µmhos)	1138	1135	1135	1136			
Turbidity/Color							
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

GROUNDWATER WELL - PURGE AND SAMPLE RECORD

Date: 12/2/04

Project Name: Bohannon Groundwater Decontamination  
Project Number: 98360-02-BIS  
Site Location: San Lorenzo, CA

Well Designation: N.W.-B1  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-		=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	1:27	1:29	1:31				
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	21.88	21.93	21.90				
ORP	35.9	40	43.0				
Dissolved Oxygen	0.42	0.22	0.18				
pH	6.34	6.36	6.35				
Specific Conductivity (µmhos)	143.4 143.1	138.1 138.1	136.7				
Turbidity/Color	Slightly cloudy	Slightly cloudy	Slightly cloudy				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

SAMPLE DATA:

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

PURGE WATER DISPOSAL:

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

WELL HEAD CONDITIONS:

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Project Name: Bohannon Groundwater Decembe Well Designation: NIW-A2 Date: 12/2/04  
 Project Number: 98560-02-015 Field Personnel: Mark Williams / Chris Maxwell  
 Site Location: San Lorenzo, CA

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-		=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	1310	1512	1314	1316			
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	22.49	23.20	23.27	23.28			
ORP	210.0	49.1	35.9	29.2			
Dissolved Oxygen	0.45	0.27	0.20	0.21			
pH	5.68	5.78	5.90	5.44			
Specific Conductivity (µmhos)	2300	2120	1974	1941			
Turbidity/Color	lt. blue	H. blue	H. blue	H. blue			
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_



GROUNDWATER WELL - PURGE AND SAMPLE RECORD

Date: 12/2/04

Project Name: Bohannon Groundwater December  
Project Number: 98360-00-615  
Site Location: San Lorenzo, CA

Well Designation: NIW-A1  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
					0.16	0.64	1.44	1X = 3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	1343	1347	1350	1352			
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	22.76	23.02	22.48	22.99			
ORP	54.0	20.6	10.1	10.1			
Dissolved Oxygen	0.25	0.16	0.14	0.13			
pH	6.74	7.45	7.40	7.32			
Specific Conductivity (µmhos)	5300	3025	2979	2947			
Turbidity/Color	H. blue	H. blue	H. blue	H. blue			
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

SAMPLE DATA:

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

PURGE WATER DISPOSAL:

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

WELL HEAD CONDITIONS:

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

GROUNDWATER WELL - PURGE AND SAMPLE RECORD

Date: 12/2/04

Project Name: Bohannon Groundwater Decont.  
Project Number: 98560-02-615  
Site Location: San Lorenzo, CA

Well Designation: POGS-B2  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-		=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	3:23	3:25	3:28				
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	23.25	22.43	22.61				
ORP	252	279.3	280.0				
Dissolved Oxygen	7.02	7.95	10.90				
pH	6.52	6.57	6.59				
Specific Conductivity (µmhos)	1142	1127	1162				
Turbidity/Color	clear	clear	clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

SAMPLE DATA:

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

PURGE WATER DISPOSAL:

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

WELL HEAD CONDITIONS:

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Project Name: Bohannon Groundwater December Well Designation: AWW 152 POKS-B1 Date: 12/2/04  
 Project Number: 98360-02-015 Field Personnel: Mark Williams / Chris Maxwell  
 Site Location: San Lorenzo, CA

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-		=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	11:30	11:32	11:34				
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	22.36	22.46	22.15				
ORP	-22.3	-22	-21.1				
Dissolved Oxygen	0.24	0.22	0.22				
pH	6.95	6.96	6.92				
Specific Conductivity (µmhos)	1179	1181	1180				
Turbidity/Color	clear	clear	clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**  
 Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**  
 Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**  
 Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Project Name: Bahannas Groundwater Decade Well Designation: PIW-B3 Date: 12/2/04  
 Project Number: 98560-02-bis Field Personnel: Mark Williams / Chris Maxwell  
 Site Location: San Lorenzo, CA

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	3:11	3:13	3:15				
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	22.20	22.35	22.60				
ORP	335.9	334.9	334.9				
Dissolved Oxygen	2.080	2.114	2.096				
pH	5.60	5.65	5.80				
Specific Conductivity (µmhos)	6249	6262	6252				
Turbidity/Color	clear	clear	clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: 12/2/04

Project Name: Bohannon Groundwater Decont  
Project Number: 98360-00-015  
Site Location: San Lorenzo, CA

Well Designation: PTW-62  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-		=		2-inch	4-inch	6-inch	1X =
	-		=		0.16	0.64	1.44	3X =

PTW-62

PTW-64

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	<u>12:02</u>	<u>12:04</u>	<u>12:06</u>	<u>12:10</u>	<u>12:12</u>	<u>12:14</u>	
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	<u>22.16</u>	<u>22.34</u>	<u>22.44</u>	<u>22.65</u>	<u>22.61</u>	<u>22.67</u>	
ORP	<u>19</u>	<u>20.1</u>	<u>21.1</u>	<u>614</u>	<u>615</u>	<u>616</u>	
Dissolved Oxygen	<u>7.31</u>	<u>7.04</u>	<u>7.54</u>	<u>7.02</u>	<u>7.05</u>	<u>7.04</u>	
pH	<u>6.29</u>	<u>6.40</u>	<u>6.41</u>	<u>6.68</u>	<u>6.69</u>	<u>6.69</u>	
Specific Conductivity (µmhos)	<u>3195</u>	<u>2928</u>	<u>2762</u>	<u>1667</u>	<u>1666</u>	<u>1663</u>	
Turbidity/Color	<u>Clear</u>	<u>Clear</u>	<u>Clear</u>	<u>Clear</u>	<u>Clear</u>	<u>Clear</u>	
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: 12/2/04

Project Name: Behannon Groundwater Decont  
Project Number: 98560-02-015  
Site Location: San Lorenzo, CA

Well Designation: PIW-B1  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
					0.16	0.64	1.44	1X = 3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	2:07	2:12	2:14				
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	22.05	22.07	22.05				
ORP	442	435	441				
Dissolved Oxygen	29.21	30.28	29.95				
pH	5.69	5.78	5.71				
Specific Conductivity (µmhos)	6842	6950	6900				
Turbidity/Color	clear	slight/cloud	slight/cloud				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**  
 Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**  
 Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**  
 Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: 12/2/04

Project Name: Bohemian Groundwater Decont  
Project Number: 98360-02-015  
Site Location: San Lorenzo, CA

Well Designation: OCES-A1  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
					0.16	0.64	1.44	1X = 3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	3:59	4:01					
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	21.58	22.01	22.76	22.85			
ORP	191.6	21.5	22.9	25.5			
Dissolved Oxygen	0.34	0.27	0.25	0.22			
pH	6.27	6.32	6.33	6.38			
Specific Conductivity (µmhos)	1729	1686	1665	1627			
Turbidity/Color							
Odor/Sheen	Slight odor	Slight odor	Slight odor	Slight odor			
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Project Name: Bohemian Groundwater Decade Well Designation: PIW-A2 Date: 12/2/04  
 Project Number: 98360-02-015 Field Personnel: Mark Williams / Chris Maxwell  
 Site Location: San Lorenzo, CA

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	PIW-A2			PIW-A4			
	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	11:56	11:58	12:00	11:46	11:48	11:50	11:52
Volume Purged				initial			
Purge Rate (gpm)							
Temperature (°C)	22.54	22.64	22.70	23.25	23.10	23.05	23.12
ORP	38.6	41.5	43.1	36.5	33.2	34.6	35.7
Dissolved Oxygen	5.03	5.20	5.39	0.52	2.94	3.12	3.22
pH	5.94	5.93	5.94	5.90	5.95	5.9	6.00
Specific Conductivity (µmhos)	10,615	10,649	10,673	7563	7052	7036	7009
Turbidity/Color	clear	clear	clear	cloudy	clear	clear	clear
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**  
 Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**  
 Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**  
 Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_



**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: 12/2/04

Project Name: Behanna Groundwater Decont  
Project Number: 98360-002-015  
Site Location: San Lorenzo, CA

Well Designation: PIW-A2  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
	-		=		2-inch	4-inch	6-inch	1X =
					0.16	0.64	1.44	3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	1453	1454	1457				
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	22.14	22.27	22.35				
ORP	329	319	320.4				
Dissolved Oxygen	17.67	19.01	18.50				
pH	4.46	5.01	5.29				
Specific Conductivity (µmhos)	12,200	10,300	9,800				
Turbidity/Color	Clear	Clear	Clear				
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**GROUNDWATER WELL - PURGE AND SAMPLE RECORD**

Date: 12/2/04

Project Name: Bohemian Groundwater Decont  
Project Number: 98360-02-015  
Site Location: San Lorenzo, CA

Well Designation: P100-A1  
Field Personnel: Mark Williams / Chris Maxwell

WELL VOLUME CALCULATION								
Total Well Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	Casing Diameter Multiplier (SCHD 40)			Casing Volume Purge Quantity
					2-inch	4-inch	6-inch	
					0.16	0.64	1.44	1X = 3X =

Parameter	Purge Sample 1	Purge Sample 2	Purge Sample 3	Purge Sample 4	Purge Sample 5	Purge Sample 6	Purge Sample 7
Time of Day	14:32	14:35	14:38	14:41	14:43		
Volume Purged							
Purge Rate (gpm)							
Temperature (°C)	21.94	22.04	22.22	22.33	22.12		
ORP	424	392	320	300	294		
Dissolved Oxygen	3.12	3.39	3.32	3.62	3.72		
pH	2.30	2.71	4.03	4.55	4.83		
Specific Conductivity (µmhos)	18,100	16,300	15,200	14,500	14,630		
Turbidity/Color	3.000	2.100	2.400	2.400	2.400		
Odor/Sheen							
Depth to Water During Purge (ft)							
Number of Casing Volumes Removed							
Dewatered?							
Comments:							

**SAMPLE DATA:**

Static Water Level: \_\_\_\_\_ Description of Water Level Measurement Point: \_\_\_\_\_  
 Water Level Determined By: \_\_\_\_\_  
 Purge Method: \_\_\_\_\_  
 Purge Depth: \_\_\_\_\_ Percent Recovery: \_\_\_\_\_ Depth to Water During Sampling: \_\_\_\_\_  
 Sampling Equipment: \_\_\_\_\_  
 Time of Sample Collection: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analytical Method Comments

**PURGE WATER DISPOSAL:**

Total Discharge (gal): \_\_\_\_\_ Disposal Method: \_\_\_\_\_  
 Drum Designation(s)/Volume: \_\_\_\_\_  
 Comments: \_\_\_\_\_

**WELL HEAD CONDITIONS:**

Well Security Device Working as Designed?: YES NO Well Casing Intact?: YES NO  
 Inside of Well Head and Outer Casing Dry?: YES NO  
 Comments: \_\_\_\_\_

**APPENDIX B**

**CHAIN OF CUSTODY RECORD AND ANALYTICAL DATA SHEETS**

**Engineering and Fire Investigations**

July 28, 2004

111 Deerwood Road, Ste 195  
San Ramon, CA 94583

Attn.: Mark Williams

Project#: 48360-00011

Project: Bohannon

Dear Mr. Williams,

Attached is our report for your samples received on 07/16/2004 17:03  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after  
08/30/2004 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions,  
please call me at (925) 484-1919.

You can also contact me via email. My email address is: [asalimpour@stl-inc.com](mailto:asalimpour@stl-inc.com)

Sincerely,



Afsaneh Salimpour  
Project Manager

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: ( ) -

Project: 48360-00011  
Bohannon

Received: 07/16/2004 17:03

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
NITRATE SOLUTION	07/16/2004	Water	1

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: ( ) -

Project: 48360-00011  
Bohannon

Received: 07/16/2004 17:03

Prep(s):	300.0/9056	Test(s):	300.0/9056
Sample ID:	<b>NITRATE SOLUTION</b>	Lab ID:	2004-07-0536 - 1
Sampled:	07/16/2004	Extracted:	7/16/2004 18:00
Matrix:	Water	QC Batch#:	2004/07/16-01.41

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Nitrite	1.3	1.0	mg/L	1.00	07/16/2004 22:19	
Nitrate	1.7	1.0	mg/L	1.00	07/16/2004 22:19	

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: ( ) -

Project: 48360-00011  
Bohannon

Received: 07/16/2004 17:03

**Batch QC Report**

Prep(s): 300.0/9056

Method Blank

MB: 2004/07/16-01.41-001

Water

Test(s): 300.0/9056

QC Batch # 2004/07/16-01.41

Date Extracted: 07/16/2004 06:00

Compound	Conc.	RL	Unit	Analyzed	Flag
Nitrite	ND	1.0	mg/L	07/20/2004 06:31	
Nitrate	ND	1.0	mg/L	07/20/2004 06:31	

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566  
Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

07/23/2004 11:57

Page 3 of 4

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: ( ) -

Project: 48360-00011  
Bohannon

Received: 07/16/2004 17:03

**Batch QC Report**

Prep(s): 300.0/9056

Test(s): 300.0/9056

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/07/16-01.41**

LCS 2004/07/16-01.41-002

Extracted: 07/16/2004

Analyzed: 07/16/2004 06:50

LCSD 2004/07/16-01.41-003

Extracted: 07/16/2004

Analyzed: 07/16/2004 07:09

Compound	Conc. mg/L		Exp. Conc.	Recovery %		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Nitrite	19.2	19.2	20.0	96.0	96.0	0.0	80-120	20		
Nitrate	18.8	18.8	20.0	94.0	94.0	0.0	80-120	20		

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

07/23/2004 11:57



2004 07 0334

**SEVERN**  
**TRENT** **STL**

**STL San Francisco Chain of Custody**  
1220 Quarry Lane • Pleasanton CA 94566-4756  
Phone: (925) 484-1919 • Fax: (925) 484-1096  
Email: [sflogin@stl-inc.com](mailto:sflogin@stl-inc.com)

Reference #: 87885

Date 7/16/04 Page 1 of 1

Report To					Analysis Request															
Attn: <u>Mark Williams</u>					<input type="checkbox"/> TPH EPA - 8015/8021 <input type="checkbox"/> 8260B <input type="checkbox"/> Gas w/ <input type="checkbox"/> BTEX <input type="checkbox"/> MTBE <input type="checkbox"/> Purgeable Aromatics <input type="checkbox"/> BTEX EPA - 8021 <input type="checkbox"/> 8260B <input type="checkbox"/> TEPH EPA 8015M* <input type="checkbox"/> Silica Gel <input type="checkbox"/> Diesel <input type="checkbox"/> Motor Oil <input type="checkbox"/> Other <input type="checkbox"/> Fuel Tests EPA 8260B: <input type="checkbox"/> Gas <input type="checkbox"/> BTEX <input type="checkbox"/> Five Oxygenates <input type="checkbox"/> DCA, EDB <input type="checkbox"/> Ethanol <input type="checkbox"/> Purgeable Halocarbons <input type="checkbox"/> (HVOCs) EPA 8021 by 8260B <input type="checkbox"/> Volatile Organics GC/MS (VOCs) <input type="checkbox"/> EPA 8260B <input type="checkbox"/> 624 <input type="checkbox"/> Semivolatiles GC/MS <input type="checkbox"/> EPA 8270 <input type="checkbox"/> 625 <input type="checkbox"/> Oil and Grease <input type="checkbox"/> Petroleum <input type="checkbox"/> (EPA 1664) <input type="checkbox"/> Total <input type="checkbox"/> Pesticides <input type="checkbox"/> EPA 8081 <input type="checkbox"/> 808 <input type="checkbox"/> PCBs <input type="checkbox"/> EPA 8082 <input type="checkbox"/> 608 <input type="checkbox"/> PNAs by <input type="checkbox"/> 8270 <input type="checkbox"/> 8310 <input type="checkbox"/> CAM17 Metals <input type="checkbox"/> (EPA 601.0/7470/7471) <input type="checkbox"/> Metals: <input type="checkbox"/> Lead <input type="checkbox"/> LUFT <input type="checkbox"/> RCRA <input type="checkbox"/> Other: <input type="checkbox"/> Low Level Metals by EPA 200.8/6020 <input type="checkbox"/> (ICP-MS): <input type="checkbox"/> W.E.T (STLC) <input type="checkbox"/> TCLP <input type="checkbox"/> Hexavalent Chromium <input type="checkbox"/> pH (24h hold time for H <sub>2</sub> O) <input type="checkbox"/> Spec Cond. <input type="checkbox"/> Alkalinity <input type="checkbox"/> TSS <input type="checkbox"/> TDS <input type="checkbox"/> <input type="checkbox"/> Anions: <input type="checkbox"/> Cl <input type="checkbox"/> SO <sub>4</sub> <input type="checkbox"/> NO <sub>3</sub> <input type="checkbox"/> F <input type="checkbox"/> Br <input type="checkbox"/> NO <sub>2</sub> <input type="checkbox"/> PO <sub>4</sub>	Company: <u>EPI Global</u>					Address: <u>111 Deerwood Rd Suite 195</u>					Phone: <u>925457-7381</u> Email:				
Bill To: <u>EPI Global</u>		Sampled By: <u>MSW</u>				TPH EPA - 8015/8021 <input type="checkbox"/> 8260B					Purgeable Aromatics					BTEX EPA - 8021 <input type="checkbox"/> 8260B				
Attn: <u>Mark Williams</u>		Phone:				TEPH EPA 8015M* <input type="checkbox"/> Silica Gel					Diesel <input type="checkbox"/> Motor Oil <input type="checkbox"/> Other					Fuel Tests EPA 8260B: <input type="checkbox"/> Gas <input type="checkbox"/> BTEX				
						Purgeable Halocarbons					(HVOCs) EPA 8021 by 8260B					Volatile Organics GC/MS (VOCs)				
Sample ID	Date	Time	Mat rix	Pres erv.																
<u>Nitric Solution</u>	<u>7/16/04</u>	<u>-</u>	<u>-</u>	<u>-</u>																

Project Info.		Sample Receipt	
Project Name: <u>Bekmann</u>	# of Containers:	Project#: <u>90360-00011</u>	Head Space:
PO#: _____	Temp: <u>25</u>	Credit Card#: _____	Conforms to record:
T A T	<u>5</u> Day	72h	48h
Report: <input type="checkbox"/> Routine <input type="checkbox"/> Level 3 <input type="checkbox"/> Level 4 <input type="checkbox"/> EDD <input type="checkbox"/> State Tank Fund EDF		Special Instructions / Comments:	
See Terms and Conditions on reverse		*STL SF reports 8015M from C <sub>1</sub> -C <sub>2</sub> (industry norm). Default for 8015B is C <sub>1</sub> -C <sub>2</sub>	

1) Relinquished by: [Signature] 5:03 PM 7/16/04  
Signature \_\_\_\_\_ Time \_\_\_\_\_  
Printed Name Mark Williams Date \_\_\_\_\_  
Company EPI Glob

1) Received by: [Signature] 17:03  
Signature \_\_\_\_\_ Time \_\_\_\_\_  
Printed Name James Ford Date 7/16/04  
Company STL-SF

2) Relinquished by: \_\_\_\_\_  
Signature \_\_\_\_\_ Time \_\_\_\_\_  
Printed Name \_\_\_\_\_ Date \_\_\_\_\_  
Company \_\_\_\_\_

2) Received by: \_\_\_\_\_  
Signature \_\_\_\_\_ Time \_\_\_\_\_  
Printed Name \_\_\_\_\_ Date \_\_\_\_\_  
Company \_\_\_\_\_

3) Relinquished by: \_\_\_\_\_  
Signature \_\_\_\_\_ Time \_\_\_\_\_  
Printed Name \_\_\_\_\_ Date \_\_\_\_\_  
Company \_\_\_\_\_

3) Received by: \_\_\_\_\_  
Signature \_\_\_\_\_ Time \_\_\_\_\_  
Printed Name \_\_\_\_\_ Date \_\_\_\_\_  
Company \_\_\_\_\_

STL San Francisco

### Sample Receipt Checklist

Submission #: 2004- 07 - 0536

Checklist completed by: (initials) ASX Date: 07, 18 /04

Courier name:  STL San Francisco  Client \_\_\_\_\_

Custody seals intact on shipping container/samples Yes \_\_\_ No \_\_\_ Not Present /

Chain of custody present? Yes / No \_\_\_

Chain of custody signed when relinquished and received? Yes / No \_\_\_

Chain of custody agrees with sample labels? Yes / No \_\_\_

Samples in proper container/bottle? Yes / No \_\_\_

Sample containers intact? Yes / No \_\_\_

Sufficient sample volume for indicated test? Yes / No \_\_\_

All samples received within holding time? Yes / No \_\_\_

Container/Temp Blank temperature in compliance ( $4^{\circ}C \pm 2$ )? Temp: 25 °C Yes / No \_\_\_

Ice Present Yes / No \_\_\_

Water - VOA vials have zero headspace? No VOA vials submitted / Yes \_\_\_ No \_\_\_

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small - O), M (medium - O) or L (large - O))

Water - pH acceptable upon receipt?  Yes  No

pH adjusted- Preservative used:  HNO<sub>3</sub>  HCl  H<sub>2</sub>SO<sub>4</sub>  NaOH  ZnOAc -Lot #(s) \_\_\_\_\_

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: \_\_\_\_\_  
\_\_\_\_\_

#### Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) \_\_\_\_\_ Date: \_\_\_\_\_/\_\_\_\_\_/04

Client contacted:  Yes  No

Summary of discussion: \_\_\_\_\_  
\_\_\_\_\_

Corrective Action (per PM/Client): \_\_\_\_\_  
\_\_\_\_\_

STL Chicago  
2417 Bond Street  
University Park, IL 60466

Tel: 708 534 5200 Fax: 708 534 5211  
www.stl-inc.com

SEVERN TRENT LABORATORIES  
ANALYTICAL REPORT

JOB NUMBER: 228611

Prepared For:

Severn Trent Laboratories  
1220 Quarry Lane  
Pleasanton, CA 94566-4756

Project: STL San Francisco

Attention: Afsaneh Salimpour

Date: 07/28/2004

Bonnie Stadelmann  
Signature

07/28/04  
Date

Name: Bonnie M. Stadelmann

Title: Project Manager

E-Mail: bstadelmann@stl-inc.com

STL Chicago  
2417 Bond Street  
University Park, IL 60466

PHONE: (708) 534-5200  
FAX: (708) 534-5211

This Report Contains ( 9 ) Pages

STL Chicago is part of Severn Trent Laboratories, Inc.

SAMPLE INFORMATION  
Date: 07/28/2004

Job Number.: 228611  
Customer...: Severn Trent Laboratories  
Attn.....: Afsaneh Salimpour

Project Number.....: 20002032  
Customer Project ID....: 2004-07-0536  
Project Description....: STL San Francisco

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
228611-1	NITRATE SOLUTION	Water	07/16/2004	12:00	07/20/2004	08:40

LABORATORY TEST RESULTS

Job Number: 228611

Date: 07/28/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-07-0536

ATTN: Afsaneh Salimpour

Customer Sample ID: NITRATE SOLUTION  
 Date Sampled.....: 07/16/2004  
 Time Sampled.....: 12:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 228611-1  
 Date Received.....: 07/20/2004  
 Time Received.....: 08:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4), as N	120	10	mg/L	07/21/04	jmk
Calc. TKN-NH3	Nitrogen, Organic Nitrogen, Organic as N	140	0.20	mg/L	07/23/04	mtb
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	260	40	mg/L	07/23/04	mtb

\* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY CHRONICLE

Job Number: 228611

Date: 07/28/2004

CUSTOMER: Severn Trent Laboratories PROJECT: 2004-07-0536 ATTN: Afsarsh Salimpour

Lab ID: 228611-1	Client ID: NITRATE SOLUTION	Date Recvd: 07/20/2004	Sample Date: 07/16/2004				
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	123768	123768		07/21/2004 1605	50
Calc. TKN-NH3	Nitrogen, Organic	1	123955	123955		07/23/2004 1305	
351.3	Nitrogen, Total Kjeldahl	1	123953	123953		07/23/2004 1225	100

QUALITY CONTROL RESULTS

Job Number.: 228611

Report Date.: 07/28/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-07-0936

ATTN: Afsaneh Salimpour

Test Method: 350.2 Batch: 123768 Analyst: jmk  
 Method Description: Nitrogen, Ammonia (Dist./Nessler.) Equipment Code: SPEC1 Test Code: NHS  
 Parameter: Ammonia(NH3+NH4), as N

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	123768-004		mg/L	0.13000	U						07/21/2004	1603
LCS	123768-005	103KSTTK2	mg/L	2.56300		2.50000	0.13000 U	103	%	80-120	07/21/2004	1604

Test Method: 351.3 Batch: 123953 Analyst: mtb  
 Method Description: Nitrogen, Total Kjeldahl Equipment Code: SPEC1 Test Code: TKN  
 Parameter: Nitrogen, Total Kjeldahl as N (TKN)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	123953-004		mg/L	0.18000	U						07/23/2004	1208
LCS	123953-005	103KSTTK2	mg/L	2.97700		2.50000	0.18000 U	119	%	80-120	07/23/2004	1210

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/28/2004

REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Soil, sediment and sludge sample results are reported on a "dry weight" basis except when analyzed for landfill disposal or incineration parameters. All other solid matrix samples are reported on an "as received" basis unless noted differently.
- 3) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 4) The test results for the noted analytical method(s) meet the requirements of NELAP. Lab Cert. ID# 100201
- 5) According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.

Glossary of flags, qualifiers and abbreviations (any number of which may appear in the report)

Inorganic Qualifiers (Q-Column)

- U Analyte was not detected at or above the stated limit.
- < Not detected at or above the reporting limit.
- J Result is less than the RL, but greater than or equal to the method detection limit.
- B Result is less than the MDL/RL, but greater than or equal to the IDL/MDL.
- S Result was determined by the Method of Standard Additions.
- F AFCEE: Result is less than the RL, but greater than or equal to the method detection limit.

Inorganic Flags (Flag Column)

- ICV,CCV,ICB,CCB,ISA,ISB,CRI,CRA,MRL: Instrument related QC exceed the upper or lower control limits.
- \* LCS, LCD, MD: Batch QC exceeds the upper or lower control limits.
- + MSA correlation coefficient is less than 0.995.
- 4 MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
- E SD: Serial dilution exceeds the control limits.
- H MB, EB1, EB2, EB3: Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.
- N MS, MSD: Spike recovery exceeds the upper or lower control limits.
- W AS(GFAA) Post-digestion spike was outside 85-115% control limits.

Organic Qualifiers (Q - Column)

- U Analyte was not detected at or above the stated limit.
- ND Compound not detected.
- J Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
- D Result was qualitatively confirmed, but not quantified.
- C Pesticide identification was confirmed by GC/MS.
- Y The chromatographic response resembles a typical fuel pattern.
- Z The chromatographic response does not resemble a typical fuel pattern.
- E Result exceeded calibration range, secondary dilution required.
- F AFCEE:Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)

Organic Flags (Flags Column)

- B MB: Batch QC is greater than reporting limit.
- \* LCS, LCD, ELC, ELD, CV, MS, MSD, Surrogate: Batch QC exceeds the upper or lower control limits.
- EB1, EB2, EB3, MLE: Batch QC is greater than reporting limit
- A Concentration exceeds the instrument calibration range
- a Concentration is below the method Reporting Limit (RL)
- B Compound was found in the blank and sample.
- D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
- H Alternate peak selection upon analytical review
- J Indicates the presence of an interference, recovery is not calculated.
- M Manually integrated compound.
- P The lower of the two values is reported when the % difference between the results of two GC columns is



QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/28/2004

greater than 25%.

Abbreviations

AS	Post Digestion Spike (GFAA Samples - See Note 1 below)
Batch	Designation given to identify a specific extraction, digestion, preparation set, or analysis set
CAP	Capillary Column CCB Continuing Calibration Blank
CCV	Continuing Calibration Verification
CF	Confirmation analysis of original
C1	Confirmation analysis of A1 or D1
C2	Confirmation analysis of A2 or D2
C3	Confirmation analysis of A3 or D3
CRA	Low Level Standard Check - GFAA; Mercury
CR1	Low Level Standard Check - ICP
CV	Calibration Verification Standard
Dil Fac	Dilution factor - Secondary dilution analysis
D1	Dilution 1
D2	Dilution 2
D3	Dilution 3
DLFac	Detection Limit Factor
DSH	Distilled Standard - High Level
DSL	Distilled Standard - Low Level
DSM	Distilled Standard - Medium Level
EB1	Extraction Blank 1
EB2	Extraction Blank 2
EB3	D1 Blank
ELC	Method Extracted LCS
ELD	Method Extracted LCD
ICAL	Initial calibration
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
ISA	Interference Check Sample A - ICAP
ISB	Interference Check Sample B - ICAP
Job No.	The first six digits of the sample ID which refers to a specific client, project and sample group Lab ID An 8 number unique laboratory identification
LCD	Laboratory Control Standard Duplicate
LCS	Laboratory Control Standard with reagent grade water or a matrix free from the analyte of interest
MB	Method Blank or (PB) Preparation Blank
MD	Method Duplicate
MDL	Method Detection Limit
MLE	Medium Level Extraction Blank
MRL	Method Reporting Limit Standard
MSA	Method of Standard Additions
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not Detected
PREPF	Preparation factor used by the Laboratory's Information Management System (LIMS)
PDS	Post Digestion Spike (ICAP)
RA	Re-analysis of original
A1	Re-analysis of D1
A2	Re-analysis of D2
A3	Re-analysis of D3
RD	Re-extraction of dilution
RE	Re-extraction of original
RC	Re-extraction Confirmation
RL	Reporting Limit
RPD	Relative Percent Difference of duplicate (unrounded) analyses
RRF	Relative Response Factor
RT	Retention Time

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/28/2004

RTW Retention Time Window Sample ID A 9 digit number unique for each sample, the first six digits are referred as the job number

SCB Seeded Control Blank

SD Serial Dilution (Calculated when sample concentration exceeds 50 times the MDL)

UCB Unseeded Control Blank

SSV Second Source Verification Standard

SLCS Solid Laboratory Control Standard(LCS)

PNC pH Calibration Check LCS? pH Laboratory Control Sample

LCDP pH Laboratory Control Sample Duplicate

MDPH pH Sample Duplicate

MDFP Flashpoint Sample Duplicate

LCFP Flashpoint LCS

G1 Gelex Check Standard Range 0-1

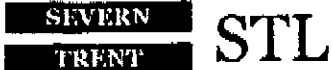
G2 Gelex Check Standard Range 1-10

G3 Gelex Check Standard Range 10-100

G4 Gelex Check Standard Range 100-1000

Note 1: The Post Spike Designation on Batch QC for GFAA is designated with an "S" added to the current abbreviation used. EX. LCS S=LCS Post Spike (GFAA); MSS=MS Post Spike (GFAA)

Note 2: The MD calculates an absolute difference (A) when the sample concentration is less than 5 times the reporting limit. The control limit is represented as +/- the RL.



Chain of Custody

228611  
Date Shipped: 7/19/2004  
2004-07-0536 - 1

From:  
STL San Francisco (CL)  
1220 Quarry Lane  
Pleasanton, CA 94566-4756

To:  
STL Chicago  
2417 Bond Street  
University Park, IL 60466

Project Manager: Afsaneh Salimpour  
Phone: (925) 484-1919 Ext: 107  
Fax: (925) 484-1096  
Email: asalimpour@stl-inc.com

Phone: (708) 534-5200 Ext:  
Fax: (708) 534-5211  
Contact: Bonnie Stadelmann  
Phone: (708) 534-5200 Ext: 154

CL Submission #: 2004-07-0536  
CL PO #:

Project #: 48360-00011  
Project Name: Bohannon

Client Sample				
NITRATE SOLUTION	1	7/16/2004 12:00:00AM	Water	
Subcontract - Ammonia			350.3	5 Day
Subcontract - TON				5 Day
Subcontract - Total Kjeldahl Nitrogen			351.4	5 Day

PLEASE INCLUDE QC WITH FAXED AND HARD-COPY RESULTS

RELINQUISHED BY: 1.

Signature: *[Signature]* Time: 15:00  
 Printed Name: Bryan Thomas Date: 7/19/04  
 Company: STL-SF

RELINQUISHED BY: 2.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

RELINQUISHED BY: 3.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

RECEIVED BY: 1.

Signature: *[Signature]* Time: 0840  
 Printed Name: \_\_\_\_\_ Date: 7/20/04  
 Company: \_\_\_\_\_

RECEIVED BY: 2.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

RECEIVED BY: 3.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

Engineering and Fire Investigations

September 08, 2004

111 Deerwood Road, Ste 195  
San Ramon, CA 94583

Attn.: Mark Williams

Project#: 98360

Project: Bohannon

Dear Mr. Williams,

Attached is our report for your samples received on 08/27/2004 15:09

This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 10/11/2004 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

You can also contact me via email. My email address is: [asalimpour@stl-inc.com](mailto:asalimpour@stl-inc.com)

Sincerely,



Afsaneh Salimpour  
Project Manager

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195

San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
NIW-B1	08/27/2004	Water	7

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

09/08/2004 13:22

Page 1 of 4

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: ( ) -

Project: 98360  
Bohannon

Received: 08/27/2004 15:09

Prep(s): 5030B	Test(s): 8260B
Sample ID: <b>NIW-B1</b>	Lab ID: 2004-08-0727 - 7
Sampled: 08/27/2004	Extracted: 9/8/2004 11:26
Matrix: Water	QC Batch#: 2004/09/08-01.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	110	50	ug/L	1.00	09/08/2004 11:26	
Benzene	6.9	0.50	ug/L	1.00	09/08/2004 11:26	
Toluene	ND	0.50	ug/L	1.00	09/08/2004 11:26	
Ethylbenzene	1.4	0.50	ug/L	1.00	09/08/2004 11:26	
Total xylenes	2.0	1.0	ug/L	1.00	09/08/2004 11:26	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	97.6	72-128	%	1.00	09/08/2004 11:26	
Toluene-d8	96.7	80-113	%	1.00	09/08/2004 11:26	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations  
Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: ( ) -

Project: 98360  
Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

Method Blank

Water

QC Batch # 2004/09/08-01.68

MB: 2004/09/08-01.68-002

Date Extracted: 09/08/2004 07:02

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	09/08/2004 07:02	
Benzene	ND	0.5	ug/L	09/08/2004 07:02	
Toluene	ND	0.5	ug/L	09/08/2004 07:02	
Ethylbenzene	ND	0.5	ug/L	09/08/2004 07:02	
Total xylenes	ND	1.0	ug/L	09/08/2004 07:02	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	100.4	72-128	%	09/08/2004 07:02	
Toluene-d8	106.6	80-113	%	09/08/2004 07:02	

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Project: 98360  
Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/09/08-01.68**

LCS 2004/09/08-01.68-024

Extracted: 09/08/2004

Analyzed: 09/08/2004 06:24

LCSD 2004/09/08-01.68-043

Extracted: 09/08/2004

Analyzed: 09/08/2004 06:43

Compound	Conc. ug/L		Exp. Conc.	Recovery %		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	27.5	24.7	25.0	110.0	98.8	10.7	69-129	20		
Toluene	24.2	24.7	25.0	96.8	98.8	2.0	70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	448	457	500	89.6	91.4		72-128			
Toluene-d8	475	471	500	95.0	94.2		80-113			

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**Fuel Oxygenates by 8260B**

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Project: 98360  
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**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
PIW-A1	08/27/2004	Water	1
PIW-A2	08/27/2004	Water	2
PIW-B1	08/27/2004	Water	3
PIW-B3	08/27/2004	Water	4
NIW-A1	08/27/2004	Water	5
NIW-A2	08/27/2004	Water	6
NIW-B2	08/27/2004	Water	8
POBS-A1	08/27/2004	Water	9
POBS-B1	08/27/2004	Water	10
NOBS-B1	08/27/2004	Water	11
MW-4	08/27/2004	Water	12
MW-3	08/27/2004	Water	13
POBS-B2	08/27/2004	Water	15

**Fuel Oxygenates by 8260B**

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Project: 98360

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---

Prep(s):	5030B	Test(s):	8260B
Sample ID:	PIW-A1	Lab ID:	2004-08-0727 - 1
Sampled:	08/27/2004	Extracted:	9/2/2004 12:13
Matrix:	Water	QC Batch#:	2004/09/02-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	220	50	ug/L	1.00	09/02/2004 12:13	
Benzene	14	0.50	ug/L	1.00	09/02/2004 12:13	
Toluene	1.2	0.50	ug/L	1.00	09/02/2004 12:13	
Ethylbenzene	2.1	0.50	ug/L	1.00	09/02/2004 12:13	
Total xylenes	5.4	1.0	ug/L	1.00	09/02/2004 12:13	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	99.6	72-128	%	1.00	09/02/2004 12:13	
Toluene-d8	103.1	80-113	%	1.00	09/02/2004 12:13	

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

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San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: ( ) -

Project: 98360  
Bohannon

Received: 08/27/2004 15:09

Prep(s): 5030B	Test(s): 8260B
Sample ID: PIW-A2	Lab ID: 2004-08-0727 - 2
Sampled: 08/27/2004	Extracted: 9/2/2004 12:35
Matrix: Water	QC Batch#: 2004/09/02-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	500	50	ug/L	1.00	09/02/2004 12:35	
Benzene	34	0.50	ug/L	1.00	09/02/2004 12:35	
Toluene	2.5	0.50	ug/L	1.00	09/02/2004 12:35	
Ethylbenzene	4.4	0.50	ug/L	1.00	09/02/2004 12:35	
Total xylenes	12	1.0	ug/L	1.00	09/02/2004 12:35	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	78.9	72-128	%	1.00	09/02/2004 12:35	
Toluene-d8	99.6	80-113	%	1.00	09/02/2004 12:35	

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Fuel Oxygenates by 8260B

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Project: 98360  
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Received: 08/27/2004 15:09

Prep(s): 5030B Test(s): 8260B  
Sample ID: PIW-B1 Lab ID: 2004-08-0727 - 3  
Sampled: 08/27/2004 Extracted: 9/2/2004 12:57  
Matrix: Water QC Batch#: 2004/09/02-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	230	50	ug/L	1.00	09/02/2004 12:57	
Benzene	11	0.50	ug/L	1.00	09/02/2004 12:57	
Toluene	0.85	0.50	ug/L	1.00	09/02/2004 12:57	
Ethylbenzene	1.7	0.50	ug/L	1.00	09/02/2004 12:57	
Total xylenes	4.3	1.0	ug/L	1.00	09/02/2004 12:57	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	98.1	72-128	%	1.00	09/02/2004 12:57	
Toluene-d8	104.0	80-113	%	1.00	09/02/2004 12:57	

**Fuel Oxygenates by 8260B**

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Project: 98360  
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Received: 08/27/2004 15:09

Prep(s): 5030B	Test(s): 8260B
Sample ID: PIW-B3	Lab ID: 2004-08-0727 - 4
Sampled: 08/27/2004	Extracted: 9/2/2004 14:04
Matrix: Water	QC Batch#: 2004/09/02-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	230	50	ug/L	1.00	09/02/2004 14:04	
Benzene	20	0.50	ug/L	1.00	09/02/2004 14:04	
Toluene	0.93	0.50	ug/L	1.00	09/02/2004 14:04	
Ethylbenzene	3.3	0.50	ug/L	1.00	09/02/2004 14:04	
Total xylenes	2.9	1.0	ug/L	1.00	09/02/2004 14:04	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	103.3	72-128	%	1.00	09/02/2004 14:04	
Toluene-d8	100.3	80-113	%	1.00	09/02/2004 14:04	

**Fuel Oxygenates by 8260B**

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Received: 08/27/2004 15:09

Prep(s):	5030B	Test(s):	8260B
Sample ID:	NIW-A1	Lab ID:	2004-08-0727 - 5
Sampled:	08/27/2004	Extracted:	9/2/2004 14:26
Matrix:	Water	QC Batch#:	2004/09/02-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	250	50	ug/L	1.00	09/02/2004 14:26	
Benzene	13	0.50	ug/L	1.00	09/02/2004 14:26	
Toluene	1.4	0.50	ug/L	1.00	09/02/2004 14:26	
Ethylbenzene	6.0	0.50	ug/L	1.00	09/02/2004 14:26	
Total xylenes	5.7	1.0	ug/L	1.00	09/02/2004 14:26	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	81.8	72-128	%	1.00	09/02/2004 14:26	
Toluene-d8	101.3	80-113	%	1.00	09/02/2004 14:26	

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Project: 98360

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Received: 08/27/2004 15:09

Prep(s):	5030B	Test(s):	8260B
Sample ID:	NIW-A2	Lab ID:	2004-08-0727 - 6
Sampled:	08/27/2004	Extracted:	9/2/2004 14:48
Matrix:	Water	QC Batch#:	2004/09/02-01.62

Analysis Flag: Irm ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	500	ug/L	10.00	09/02/2004 14:48	
Benzene	6.3	5.0	ug/L	10.00	09/02/2004 14:48	
Toluene	ND	5.0	ug/L	10.00	09/02/2004 14:48	
Ethylbenzene	ND	5.0	ug/L	10.00	09/02/2004 14:48	
Total xylenes	ND	10	ug/L	10.00	09/02/2004 14:48	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	104.5	72-128	%	10.00	09/02/2004 14:48	
Toluene-d8	105.0	80-113	%	10.00	09/02/2004 14:48	

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**Fuel Oxygenates by 8260B**

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Prep(s): 5030B	Test(s): 8260B
Sample ID: NIW-B2	Lab ID: 2004-08-0727 - 8
Sampled: 08/27/2004	Extracted: 9/3/2004 14:32
Matrix: Water	QC Batch#: 2004/09/03-01.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	120	50	ug/L	1.00	09/03/2004 14:32	
Benzene	4.4	0.50	ug/L	1.00	09/03/2004 14:32	
Toluene	ND	0.50	ug/L	1.00	09/03/2004 14:32	
Ethylbenzene	1.1	0.50	ug/L	1.00	09/03/2004 14:32	
Total xylenes	1.6	1.0	ug/L	1.00	09/03/2004 14:32	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	115.1	72-128	%	1.00	09/03/2004 14:32	
Toluene-d8	105.4	80-113	%	1.00	09/03/2004 14:32	



**Fuel Oxygenates by 8260B**

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Project: 98360  
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Prep(s): 5030B Test(s): 8260B  
Sample ID: **POBS-A1** Lab ID: 2004-08-0727 - 9  
Sampled: 08/27/2004 Extracted: 9/3/2004 23:14  
Matrix: Water QC Batch#: 2004/09/03-02.62  
Analysis Flag: o ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	23000	2500	ug/L	50.00	09/03/2004 23:14	
Benzene	2900	25	ug/L	50.00	09/03/2004 23:14	
Toluene	140	25	ug/L	50.00	09/03/2004 23:14	
Ethylbenzene	180	25	ug/L	50.00	09/03/2004 23:14	
Total xylenes	470	50	ug/L	50.00	09/03/2004 23:14	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	108.0	72-128	%	50.00	09/03/2004 23:14	
Toluene-d8	102.6	80-113	%	50.00	09/03/2004 23:14	

**Fuel Oxygenates by 8260B**

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Project: 98360

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Received: 08/27/2004 15:09

Prep(s): 5030B	Test(s): 8260B
Sample ID: <b>POBS-B1</b>	Lab ID: 2004-08-0727 - 10
Sampled: 08/27/2004	Extracted: 9/3/2004 18:57
Matrix: Water	QC Batch#: 2004/09/03-02.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	500	50	ug/L	1.00	09/03/2004 18:57	
Benzene	1.4	0.50	ug/L	1.00	09/03/2004 18:57	
Toluene	ND	0.50	ug/L	1.00	09/03/2004 18:57	
Ethylbenzene	ND	0.50	ug/L	1.00	09/03/2004 18:57	
Total xylenes	ND	1.0	ug/L	1.00	09/03/2004 18:57	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	120.1	72-128	%	1.00	09/03/2004 18:57	
Toluene-d8	105.8	80-113	%	1.00	09/03/2004 18:57	

**Fuel Oxygenates by 8260B**

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Project: 98360  
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Received: 08/27/2004 15:09

Prep(s):	5030B	Test(s):	8260B
Sample ID:	NOBS-B1	Lab ID:	2004-08-0727 - 11
Sampled:	08/27/2004	Extracted:	9/4/2004 09:28
Matrix:	Water	QC Batch#:	2004/09/04-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	180	50	ug/L	1.00	09/04/2004 09:28	
Benzene	5.5	0.50	ug/L	1.00	09/04/2004 09:28	
Toluene	0.53	0.50	ug/L	1.00	09/04/2004 09:28	
Ethylbenzene	0.99	0.50	ug/L	1.00	09/04/2004 09:28	
Total xylenes	1.6	1.0	ug/L	1.00	09/04/2004 09:28	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	99.6	72-128	%	1.00	09/04/2004 09:28	
Toluene-d8	97.9	80-113	%	1.00	09/04/2004 09:28	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

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Project: 98360

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Received: 08/27/2004 15:09

Prep(s):	5030B	Test(s):	8260B
Sample ID:	<b>MW-4</b>	Lab ID:	2004-08-0727 - 12
Sampled:	08/27/2004	Extracted:	9/3/2004 19:31
Matrix:	Water	QC Batch#:	2004/09/03-02.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	460	50	ug/L	1.00	09/03/2004 19:31	
Benzene	19	0.50	ug/L	1.00	09/03/2004 19:31	
Toluene	1.2	0.50	ug/L	1.00	09/03/2004 19:31	
Ethylbenzene	1.1	0.50	ug/L	1.00	09/03/2004 19:31	
Total xylenes	1.5	1.0	ug/L	1.00	09/03/2004 19:31	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	109.4	72-128	%	1.00	09/03/2004 19:31	
Toluene-d8	102.8	80-113	%	1.00	09/03/2004 19:31	

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

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Project: 98360  
Bohannon

Received: 08/27/2004 15:09

Prep(s): 5030B Test(s): 8260B  
Sample ID: MW-3 Lab ID: 2004-08-0727 - 13  
Sampled: 08/27/2004 Extracted: 9/3/2004 19:53  
Matrix: Water QC Batch#: 2004/09/03-02.62  
Analysis Flag: o ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	6900	2500	ug/L	50.00	09/03/2004 19:53	
Benzene	2100	25	ug/L	50.00	09/03/2004 19:53	
Toluene	59	25	ug/L	50.00	09/03/2004 19:53	
Ethylbenzene	220	25	ug/L	50.00	09/03/2004 19:53	
Total xylenes	ND	50	ug/L	50.00	09/03/2004 19:53	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	106.3	72-128	%	50.00	09/03/2004 19:53	
Toluene-d8	100.7	80-113	%	50.00	09/03/2004 19:53	

**Fuel Oxygenates by 8260B**

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Project: 98360  
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Received: 08/27/2004 15:09

Prep(s): 5030B	Test(s): 8260B
Sample ID: POBS-B2	Lab ID: 2004-08-0727 - 15
Sampled: 08/27/2004	Extracted: 9/4/2004 09:06
Matrix: Water	QC Batch#: 2004/09/04-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	240	50	ug/L	1.00	09/04/2004 09:06	
Benzene	36	0.50	ug/L	1.00	09/04/2004 09:06	
Toluene	1.6	0.50	ug/L	1.00	09/04/2004 09:06	
Ethylbenzene	6.7	0.50	ug/L	1.00	09/04/2004 09:06	
Total xylenes	4.2	1.0	ug/L	1.00	09/04/2004 09:06	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	93.6	72-128	%	1.00	09/04/2004 09:06	
Toluene-d8	99.4	80-113	%	1.00	09/04/2004 09:06	

**Fuel Oxygenates by 8260B**

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Project: 98360  
Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

Method Blank

Water

QC Batch # 2004/09/02-01.62

MB: 2004/09/02-01.62-002

Date Extracted: 09/02/2004 11:02

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	09/02/2004 11:02	
Benzene	ND	0.5	ug/L	09/02/2004 11:02	
Toluene	ND	0.5	ug/L	09/02/2004 11:02	
Ethylbenzene	ND	0.5	ug/L	09/02/2004 11:02	
Total xylenes	ND	1.0	ug/L	09/02/2004 11:02	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	102.0	72-128	%	09/02/2004 11:02	
Toluene-d8	102.8	80-113	%	09/02/2004 11:02	

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**Fuel Oxygenates by 8260B**

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Project: 98360  
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Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/09/03-01.64-016

Water

Test(s): 8260B

QC Batch # 2004/09/03-01.64

Date Extracted: 09/03/2004 07:16

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	09/03/2004 07:16	
Benzene	ND	0.5	ug/L	09/03/2004 07:16	
Toluene	ND	0.5	ug/L	09/03/2004 07:16	
Ethylbenzene	ND	0.5	ug/L	09/03/2004 07:16	
Total xylenes	ND	1.0	ug/L	09/03/2004 07:16	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	106.4	72-128	%	09/03/2004 07:16	
Toluene-d8	104.8	80-113	%	09/03/2004 07:16	

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Page 16 of 26



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Project: 98360  
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Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

Method Blank

Water

QC Batch # 2004/09/03-02.62

MB: 2004/09/03-02.62-003

Date Extracted: 09/03/2004 19:03

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	09/03/2004 19:03	
Benzene	ND	0.5	ug/L	09/03/2004 19:03	
Toluene	ND	0.5	ug/L	09/03/2004 19:03	
Ethylbenzene	ND	0.5	ug/L	09/03/2004 19:03	
Total xylenes	ND	1.0	ug/L	09/03/2004 19:03	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	100.8	72-128	%	09/03/2004 19:03	
Toluene-d8	106.2	80-113	%	09/03/2004 19:03	

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09/08/2004 09:56

Page 17 of 26

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195

San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/09/03-02.64-027

Water

Test(s): 8260B

QC Batch # 2004/09/03-02.64

Date Extracted: 09/03/2004 18:27

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	09/03/2004 18:27	
Benzene	ND	0.5	ug/L	09/03/2004 18:27	
Toluene	ND	0.5	ug/L	09/03/2004 18:27	
Ethylbenzene	ND	0.5	ug/L	09/03/2004 18:27	
Total xylenes	ND	1.0	ug/L	09/03/2004 18:27	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	106.4	72-128	%	09/03/2004 18:27	
Toluene-d8	108.4	80-113	%	09/03/2004 18:27	

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: ( ) -

Project: 98360  
Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/09/04-01.62-004

Water

Test(s): 8260B

QC Batch # 2004/09/04-01.62

Date Extracted: 09/04/2004 08:04

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	09/04/2004 08:04	
Gasoline	ND	50	ug/L	09/04/2004 08:04	
Benzene	ND	0.5	ug/L	09/04/2004 08:04	
Toluene	ND	0.5	ug/L	09/04/2004 08:04	
Ethylbenzene	ND	0.5	ug/L	09/04/2004 08:04	
Total xylenes	ND	1.0	ug/L	09/04/2004 08:04	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	98.4	72-128	%	09/04/2004 08:04	
Toluene-d8	109.0	80-113	%	09/04/2004 08:04	

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Page 19 of 26

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195

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Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/09/02-01.62**

LCS 2004/09/02-01.62-043

Extracted: 09/02/2004

Analyzed: 09/02/2004 11:43

LCSD 2004/09/02-01.62-040

Extracted: 09/02/2004

Analyzed: 09/02/2004 10:40

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	25.1	25.3	25.0	100.4	101.2	0.8	69-129	20		
Toluene	26.9	25.6	25.0	107.6	102.4	5.0	70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	448	466	500	89.6	93.2		72-128			
Toluene-d8	549	517	500	109.8	103.4		80-113			

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations  
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Project: 98360  
Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/09/03-01.64**

LCS 2004/09/03-01.64-031

Extracted: 09/03/2004

Analyzed: 09/03/2004 06:31

LCSD 2004/09/03-01.64-053

Extracted: 09/03/2004

Analyzed: 09/03/2004 06:53

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	26.8	25.2	25.0	107.2	100.8	6.2	69-129	20		
Toluene	28.2	26.9	25.0	112.8	107.6	4.7	70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	542	542	500	108.4	108.4		72-128			
Toluene-d8	531	537	500	106.2	107.4		80-113			

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations  
Attn.: Mark Williams

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Project: 98360  
Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/09/03-02.62**

LCS 2004/09/03-02.62-019

Extracted: 09/03/2004

Analyzed: 09/03/2004 18:19

LCSD 2004/09/03-02.62-041

Extracted: 09/03/2004

Analyzed: 09/03/2004 18:41

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	22.7	23.3	25.0	90.8	93.2	2.6	69-129	20		
Toluene	23.8	25.3	25.0	95.2	101.2	6.1	70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	457	451	500	91.4	90.2		72-128			
Toluene-d8	516	536	500	103.2	107.2		80-113			

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations  
Attn.: Mark Williams

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Phone: (925) 457-7384 Fax: ( ) -

Project: 98360  
Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/09/03-02.64**

LCS 2004/09/03-02.64-042

Extracted: 09/03/2004

Analyzed: 09/03/2004 17:42

LCSD 2004/09/03-02.64-004

Extracted: 09/03/2004

Analyzed: 09/03/2004 18:04

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	23.1	24.3	25.0	92.4	97.2	5.1	69-129	20		
Toluene	25.5	25.1	25.0	102.0	100.4	1.6	70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	441	515	500	88.2	103.0		72-128			
Toluene-d8	528	529	500	105.6	105.8		80-113			

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

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San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/09/04-01.62**

LCS 2004/09/04-01.62-020

Extracted: 09/04/2004

Analyzed: 09/04/2004 07:20

LCSD 2004/09/04-01.62-042

Extracted: 09/04/2004

Analyzed: 09/04/2004 07:42

Compound	Conc. ug/L		Exp. Conc.	Recovery %		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	23.3	24.6	25.0	93.2	98.4	5.4	69-129	20		
Toluene	25.2	26.4	25.0	100.8	105.6	4.7	70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	502	443	500	100.4	88.6		72-128			
Toluene-d8	520	549	500	104.0	109.8		80-113			

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

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Project: 98360  
Bohannon

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**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/09/02-01.62**

P1W-B1 >> MS

Lab ID: 2004-08-0727 - 003

MS: 2004/09/02-01.62-019

Extracted: 09/02/2004

Analyzed: 09/02/2004 13:19

Dilution: 1.00

MSD: 2004/09/02-01.62-042

Extracted: 09/02/2004

Analyzed: 09/02/2004 13:42

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level ug/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	34.9	35.2	10.7	25.0	96.8	98.0	1.2	69-129	20		
Toluene	27.2	26.6	0.846	25.0	105.4	103.0	2.3	70-130	20		
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	478	501		500	95.6	100.2		72-128			
Toluene-d8	531	510		500	106.1	102.1		80-113			

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195

San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

---

**Legend and Notes**

---

**Analysis Flag**

ln

Reporting limits raised due to high level of non-target analyte materials.

o

Reporting limits were raised due to high level of analyte present in the sample.

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Page 26 of 26

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195

San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
NIW-A1	08/27/2004	Water	5
NIW-A2	08/27/2004	Water	6
NIW-B1	08/27/2004	Water	7
NIW-B2	08/27/2004	Water	8
NOBS-B1	08/27/2004	Water	11
MW-4	08/27/2004	Water	12

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Page 1 of 10

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195

San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

Prep(s): 300.0/9056

Test(s): 300.0/9056

Sample ID: NIW-A1

Lab ID: 2004-08-0727 - 5

Sampled: 08/27/2004

Extracted: 8/27/2004 19:00

Matrix: Water

QC Batch#: 2004/08/27-03.41

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Nitrite	ND	1.0	mg/L	1.00	08/28/2004 12:11	
Nitrate	ND	1.0	mg/L	1.00	08/28/2004 12:11	

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195

San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

Prep(s): 300.0/9056

Test(s): 300.0/9056

Sample ID: **NIW-A2**

Lab ID: 2004-08-0727 - 6

Sampled: 08/27/2004

Extracted: 8/27/2004 19:00

Matrix: Water

QC Batch#: 2004/08/27-03.41

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Nitrite	ND	1.0	mg/L	1.00	08/28/2004 12:29	
Nitrate	ND	1.0	mg/L	1.00	08/28/2004 12:29	

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

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San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

---

Prep(s): 300.0/9056	Test(s): 300.0/9056
Sample ID: <b>NIW-B1</b>	Lab ID: 2004-08-0727 - 7
Sampled: 08/27/2004	Extracted: 8/27/2004 19:00
Matrix: Water	QC Batch#: 2004/08/27-03.41

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Nitrite	ND	1.0	mg/L	1.00	08/28/2004 13:05	
Nitrate	30	1.0	mg/L	1.00	08/28/2004 13:05	

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195

San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

Prep(s): 300.0/9056	Test(s): 300.0/9056
Sample ID: <b>NIW-B2</b>	Lab ID: 2004-08-0727 - 8
Sampled: 08/27/2004	Extracted: 8/27/2004 19:00
Matrix: Water	QC Batch#: 2004/08/27-03.41

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Nitrite	1.0	1.0	mg/L	1.00	08/28/2004 13:23	
Nitrate	39	1.0	mg/L	1.00	08/28/2004 13:23	

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

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San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

---

Prep(s): 300.0/9056	Test(s): 300.0/9056
Sample ID: <b>NOBS-B1</b>	Lab ID: 2004-08-0727 - 11
Sampled: 08/27/2004	Extracted: 8/27/2004 19:00
Matrix: Water	QC Batch#: 2004/08/27-03.41

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Nitrite	ND	1.0	mg/L	1.00	08/28/2004 12:47	
Nitrate	38	1.0	mg/L	1.00	08/28/2004 12:47	

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**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

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San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

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Received: 08/27/2004 15:09

Prep(s): 300.0/9056	Test(s): 300.0/9056
Sample ID: <b>MW-4</b>	Lab ID: 2004-08-0727 - 12
Sampled: 08/27/2004	Extracted: 8/27/2004 19:00
Matrix: Water	QC Batch#: 2004/08/27-03.41

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Nitrite	ND	1.0	mg/L	1.00	08/28/2004 11:17	
Nitrate	ND	1.0	mg/L	1.00	08/28/2004 11:17	

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

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San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 300.0/9056

Test(s): 300.0/9056

Method Blank

Water

QC Batch # 2004/08/27-03.41

MB: 2004/08/27-03.41-001

Date Extracted: 08/27/2004 19:00

Compound	Conc.	RL	Unit	Analyzed	Flag
Nitrite	ND	1.0	mg/L	08/28/2004 10:41	
Nitrate	ND	1.0	mg/L	08/28/2004 10:41	

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: ( ) -

Project: 98360  
Bohannon

Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 300.0/9056

Test(s): 300.0/9056

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/08/27-03.41**

LCS 2004/08/27-03.41-002

Extracted: 08/27/2004

Analyzed: 08/28/2004 10:41

LCSD 2004/08/27-03.41-003

Extracted: 08/27/2004

Analyzed: 08/28/2004 10:59

Compound	Conc. mg/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Nitrite	19.4	19.2	20.0	97.0	96.0	1.0	80-120	20		
Nitrate	19.6	19.5	20.0	98.0	97.5	0.5	80-120	20		

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**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

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San Ramon, CA 94583

Phone: (925) 457-7384 Fax: ( ) -

Project: 98360

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Received: 08/27/2004 15:09

**Batch QC Report**

Prep(s): 300.0/9056

Test(s): 300.0/9056

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/08/27-03.41**

MW-4 >> MS

Lab ID: 2004-08-0727 - 012

MS: 2004/08/27-03.41-004

Extracted: 08/27/2004

Analyzed: 08/28/2004 11:35

Dilution: 1.00

MSD: 2004/08/27-03.41-005

Extracted: 08/27/2004

Analyzed: 08/28/2004 11:53

Dilution: 1.00

Compound	Conc. mg/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample		mg/L	MS	MSD	RPD	Rec.	RPD	MS
Nitrite	19.2	19.3	ND	20.0	96.0	96.5	0.5	80-120	20		
Nitrate	19.5	19.5	ND	20.0	97.5	97.5	0.0	80-120	20		

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STL Chicago  
2417 Bond Street  
University Park, IL 60466

Tel: 708 534 5200 Fax: 708 534 5211  
www.stl-inc.com

SEVERN TRENT LABORATORIES  
ANALYTICAL REPORT

JOB NUMBER: 229783

Prepared For:

Severn Trent Laboratories  
1220 Quarry Lane  
Pleasanton, CA 94566-4756

Project: STL San Francisco

Attention: Afsaneh Salimpour

Date: 09/07/2004

*Bonnie Stadelmann*

Signature

09/07/04

Date

Name: Bonnie M. Stadelmann

Title: Project Manager

E-Mail: bstadelmann@stl-inc.com

STL Chicago  
2417 Bond Street  
University Park, IL 60466

PHONE: (708) 534-5200  
FAX: (708) 534-5211

This Report Contains ( 14 ) Pages

STL Chicago is part of Severn Trent Laboratories, Inc.

**SAMPLE INFORMATION**  
Date: 09/07/2004

Job Number.: 229783      Project Number.....: 20002032  
 Customer...: Severn Trent Laboratories      Customer Project ID....: 2004-08-0727  
 Attn.....: Afsaneh Salimpour      Project Description....: STL San Francisco

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
229783-1	N1W-A1	Water	08/27/2004	12:00	08/31/2004	08:40
229783-2	N1W-A2	Water	08/27/2004	12:00	08/31/2004	08:40
229783-3	N1W-B1	Water	08/27/2004	12:00	08/31/2004	08:40
229783-4	N1W-B2	Water	08/27/2004	12:00	08/31/2004	08:40
229783-5	ND85-B1	Water	08/27/2004	12:00	08/31/2004	08:40
229783-6	MW-4	Water	08/27/2004	12:00	08/31/2004	08:40

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS

Job Number: 229783

Date: 09/07/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-08-0727

ATTN: Afsaneh Sefinpour

Customer Sample ID: N1W-A1  
 Date Sampled.....: 08/27/2004  
 Time Sampled.....: 12:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 229783-1  
 Date Received.....: 08/31/2004  
 Time Received.....: 08:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4),as N	79	10	mg/L	09/03/04	mtb
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	180	20	mg/L	09/03/04	mtb

\* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS

Job Number: 229783

Date: 09/07/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-08-0727

ATTN: Afsaneh Salimpour

Customer Sample ID: N1W-A2  
 Date Sampled,.....: 08/27/2004  
 Time Sampled.....: 12:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 229783-2  
 Date Received.....: 08/31/2004  
 Time Received.....: 08:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4),as N	70	10	mg/L	09/03/04	mtb
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	180	20	mg/L	09/03/04	mtb

\* In Description = Dry Wgt.



STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS

Job Number: 229783

Date: 09/07/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-08-0727

ATTN: Afsaneh Salimour

Customer Sample ID: M1W-B1  
 Date Sampled.....: 08/27/2004  
 Time Sampled.....: 12:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 229783-3  
 Date Received.....: 08/31/2004  
 Time Received.....: 08:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4), as N	3.2	0.20	mg/L	09/03/04	mtb
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	4.8	0.80	mg/L	09/03/04	mtb

\* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS

Job Number: 229783

Date: 09/07/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-08-0727

ATTN: Afsaneh Salimpour

Customer Sample ID: N1W-B2  
 Date Sampled.....: 08/27/2004  
 Time Sampled.....: 12:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 229783-4  
 Date Received.....: 08/31/2004  
 Time Received.....: 08:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4), as N	5.7	0.40	mg/L	09/03/04	mtb
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	10	2.0	mg/L	09/03/04	mtb

\* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS						
Job Number: 229783			Date: 09/07/2004			
CUSTOMER: Severn Trent Laboratories		PROJECT: 2004-08-0727		ATTN: Afsaneh Salimpour		
Customer Sample ID: NDBS-B1 Date Sampled.....: 08/27/2004 Time Sampled.....: 12:00 Sample Matrix.....: Water			Laboratory Sample ID: 229783-5 Date Received.....: 08/31/2004 Time Received.....: 08:40			
TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4),as N	<0.20	0.20	mg/L	09/03/04	mtb
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	1.7	0.40	mg/L	09/03/04	mtb

\* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

**LABORATORY TEST RESULTS**

Job Number: 229783 Date: 09/07/2004

CUSTOMER: Severn Trent Laboratories PROJECT: 2004-08-0727 ATTN: Afsaneh Salimpour

Customer Sample ID: MW-4  
 Date Sampled.....: 08/27/2004  
 Time Sampled.....: 12:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 229783-6  
 Date Received.....: 08/31/2004  
 Time Received.....: 08:40

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4), as N	<0.20	0.20	mg/L	09/03/04	mtb
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	<0.40	0.40	mg/L	09/03/04	mtb

\* In Description = Dry Wgt.

## LABORATORY CHRONICLE

Job Number: 229783

Date: 09/07/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-08-0727

ATTN: Afsaneh Salimpour

Lab ID	Client ID	Date Recvd	Sample Date	Method	Description	Run#	Batch#	Prep Bt	#(S)	Date/Time Analyzed	Dilution
229783-1	N1W-A1	08/31/2004	08/27/2004	350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	128088	128088		09/03/2004 1403	50
				351.3	Nitrogen, Total Kjeldahl	1	128091	128091		09/03/2004 1446	50
				PKG INO (WC)	PKG INO (WET CHEMISTRY)	1					
229783-2	N1W-A2	08/31/2004	08/27/2004	350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	128088	128088		09/03/2004 1403	50
				351.3	Nitrogen, Total Kjeldahl	1	128091	128091		09/03/2004 1449	50
229783-3	N1W-B1	08/31/2004	08/27/2004	350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	128088	128088		09/03/2004 1404	
				351.3	Nitrogen, Total Kjeldahl	1	128091	128091		09/03/2004 1451	2
229783-4	N1W-B2	08/31/2004	08/27/2004	350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	128088	128088		09/03/2004 1405	2
				351.3	Nitrogen, Total Kjeldahl	1	128091	128091		09/03/2004 1452	5
229783-5	N0BS-B1	08/31/2004	08/27/2004	350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	128088	128088		09/03/2004 1406	
				351.3	Nitrogen, Total Kjeldahl	1	128091	128091		09/03/2004 1453	
229783-6	MW-4	08/31/2004	08/27/2004	350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	128088	128088		09/03/2004 1407	
				351.3	Nitrogen, Total Kjeldahl	1	128091	128091		09/03/2004 1454	

QUALITY CONTROL RESULTS

Job Number.: 229783

Report Date.: 09/07/2004

CUSTOMER: Severn Trent Laboratories PROJECT: 2004-06-0727 ATTN: Afshaneh Salimpour

Test Method: 350.2 Batch: 128088 Analyst: mtb  
 Method Description: Nitrogen, Ammonia (Dist./Nessler.) Equipment Code: SPEC1 Test Code: NH3  
 Parameter: Ammonia(NH3+NH4) as N

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	128088-004		mg/L	0.13000	U						09/03/2004	1353
LCS	128088-005	104HSTTK2	mg/L	2.33900		2.50000		94	X	80-120	09/03/2004	1353

Test Method: 351.3 Batch: 128091 Analyst: mtb  
 Method Description: Nitrogen, Total Kjeldahl Equipment Code: SPEC1 Test Code: TKN  
 Parameter: Nitrogen, Total Kjeldahl as N (TKN)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	128091-004		mg/L	0.18000	U						09/03/2004	1444
LCS	128091-005	104HSTTK2	mg/L	2.74800		2.50000	0.18000	U 110	X	80-120	09/03/2004	1445
MS	229783-1	104HSTTK2	mg/L	184.15000		125.00000	183.90000	10	4	X 75-125	09/03/2004	1447
MSD	229783-1	104HSTTK2	mg/L	170.05000	184.15000	125.00000	183.90000	-554	4	X 75-125	09/03/2004	1448
								-207.4		R 20		

## QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 09/07/2004

## REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Soil, sediment and sludge sample results are reported on a "dry weight" basis except when analyzed for landfill disposal or incineration parameters. All other solid matrix samples are reported on an "as received" basis unless noted differently.
- 3) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 4) The test results for the noted analytical method(s) meet the requirements of NELAC. Lab Cert. ID# 100201
- 5) According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.

Glossary of flags, qualifiers and abbreviations (any number of which may appear in the report)

## Inorganic Qualifiers (Q-Column)

- U Analyte was not detected at or above the stated limit.
- < Not detected at or above the reporting limit.
- J Result is less than the RL, but greater than or equal to the method detection limit.
- B Result is less than the CRDL/RL, but greater than or equal to the IDL/MDL.
- S Result was determined by the Method of Standard Additions.
- F AFCEE: Result is less than the RL, but greater than or equal to the method detection limit.

## Inorganic Flags (Flag Column)

- ICV,CCV,ICB,CCB,ISA,ISB,CRI,CRA,MRL: Instrument related QC exceed the upper or lower control limits.
- \* LCS, LCD, MD: Batch QC exceeds the upper or lower control limits.
- + MSA correlation coefficient is less than 0.995.
- 4 MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
- E SD: Serial dilution exceeds the control limits.
- H MB, EB1, EB2, EB3: Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.
- N MS, MSD: Spike recovery exceeds the upper or lower control limits.
- W AS(GFAA) Post-digestion spike was outside 85-115% control limits.

## Organic Qualifiers (Q - Column)

- U Analyte was not detected at or above the stated limit.
- ND Compound not detected.
- J Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
- Q Result was qualitatively confirmed, but not quantified.
- C Pesticide identification was confirmed by GC/MS.
- Y The chromatographic response resembles a typical fuel pattern.
- Z The chromatographic response does not resemble a typical fuel pattern.
- E Result exceeded calibration range, secondary dilution required.
- F AFCEE: Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)

## Organic Flags (Flags Column)

- B MB: Batch QC is greater than reporting limit.
- \* LCS, LCD, ELC, ELD, CV, MS, MSD, Surrogate: Batch QC exceeds the upper or lower control limits.
- EB1, EB2, EB3, MLE: Batch QC is greater than reporting Limit
- A Concentration exceeds the instrument calibration range
- a Concentration is below the method Reporting Limit (RL)
- B Compound was found in the blank and sample.
- D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
- H Alternate peak selection upon analytical review
- I Indicates the presence of an interference, recovery is not calculated.
- M Manually integrated compound.
- P The lower of the two values is reported when the % difference between the results of two GC columns is

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 09/07/2004

greater than 25%.

Abbreviations

AS	Post Digestion Spike (GFAA Samples - See Note 1 below)
Batch	Designation given to identify a specific extraction, digestion, preparation set, or analysis set
CAP	Capillary Column CCB Continuing Calibration Blank
CCV	Continuing Calibration Verification
CF	Confirmation analysis of original
C1	Confirmation analysis of A1 or D1
C2	Confirmation analysis of A2 or D2
C3	Confirmation analysis of A3 or D3
CRA	Low Level Standard Check - GFAA; Mercury
CR1	Low Level Standard Check - ICP
CV	Calibration Verification Standard
Dil Fac	Dilution Factor - Secondary dilution analysis
D1	Dilution 1
D2	Dilution 2
D3	Dilution 3
DLFac	Detection Limit Factor
DSH	Distilled Standard - High Level
DSL	Distilled Standard - Low Level
DSM	Distilled Standard - Medium Level
EB1	Extraction Blank 1
EB2	Extraction Blank 2
EB3	D1 Blank
ELC	Method Extracted LCS
ELD	Method Extracted LCD
ICAL	Initial calibration
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
ISA	Interference Check Sample A - ICAP
ISB	Interference Check Sample B - ICAP
Job No.	The first six digits of the sample ID which refers to a specific client, project and sample group Lab ID An 8 number unique Laboratory identification
LCD	Laboratory Control Standard Duplicate
LCS	Laboratory Control Standard with reagent grade water or a matrix free from the analyte of interest
MB	Method Blank or (PB) Preparation Blank
MD	Method Duplicate
MDL	Method Detection Limit
MLE	Medium Level Extraction Blank
MRL	Method Reporting Limit Standard
MSA	Method of Standard Additions
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not Detected
PREPF	Preparation factor used by the Laboratory's Information Management System (LIMS)
PDS	Post Digestion Spike (ICAP)
RA	Re-analysis of original
A1	Re-analysis of D1
A2	Re-analysis of D2
A3	Re-analysis of D3
RD	Re-extraction of dilution
RE	Re-extraction of original
RC	Re-extraction Confirmation
RL	Reporting Limit
RPD	Relative Percent Difference of duplicate (unrounded) analyses
RRF	Relative Response Factor
RT	Retention Time



QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 09/07/2004

RTW Retention Time Window Sample ID A 9 digit number unique for each sample, the first six digits are referred as the job number  
SCB Seeded Control Blank  
SD Serial Dilution (Calculated when sample concentration exceeds 50 times the MDL)  
UCB Unseeded Control Blank  
SSV Second Source Verification Standard  
SLCS Solid Laboratory Control Standard(LCS)  
PHC pH Calibration Check LCSP pH Laboratory Control Sample  
LCDP pH Laboratory Control Sample Duplicate  
MDPH pH Sample Duplicate  
MDFP Flashpoint Sample Duplicate  
LCFP Flashpoint LCS  
G1 Gelex Check Standard Range 0-1  
G2 Gelex Check Standard Range 1-10  
G3 Gelex Check Standard Range 10-100  
G4 Gelex Check Standard Range 100-1000

Note 1: The Post Spike Designation on Batch QC for GFAA is designated with an "S" added to the current abbreviation used. EX. LCS S=LCS Post Spike (GFAA); MSS=MS Post Spike (GFAA)

Note 2: The MD calculates an absolute difference (A) when the sample concentration is less than 5 times the reporting limit. The control limit is represented as +/- the RL.

229783

Date Shipped: 8/27/2004

2004-08-0727 - 1



STL

Chain of Custody

From: STL San Francisco (CL)
1220 Quarry Lane
Pleasanton, CA 94566-4756

To: STL Chicago
2417 Bond Street
University Park, IL 60466

Project Manager: Afsaneh Salimpour
Phone: (925) 484-1919
Fax: (925) 484-1096
Email: asalimpour@stl-inc.com

Phone: (708) 534-5200
Fax: (708) 534-5211
Contact: Bonnie Stadelmann
Phone: (708) 534-5200 Ext: 154

CL Submission #: 2004-08-0727
CL PO #:

Project #: 98360
Project Name: Bohannon

Table with columns: Client Sample ID, Sample No., Date/Time, Matrix, and Results (Subcontract - Ammonia, Subcontract - Total Kjeldahl Nitrogen). Rows include N1W-A1, N1W-A2, N1W-B1, N1W-B2, NDBS-B1, and MW-4.

RELINQUISHED BY: 1. Signature: [Signature], Time: 1320, Printed Name: Safford, Date: 8/30/04, Company: STL-SF

RELINQUISHED BY: 2. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_

RELINQUISHED BY: 3. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_

RECEIVED BY: 1. Signature: [Signature], Time: 0840, Printed Name: [Signature], Date: 8/31/04, Company: \_\_\_\_\_

RECEIVED BY: 2. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_

RECEIVED BY: 3. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_

229783

Date Shipped: 8/27/2004

2004-08-0727 - 1



STL

Chain of Custody

From: STL San Francisco (CL)  
1220 Quarry Lane  
Pleasanton, CA 94566-4756

To: STL Chicago  
2417 Bond Street  
University Park, IL 60466

Project Manager: Afsaneh Salimpour  
Phone: (925) 484-1919 Ext: 107  
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Email: asalimpour@stl-inc.com

Phone: (708) 534-5200 Ext:  
Fax: (708) 534-6211  
Contact: Bonnie Stadelmann  
Phone: (708) 534-5200 Ext: 154

CL Submission #: 2004-08-0727

Project #: 98360

CL PO #:

Project Name: Bohannon

Client Sample ID

PLEASE INCLUDE QC WITH FAXED AND HARD-COPY RESULTS

RELINQUISHED BY:	1.
Signature <i>[Signature]</i>	Time 1320
Printed Name <i>W. Hoffeld</i>	Date 8/30/04
Company STL-SF	

RELINQUISHED BY:	2.
Signature	Time
Printed Name	Date
Company	

RELINQUISHED BY:	3.
Signature	Time
Printed Name	Date
Company	

RECEIVED BY:	1.
Signature <i>[Signature]</i>	Time 0840
Printed Name	Date 8/31/04
Company	

RECEIVED BY:	2.
Signature	Time
Printed Name	Date
Company	

RECEIVED BY:	3.
Signature	Time
Printed Name	Date
Company	

2004.08.0727

Report To Analysis Request

Attn: Mark Williams  
Company: EFC-Global  
Address: 111 Deermoot Suite 195  
Phone: \_\_\_\_\_ Email: \_\_\_\_\_  
Bill To: EFC-Global Sampled By: Mark Williams  
Attn: Mark Willen Phone: \_\_\_\_\_

Sample ID	Date	Time	Mat rix	Pres erv.	TPH EPA - <input type="checkbox"/> 8015/8021 <input checked="" type="checkbox"/> 8260B <input checked="" type="checkbox"/> Gas w/ <input checked="" type="checkbox"/> BTEX <input type="checkbox"/> MTBE	Purgeable Aromatics BTEX EPA - <input type="checkbox"/> 8021 <input type="checkbox"/> 8260B	TEPH EPA 8015M <input type="checkbox"/> Silica Gel <input type="checkbox"/> Diesel <input type="checkbox"/> Motor Oil <input type="checkbox"/> Other _____	Fuel Tests EPA 8260B: <input type="checkbox"/> Gas <input type="checkbox"/> BTEX <input type="checkbox"/> Five Oxygenates <input type="checkbox"/> DCA, EDB <input type="checkbox"/> Ethanol	Purgeable Halocarbons (HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) <input type="checkbox"/> EPA 8260B <input type="checkbox"/> 624	Semivolatiles GC/MS <input type="checkbox"/> EPA 8270 <input type="checkbox"/> 625	Oil and Grease <input type="checkbox"/> Petroleum (EPA 1664) <input type="checkbox"/> Total	Pesticides <input type="checkbox"/> EPA 8081 <input type="checkbox"/> 808 PCBs <input type="checkbox"/> EPA 8082 <input type="checkbox"/> 808	PNAs by <input type="checkbox"/> 8270 <input type="checkbox"/> 8310	CAM17 Metals (EPA 60107/4707/471)	Metals: <input type="checkbox"/> Lead <input type="checkbox"/> LUFT <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____	Low Level Metals by EPA 200.8/6020 (ICP-MS): _____	<input type="checkbox"/> W.E.T (STLC) <input type="checkbox"/> TCLP	Hexavalent Chromium pH (24h hold time for H <sub>2</sub> O)	Spec Cond. <input type="checkbox"/> Alkalinity TSS <input type="checkbox"/> TDS <input type="checkbox"/>	Anions: <input type="checkbox"/> Cl <input type="checkbox"/> SO <sub>4</sub> <input checked="" type="checkbox"/> NO <sub>3</sub> <input type="checkbox"/> F <input type="checkbox"/> Br <input checked="" type="checkbox"/> NO <sub>2</sub> <input type="checkbox"/> PO <sub>4</sub>	<u>NH<sub>4</sub> Ammonia</u>	<u>Total Nitrogen Kjeld</u>	Number of Containers <u>4</u>			
PIW-A1	8/27/04				X																					4	
PIW-A2	8/27/04				X																					4	
PIW-B1					X																					4	
PIW-B3					X																					4	
NIW-A1					X																					4	
NIW-A2					X																						4
NIW-B1					X																						4
NIW-B2					X																						4
POBS-A1					X																						4
POBS-B1					X																						4

<b>Project Info.</b>		<b>Sample Receipt</b>		1) Relinquished by:		2) Relinquished by:		3) Relinquished by:	
Project Name: <u>Behannon</u>		# of Containers: _____		Signature: <u>Mark Williams</u> Time: <u>8/27/04</u>		Signature: _____ Time: _____		Signature: _____ Time: _____	
Project#: <u>90360</u>		Head Space: _____		Printed Name: <u>EFC-Global</u> Date: _____		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
PO#: _____		Temp: <u>27</u>		Company: _____		Company: _____		Company: _____	
Credit Card#: _____		Conforms to record: _____		1) Received by:		2) Received by:		3) Received by:	
T A T <input checked="" type="checkbox"/> 5 Day <input type="checkbox"/> 72h <input type="checkbox"/> 48h <input type="checkbox"/> 24h <input type="checkbox"/> Other: _____		Report: <input type="checkbox"/> Routine <input type="checkbox"/> Level 3 <input type="checkbox"/> Level 4 <input type="checkbox"/> EDD <input type="checkbox"/> State Tank Fund EDF <input type="checkbox"/> Global ID _____		Signature: <u>J. McFford</u> Time: <u>1509</u> <u>8/27/04</u>		Signature: _____ Time: _____		Signature: _____ Time: _____	
Special Instructions / Comments:				Printed Name: _____ Date: _____		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____	
				Company: <u>STC-SF</u>		Company: _____		Company: _____	

**2004-08-0727**

**Report To** **Analysis Request**

Attn: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Email: \_\_\_\_\_  
 Bill To: \_\_\_\_\_ Sampled By: \_\_\_\_\_  
 Attn: \_\_\_\_\_ Phone: \_\_\_\_\_

Sample ID	Date	Time	Mat rix	Pres erv.	TPH EPA - <input type="checkbox"/> 8015/8021 <input checked="" type="checkbox"/> 8260B <input checked="" type="checkbox"/> Gas w/ <input type="checkbox"/> BTEX <input type="checkbox"/> MTBE	Purgeable Aromatics BTEX EPA - <input type="checkbox"/> 8021 <input type="checkbox"/> 8260B	TEPH EPA 8015M <input type="checkbox"/> Silica Gel <input type="checkbox"/> Diesel <input type="checkbox"/> Motor Oil <input type="checkbox"/> Other _____	Fuel Tests EPA 8260B: <input type="checkbox"/> Gas <input type="checkbox"/> BTEX <input type="checkbox"/> Five Oxygenates <input type="checkbox"/> DCA, EDB <input type="checkbox"/> Ethanol	Purgeable Halocarbons (HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) <input type="checkbox"/> EPA 8260B <input type="checkbox"/> 624	Semivolatiles GC/MS <input type="checkbox"/> EPA 8270 <input type="checkbox"/> 625	Oil and Grease <input type="checkbox"/> Petroleum (EPA 1664 ) <input type="checkbox"/> Total	Pesticides <input type="checkbox"/> EPA 8081 <input type="checkbox"/> 608 PCBs <input type="checkbox"/> EPA 8082 <input type="checkbox"/> 608	PNAs by <input type="checkbox"/> 8270 <input type="checkbox"/> 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: <input type="checkbox"/> Lead <input type="checkbox"/> LUFT <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____	Low Level Metals by EPA 200.86020 (ICP-MS): _____	<input type="checkbox"/> W.E.T (STLC) <input type="checkbox"/> TCLP	Hexavalent Chromium pH (24h hold time for H <sub>2</sub> O)	Spec Cond. <input type="checkbox"/> Alkalinity TSS <input type="checkbox"/> TDS <input type="checkbox"/>	Anions: <input type="checkbox"/> Cl <input type="checkbox"/> SO <sub>4</sub> <input type="checkbox"/> NO <sub>3</sub> <input type="checkbox"/> F <input type="checkbox"/> Br <input type="checkbox"/> NO <sub>2</sub> <input type="checkbox"/> PO <sub>4</sub>	<u>NH<sub>4</sub> Ammonia</u> <u>total Nitrogen Kjeldahl</u>	Number of Containers	
NDRS-81	8/27/04				X																X	X	X	6
MW-4					X																X	X	X	4
MW-3					X																			4
MW-1					X																			4
POBS-B2					X																			4

**Project Info.** Project Name: \_\_\_\_\_ # of Containers: \_\_\_\_\_  
 Project#: \_\_\_\_\_ Head Space: \_\_\_\_\_  
 PO#: \_\_\_\_\_ Temp: 27  
 Credit Card#: \_\_\_\_\_ Conforms to record: \_\_\_\_\_

1) Relinquished by: [Signature] 3/01  
 Signature \_\_\_\_\_ Time \_\_\_\_\_  
 Printed Name Mark Williams Date 8/27/04  
 Company EFF-8/27/04

2) Relinquished by: \_\_\_\_\_  
 Signature \_\_\_\_\_ Time \_\_\_\_\_  
 Printed Name \_\_\_\_\_ Date \_\_\_\_\_  
 Company \_\_\_\_\_

3) Relinquished by: \_\_\_\_\_  
 Signature \_\_\_\_\_ Time \_\_\_\_\_  
 Printed Name \_\_\_\_\_ Date \_\_\_\_\_  
 Company \_\_\_\_\_

T  
A 5 Day 72h 48h 24h Other: \_\_\_\_\_  
T  
Report:  Routine  Level 3  Level 4  EDD  State Tank Fund EDF  
 Special Instructions / Comments:  Global ID \_\_\_\_\_

1) Received by: [Signature] 1509  
 Signature \_\_\_\_\_ Time \_\_\_\_\_  
 Printed Name Stefford Date 8/27/04  
 Company STL-SF

2) Received by: \_\_\_\_\_  
 Signature \_\_\_\_\_ Time \_\_\_\_\_  
 Printed Name \_\_\_\_\_ Date \_\_\_\_\_  
 Company \_\_\_\_\_

3) Received by: \_\_\_\_\_  
 Signature \_\_\_\_\_ Time \_\_\_\_\_  
 Printed Name \_\_\_\_\_ Date \_\_\_\_\_  
 Company \_\_\_\_\_

STL San Francisco

Sample Receipt Checklist

1/2

Submission #: 2004-08-0727

Checklist completed by: (initials) [Signature] Date: 8/27/04

Courier name:  STL San Francisco  Client \_\_\_\_\_

Custody seals intact on shipping container/samples Yes \_\_\_ No \_\_\_ Not Present

Chain of custody present? Yes  No \_\_\_

Chain of custody signed when relinquished and received? Yes  No \_\_\_

Chain of custody agrees with sample labels? Yes \_\_\_ No

Samples in proper container/bottle? Yes  No \_\_\_

Sample containers intact? Yes  No \_\_\_

Sufficient sample volume for indicated test? Yes  No \_\_\_

All samples received within holding time? Yes  No \_\_\_

Container/Temp Blank temperature in compliance (4°C ± 2)? Temp: 27°C Yes  No \_\_\_

Potential reason for > 6°C - Ice melted  Ice in bags  Not enough ice  Not enough blue ice  Samples in boxes

Sampled < 4hr. ago?  Ice not required (e.g. air or bulk sample)  Ice Present Yes  No \_\_\_

Water - VOA vials have zero headspace? No VOA vials submitted \_\_\_ Yes \_\_\_ No

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small ~ O), M (medium ~ O) or L (large ~ O))

Water - pH acceptable upon receipt?  Yes  No

pH adjusted- Preservative used:  HNO<sub>3</sub>  HCl  H<sub>2</sub>SO<sub>4</sub>  NaOH  ZnOAc -Lot #(s) \_\_\_\_\_

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: 1) ID DISC. COC ID: NDBS-B1-<sup>SAMPLE</sup>YS-LABEL ID: NOBS-B-<sup>LABSED USING COC ID</sup>  
↓ : POBS-B2 ↓ : POBS-2B- ↓

2) DID NOT RECEIVE 40ML VIALS FOR MW-1

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) \_\_\_\_\_ Date: \_\_\_/\_\_\_/04 Client contacted:  Yes  No

Summary of discussion: NDBS-B1 should be read as NOBS-B1  
Not sampled for MW-1

Corrective Action (per PM/Client):  
\_\_\_\_\_  
\_\_\_\_\_

2004-08-0727 - CHECKLIST <sup>2/2</sup>

# AIR BUBBLES

---

<u>ID</u>	<u>QTY</u> / <u>DESC</u>
PIW-A1	1 VIAL w/TINY AIR BUBBLE 1 " w/ SMALL

---

PIW-A2 2 / SMALL

---

↓ -B1 2 / SMALL

---

↓ -B3 1 / SMALL  
2 / MEDIUM

---

NIW-A1 - 3 / SMALL & 1 / TINY

↓ -A2 - 1 / LARGE & 1 / TINY

↓ -B1 - 3 / SMALL & 1 / MEDIUM

↓ -B2 - 1 / MED. & 1 / TINY

---

POBS-A1 1 / LG, 2 SMALL ~~1 / TINY~~ 8/27

↓ -B1 1 / MED.

---

~~NDBS-B1 2 / SMALL & 1 / MED~~

MW4 - 1 / SMALL & 1 / MED.

MW3 - 3 / SMALL & 1 / MED.

POBS-B2 - 3 SMALL

Engineering and Fire Investigations

November 03, 2004

111 Deerwood Road, Ste 195  
San Ramon, CA 94583

Attn.: Mark Williams  
Site: San Lorenzo, CA

Dear Mr. Williams,

Attached is our report for your samples received on 10/22/2004 17:16

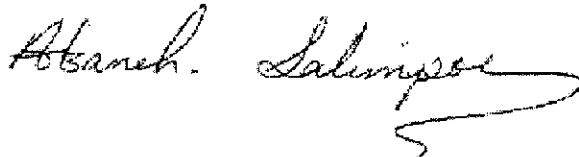
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 12/06/2004 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

You can also contact me via email. My email address is: [asalimpour@stl-inc.com](mailto:asalimpour@stl-inc.com)

Sincerely,



Afsaneh Salimpour  
Project Manager



**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195

San Ramon, CA 94583

Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
PRODUCT	10/22/2004 16:30	Water	1

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

11/03/2004 10:24

Page 1 of 6

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

Prep(s): 300.0/9056	Test(s): 300.0/9056
Sample ID: <b>PRODUCT</b>	Lab ID: 2004-10-0728 - 1
Sampled: 10/22/2004 16:30	Extracted: 10/23/2004 10:14
Matrix: Water	QC Batch#: 2004/10/23-01.41

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Nitrite	ND	100	mg/L	100.00	10/25/2004 20:36	L4
Nitrate	ND	1.0	mg/L	1.00	10/23/2004 10:14	

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations  
Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 300.0/9056

**Method Blank**

MB: 2004/10/23-01.41-001

**Water**

Test(s): 300.0/9056

**QC Batch # 2004/10/23-01.41**

Date Extracted: 10/23/2004 21:22

Compound	Conc.	RL	Unit	Analyzed	Flag
Nitrite	ND	1.0	mg/L	10/23/2004 09:22	
Nitrate	ND	1.0	mg/L	10/23/2004 09:22	

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

11/03/2004 10:24

Page 3 of 6

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 300.0/9056

Test(s): 300.0/9056

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/10/23-01.41**

LCS 2004/10/23-01.41-002

Extracted: 10/23/2004

Analyzed: 10/23/2004 21:39

LCSD 2004/10/23-01.41-003

Extracted: 10/23/2004

Analyzed: 10/23/2004 21:57

Compound	Conc. mg/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Nitrite	19.4	19.5	20.0	97.0	97.5	0.5	80-120	20		
Nitrate	19.7	19.7	20.0	98.5	98.5	0.0	80-120	20		

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

11/03/2004 10:24

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 300.0/9056

Test(s): 300.0/9056

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/10/23-01.41**

MS/MSD

Lab ID: 2004-10-0472 - 001

MS: 2004/10/23-01.41-004

Extracted: 10/24/2004

Analyzed: 10/24/2004 01:10

Dilution: 1.00

MSD: 2004/10/23-01.41-005

Extracted: 10/25/2004

Analyzed: 10/25/2004 00:52

Dilution: 1.00

Compound	Conc. mg/L			Spk.Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample		mg/L	MS	MSD	RPD	Rec.	RPD	MS
Nitrite	21.1	21.2	ND	20.0	105.5	106.0	0.0	80-120	20		
Nitrate	19.7	20.0	ND	20.0	98.5	100.0	0.0	80-120	20		

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

11/03/2004 10:24

Page 5 of 6

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

---

**Legend and Notes**

---

**Result Flag**

L4

Reporting limits were raised due to matrix interference.

STL Chicago  
2417 Bond Street  
University Park, IL 60466

Tel: 708 534 5200 Fax: 708 534 5211  
www.stl-inc.com

SEVERN TRENT LABORATORIES  
ANALYTICAL REPORT

JOB NUMBER: 231373

Prepared For:

Severn Trent Laboratories  
1220 Quarry Lane  
Pleasanton, CA 94566 4756

Project: STL San Francisco

Attention: Afsaneh Salimpour

Date: 11/01/2004

  
Signature

11/01/04  
Date

Name: Bonnie M. Stadelmann  
Title: Project Manager  
E-Mail: bstadelmann@stl-inc.com

STL Chicago  
2417 Bond Street  
University Park, IL 60466  
PHONE: (708) 534-5200  
FAX: (708) 534-5211

This Report Contains ( 8 ) Pages

STL Chicago is part of Severn Trent Laboratories, Inc.

SAMPLE INFORMATION  
Date: 11/01/2004

Job Number.: 231373  
Customer...: Severn Trent Laboratories  
Attn.....: Afsaneh Salimpour

Project Number.....: 20002032  
Customer Project ID....: 2004-10-0728  
Project Description....: STL San Francisco

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
231373-1	PRODUCT	Water	10/22/2004	16:30	10/26/2004	09:00



STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS						
Job Number: 231373					Date: 11/01/2004	
CUSTOMER: Severn Trent Laboratories		PROJECT: 2004-10-D728		ATTN: Afsaneh Salimpour		
Customer Sample ID: PRODUCT Date Sampled.....: 10/22/2004 Time Sampled.....: 16:30 Sample Matrix.....: Water				Laboratory Sample ID: 231373-1 Date Received.....: 10/26/2004 Time Received.....: 09:00		
TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4), as N	220	20	mg/L	10/30/04	mtb
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	520	80	mg/L	10/29/04	mtb

\* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY CHRONICLE

Job Number: 231373

Date: 11/01/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-10-0728

ATTN: Afsaneh Salimpour

Lab ID: 231373-1	Client ID: PRODUCT	Date Recvd: 10/26/2004	Sample Date: 10/22/2004				
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	132718	132718		10/30/2004 1046	100
351.3	Nitrogen, Total Kjeldahl	1	132625	132625		10/29/2004 0858	200
PKG IND (WC)	PKG IND (WET CHEMISTRY)	1					

QUALITY CONTROL RESULTS

Job Number.: 231373

Report Date.: 11/01/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-10-072B

ATTN: Afaanah Salimpour

Test Method: 350.2 Batch: 132718 Analyst: mtb  
 Method Description: Nitrogen, Ammonia (Dist./Messler.) Equipment Code: SPEC1 Test Code: NH3  
 Parameter: Ammoniac(NH3+NH4), as N

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	132718-004		mg/L	0.13000 U							10/30/2004	1023
LCS	132718-005	104HSTTK2	mg/L	2.40000		2.50000	0.13000 U	96	%	80-120	10/30/2004	1024
EB3	132718-028		mg/L	0.13000 U							10/30/2004	1045

Test Method: 351.3 Batch: 132625 Analyst: mtb  
 Method Description: Nitrogen, Total Kjeldahl Equipment Code: SPEC1 Test Code: TKN  
 Parameter: Nitrogen, Total Kjeldahl, as N (TKN)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	132625-004		mg/L	0.18000 U							10/29/2004	0833
LCS	132625-005	104HSTTK2	mg/L	2.52600		2.50000	0.18000 U	101	%	80-120	10/29/2004	0835

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 11/01/2004

REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Soil, sediment and sludge sample results are reported on a "dry weight" basis except when analyzed for landfill disposal or incineration parameters. All other solid matrix samples are reported on an "as received" basis unless noted differently.
- 3) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 4) The test results for the noted analytical method(s) meet the requirements of NELAC Lab Cert. ID# 100201
- 5) According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.

Glossary of flags, qualifiers and abbreviations (any number of which may appear in the report)

Inorganic Qualifiers (Q-Column)

- U Analyte was not detected at or above the stated limit.
- < Not detected at or above the reporting limit.
- J Result is less than the RL, but greater than or equal to the method detection limit.
- B Result is less than the CRDL/RL, but greater than or equal to the IDL/MDL.
- S Result was determined by the Method of Standard Additions.
- F AFCEE: Result is less than the RL, but greater than or equal to the method detection limit.

Inorganic Flags (Flag Column)

- ICV,CCV,ICB,CCB,ISA,ISB,CRI,CRA,MRL: Instrument related QC exceed the upper or lower control limits.
- \* LCS, LCD, MD: Batch QC exceeds the upper or lower control limits.
- + MSA correlation coefficient is less than 0.995.
- 4 MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
- E SD: Serial dilution exceeds the control limits.
- H MB, EB1, EB2, EB3: Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.
- N MS, MSD: Spike recovery exceeds the upper or lower control limits.
- W AS(GFAA) Post-digestion spike was outside 85-115% control limits.

Organic Qualifiers (Q - Column)

- U Analyte was not detected at or above the stated limit.
- ND Compound not detected.
- J Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
- Q Result was qualitatively confirmed, but not quantified.
- C Pesticide identification was confirmed by GC/MS.
- Y The chromatographic response resembles a typical fuel pattern.
- Z The chromatographic response does not resemble a typical fuel pattern.
- E Result exceeded calibration range, secondary dilution required.
- F AFCEE:Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)

Organic Flags (Flags Column)

- B MB: Batch QC is greater than reporting limit.
- \* LCS, LCD, ELC, ELD, CV, MS, MSD, Surrogate: Batch QC exceeds the upper or lower control limits.
- EB1, EB2, EB3, MLE: Batch QC is greater than reporting limit
- A Concentration exceeds the instrument calibration range
- a Concentration is below the method Reporting Limit (RL)
- B Compound was found in the blank and sample.
- D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
- H Alternate peak selection upon analytical review
- I Indicates the presence of an interference, recovery is not calculated.
- M Manually integrated compound.
- P The lower of the two values is reported when the % difference between the results of two GC columns is

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 11/01/2004

greater than 25%.

Abbreviations

AS	Post Digestion Spike (GFAA Samples - See Note 1 below)
Batch	Designation given to identify a specific extraction, digestion, preparation set, or analysis set
CAP	Capillary Column CCB Continuing Calibration Blank
CCV	Continuing Calibration Verification
CF	Confirmation analysis of original
C1	Confirmation analysis of A1 or D1
C2	Confirmation analysis of A2 or D2
C3	Confirmation analysis of A3 or D3
CRA	Low Level Standard Check - GFAA; Mercury
CRI	Low Level Standard Check - ICP
CV	Calibration Verification Standard
Dil Fac	Dilution Factor - Secondary dilution analysis
D1	Dilution 1
D2	Dilution 2
D3	Dilution 3
DLFac	Detection Limit Factor
DSH	Distilled Standard - High Level
DSL	Distilled Standard - Low Level
DSM	Distilled Standard - Medium Level
EB1	Extraction Blank 1
EB2	Extraction Blank 2
EB3	DI Blank
ELC	Method Extracted LCS
ELD	Method Extracted LCD
ICAL	Initial calibration
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
ISA	Interference Check Sample A - ICAP
ISB	Interference Check Sample B - ICAP
Job No.	The first six digits of the sample ID which refers to a specific client, project and sample group Lab ID An 8 number unique laboratory identification
LCD	Laboratory Control Standard Duplicate
LCS	Laboratory Control Standard with reagent grade water or a matrix free from the analyte of interest
NB	Method Blank or (PB) Preparation Blank
MD	Method Duplicate
MDL	Method Detection Limit
MLE	Medium Level Extraction Blank
MRL	Method Reporting Limit Standard
MSA	Method of Standard Additions
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not Detected
PREPF	Preparation factor used by the Laboratory's Information Management System (LIMS)
PDS	Post Digestion Spike (ICAP)
RA	Re-analysis of original
A1	Re-analysis of D1
A2	Re-analysis of D2
A3	Re-analysis of D3
RD	Re-extraction of dilution
RE	Re-extraction of original
RC	Re-extraction Confirmation
RL	Reporting Limit
RPD	Relative Percent Difference of duplicate (unrounded) analyses
RRF	Relative Response Factor
RT	Retention Time

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 11/01/2004

RTW Retention Time Window Sample ID A 9 digit number unique for each sample, the first six digits are referred as the job number  
SCB Seeded Control Blank  
SD Serial Dilution (Calculated when sample concentration exceeds 50 times the MDL)  
UCB Unseeded Control Blank  
SSV Second Source Verification Standard  
SLCS Solid Laboratory Control Standard(LCS)  
PHC pH Calibration Check LCSP pH Laboratory Control Sample  
LCDP pH Laboratory Control Sample Duplicate  
MDPH pH Sample Duplicate  
MDFP Flashpoint Sample Duplicate  
LCFP Flashpoint LCS  
G1 Gelex Check Standard Range 0-1  
G2 Gelex Check Standard Range 1-10  
G3 Gelex Check Standard Range 10-100  
G4 Gelex Check Standard Range 100-1000

Note 1: The Post Spike Designation on Batch QC for GFAA is designated with an "S" added to the current abbreviation used. EX. LCS S=LCS Post Spike (GFAA); MSS=MS Post Spike (GFAA)

Note 2: The MD calculates an absolute difference (A) when the sample concentration is less than 5 times the reporting limit. The control limit is represented as +/- the RL.

231373

Date Shipped: 10/22/2004

2004-10-0728 - 1

SFERN  
TRENT

STL

Chain of Custody

From:  
STL San Francisco (CL)  
1220 Quarry Lane  
Pleasanton, CA 94566-4756

To:  
STL Chicago  
2417 Bond Street  
University Park, IL 60486

Project Manager: Afsaneh Salimpour  
Phone: (925) 484-1919 Ext: 107  
Fax: (925) 484-1096  
Email: asalimpour@stl-inc.com

Phone: (708) 534-5200 Ext:  
Fax: (708) 534-5211  
Contact: Bonnie Stadelmann  
Phone: (708) 534-5200 Ext: 154

CL Submission #: 2004-10-0728  
CL PO #:

Project #:  
Project Name:

Client Sample ID	Analysis	Product	Quantity	Date	Time	Result	Unit
		PRODUCT	1	10/22/2004	4:30:00PM	Water	
		Subcontract - Ammonia				350.3	5 Day
		Subcontract - Total Kjeldahl Nitrogen				351.4	5 Day

PLEASE INCLUDE QC WITH FAXED AND HARD-COPY RESULTS

RELINQUISHED BY: 1.

Signature: *[Signature]* Time: 15:15

Printed Name: Bryan Thomas Date: 10/25/04

Company: STL-SF

RELINQUISHED BY: 2.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_

RELINQUISHED BY: 3.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_

RECEIVED BY: 1.

Signature: *[Signature]* Time: 0900

Printed Name: \_\_\_\_\_ Date: 10/26/04

Company: \_\_\_\_\_

RECEIVED BY: 2.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_

RECEIVED BY: 3.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_



STP CHROMA Lab - Pleasanton  
**TORRENT LABORATORY, INC.** 2004-10-0728  
**CHAIN OF CUSTODY**

483 Sinclair Frontage Road, Milpitas, CA 95035  
 Phone: 408.263.5258 • FAX: 408.268.8293  
 www.torrentlab.com • email: analysis@torrentlab.com

95002  
 LAB WORK ORDER NO

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

Company Name: Engineering & Fire Investigation Location of Sampling: San Lorenzo, CA  
 Address: 111 Deerwood Rd Suite 195 Purpose:  
 City: San Ramon State: CA Zip Code: 94583 Special Instructions / Comments:  
 Telephone: 925 457-7384 FAX: 925 820-9580  
 REPORT TO: Mark Williams SAMPLER: Mark Williams P.O. #: 98360 Bohannon EMAIL:

TURNAROUND TIME:

- 10 Working Days  3 Working Days  2 - 8 Hours  
 7 Working Days  2 Working Days  Other  
 5 Working Days  24 Hours Standard

SAMPLE TYPE:

- Storm Water  Other  
 Waste Water  
 Ground Water  
 Soil

REPORT FORMAT:

- QC Level II  
 EDF  
 Excel / EDD

ANALYSIS REQUESTED

NO3 / NO2  
Ammonia  
kel / cel / nitrate

CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	ANALYSIS REQUESTED								TORRENT'S SAMPLE I.D.	
1. <u>Product</u>	<u>10/22/04 4:50</u>	<u>Water</u>	<u>4</u>	<u>pl</u>										
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														

TORRENT LAB

1 Relinquished By: [Signature] Date: 10/22/04 Time: 5:16 PM Received By: [Signature] Date: 10/22/04 Time: 17:16  
 2 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Were Samples Received in Good Condition?  Yes  NO Samples on Ice?  Yes  NO Method of Shipment \_\_\_\_\_ Sample seals intact?  Yes  NO

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made. Page \_\_\_\_\_ of \_\_\_\_\_





STL San Francisco

Sample Receipt Checklist

Submission #: 2004-10 - 0728

Checklist completed by: (initials) AN Date: 10, 22/04

Courier name:  STL San Francisco  Client

Custody seals intact on shipping container/samples Yes \_\_\_ No \_\_\_ Not Present

Chain of custody present? Yes  No \_\_\_

Chain of custody signed when relinquished and received? Yes  No \_\_\_

Chain of custody agrees with sample labels? Yes  No \_\_\_

Samples in proper container/bottle? Yes  No \_\_\_

Sample containers intact? Yes  No \_\_\_

Sufficient sample volume for indicated test? Yes  No \_\_\_

All samples received within holding time? Yes  No \_\_\_

Container/Temp-Blank temperature in compliance (4°C ± 2)? Temp: 22°C Yes  No \_\_\_

Potential reason for > 6°C - Ice melted  Ice in bags  Not enough ice  Not enough blue ice  Samples in boxes

Sampled < 4hr. ago  Ice not required (e.g. air or bulk sample)  Ice Present: Yes \_\_\_ No

Water - VOA vials have zero headspace? No VOA vials submitted  Yes \_\_\_ No \_\_\_

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small ~O), M (medium - O) or L (large ~O))

Water - pH acceptable upon receipt?  Yes  No

pH adjusted - Preservative used:  HNO<sub>3</sub>  HCl  H<sub>2</sub>SO<sub>4</sub>  NaOH  ZnOAc - Lot #(s) T19040 / M0016

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments:

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/04 Client contacted:  Yes  No

Summary of discussion:

Corrective Action (per PM/Client):

Engineering and Fire Investigations

October 15, 2004

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Attn.: Mark Williams  
Project#: 98360-000.05  
Project: Bohannon

Dear Mr. Williams,

Attached is our report for your samples received on 10/06/2004 09:23  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after  
11/20/2004 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions,  
please call me at (925) 484-1919.

You can also contact me via email. My email address is: [asalimpour@stl-inc.com](mailto:asalimpour@stl-inc.com)

Sincerely,



Afsaneh Salimpour  
Project Manager

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195

San Ramon, CA 94583

Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05

Bohannon

Received: 10/06/2004 09:23

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
MW-2	10/05/2004	Water	1
MW-3	10/05/2004	Water	2
MW-4	10/05/2004	Water	3
P1W-A1	10/05/2004	Water	4
POBS-A1	10/05/2004	Water	5
N1W-A1	10/05/2004	Water	6

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

10/14/2004 10:10

Page 1 of 15

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

Prep(s):	5030	Test(s):	8015M
	5030		8021B
Sample ID:	MW-2	Lab ID:	2004-10-0150 - 1
Sampled:	10/05/2004	Extracted:	10/8/2004 17:18
Matrix:	Water	QC Batch#:	2004/10/08-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	2000	250	ug/L	5.00	10/08/2004 17:18	
Benzene	120	2.5	ug/L	5.00	10/08/2004 17:18	
Toluene	5.5	2.5	ug/L	5.00	10/08/2004 17:18	
Ethyl benzene	ND	2.5	ug/L	5.00	10/08/2004 17:18	
Xylene(s)	8.3	2.5	ug/L	5.00	10/08/2004 17:18	
<b>Surrogate(s)</b>						
Trifluorotoluene	107.6	58-124	%	5.00	10/08/2004 17:18	
4-Bromofluorobenzene-FID	87.3	50-150	%	5.00	10/08/2004 17:18	

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Page 2 of 15

Gas/BTEX by 8015M/8021

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

Prep(s):	5030	Test(s):	8015M
	5030		8021B
Sample ID:	MW-3	Lab ID:	2004-10-0150 - 2
Sampled:	10/05/2004	Extracted:	10/7/2004 21:24
Matrix:	Water	QC Batch#:	2004/10/07-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	9800	2500	ug/L	50.00	10/07/2004 21:24	
Benzene	2500	25	ug/L	50.00	10/07/2004 21:24	
Toluene	52	25	ug/L	50.00	10/07/2004 21:24	
Ethyl benzene	160	25	ug/L	50.00	10/07/2004 21:24	
Xylene(s)	38	25	ug/L	50.00	10/07/2004 21:24	
<b>Surrogate(s)</b>						
Trifluorotoluene	95.7	58-124	%	50.00	10/07/2004 21:24	
4-Bromofluorobenzene-FID	85.5	50-150	%	50.00	10/07/2004 21:24	

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Page 3 of 15

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

Prep(s): 5030	Test(s): 8015M
5030	8021B
Sample ID: MW-4	Lab ID: 2004-10-0150 - 3
Sampled: 10/05/2004	Extracted: 10/8/2004 17:51
Matrix: Water	QC Batch#: 2004/10/08-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	460	100	ug/L	2.00	10/08/2004 17:51	
Benzene	19	1.0	ug/L	2.00	10/08/2004 17:51	
Toluene	ND	1.0	ug/L	2.00	10/08/2004 17:51	
Ethyl benzene	ND	1.0	ug/L	2.00	10/08/2004 17:51	
Xylene(s)	ND	1.0	ug/L	2.00	10/08/2004 17:51	
<b>Surrogate(s)</b>						
Trifluorotoluene	100.0	58-124	%	2.00	10/08/2004 17:51	
4-Bromofluorobenzene-FID	88.6	50-150	%	2.00	10/08/2004 17:51	

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

 111 Deerwood Road, Ste 195  
 San Ramon, CA 94583  
 Phone: (925) 457-7384 Fax: (925) 820-9587

 Project: 98360-000.05  
 Bohannon

Received: 10/06/2004 09:23

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	<b>P1W-A1</b>	Lab ID:	2004-10-0150 - 4
Sampled:	10/05/2004	Extracted:	10/7/2004 22:29
Matrix:	Water	QC Batch#:	2004/10/07-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	10/07/2004 22:29	
Benzene	ND	0.50	ug/L	1.00	10/07/2004 22:29	
Toluene	ND	0.50	ug/L	1.00	10/07/2004 22:29	
Ethyl benzene	ND	0.50	ug/L	1.00	10/07/2004 22:29	
Xylene(s)	ND	0.50	ug/L	1.00	10/07/2004 22:29	
<i>Surrogate(s)</i>						
Trifluorotoluene	91.3	58-124	%	1.00	10/07/2004 22:29	
4-Bromofluorobenzene-FID	86.6	50-150	%	1.00	10/07/2004 22:29	

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Page 5 of 15

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

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 San Ramon, CA 94583  
 Phone: (925) 457-7384 Fax: (925) 820-9587

 Project: 98360-000.05  
 Bohannon

Received: 10/06/2004 09:23

Prep(s): 5030	Test(s): 8015M
5030	8021B
Sample ID: <b>POBS-A1</b>	Lab ID: 2004-10-0150 - 5
Sampled: 10/05/2004	Extracted: 10/7/2004 23:02
Matrix: Water	QC Batch#: 2004/10/07-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	13000	2500	ug/L	50.00	10/07/2004 23:02	
Benzene	2400	25	ug/L	50.00	10/07/2004 23:02	
Toluene	83	25	ug/L	50.00	10/07/2004 23:02	
Ethyl benzene	130	25	ug/L	50.00	10/07/2004 23:02	
Xylene(s)	94	25	ug/L	50.00	10/07/2004 23:02	
<b>Surrogate(s)</b>						
Trifluorotoluene	95.8	58-124	%	50.00	10/07/2004 23:02	
4-Bromofluorobenzene-FID	84.7	50-150	%	50.00	10/07/2004 23:02	

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**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

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San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

Prep(s): 5030	Test(s): 8015M
5030	8021B
Sample ID: <b>N1W-A1</b>	Lab ID: 2004-10-0150 - 6
Sampled: 10/05/2004	Extracted: 10/8/2004 18:23
Matrix: Water	QC Batch#: 2004/10/08-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	1700	500	ug/L	10.00	10/08/2004 18:23	
Benzene	150	5.0	ug/L	10.00	10/08/2004 18:23	
Toluene	ND	5.0	ug/L	10.00	10/08/2004 18:23	
Ethyl benzene	24	5.0	ug/L	10.00	10/08/2004 18:23	
Xylene(s)	12	5.0	ug/L	10.00	10/08/2004 18:23	
<b>Surrogate(s)</b>						
Trifluorotoluene	108.6	58-124	%	10.00	10/08/2004 18:23	
4-Bromofluorobenzene-FID	91.3	50-150	%	10.00	10/08/2004 18:23	

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Page 7 of 15

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

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San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

**Batch QC Report**

Prep(s): 5030  
5030

Test(s): 8015M  
8021B

Method Blank

Water

QC Batch # 2004/10/07-01.05

MB: 2004/10/07-01.05-001

Date Extracted: 10/07/2004 07:03

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/07/2004 07:03	
Benzene	ND	0.5	ug/L	10/07/2004 07:03	
Toluene	ND	0.5	ug/L	10/07/2004 07:03	
Ethyl benzene	ND	0.5	ug/L	10/07/2004 07:03	
Xylene(s)	ND	0.5	ug/L	10/07/2004 07:03	
<b>Surrogates(s)</b>					
Trifluorotoluene	112.4	58-124	%	10/07/2004 07:03	
4-Bromofluorobenzene-FID	106.4	50-150	%	10/07/2004 07:03	

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

**Batch QC Report**

Prep(s): 5030  
5030

Test(s): 8015M  
8021B

**Method Blank**

**Water**

**QC Batch # 2004/10/08-01.05**

MB: 2004/10/08-01.05-003

Date Extracted: 10/08/2004 08:00

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	10/08/2004 08:00	
Benzene	ND	0.5	ug/L	10/08/2004 08:00	
Toluene	ND	0.5	ug/L	10/08/2004 08:00	
Ethyl benzene	ND	0.5	ug/L	10/08/2004 08:00	
Xylene(s)	ND	0.5	ug/L	10/08/2004 08:00	
<b>Surrogates(s)</b>					
Trifluorotoluene	113.0	58-124	%	10/08/2004 08:00	
4-Bromofluorobenzene-FID	103.0	50-150	%	10/08/2004 08:00	

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

**Batch QC Report**

Prep(s): 5030

Test(s): 8021B

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/10/07-01.05**

LCS 2004/10/07-01.05-002

Extracted: 10/07/2004

Analyzed: 10/07/2004 07:36

LCSD 2004/10/07-01.05-003

Extracted: 10/07/2004

Analyzed: 10/07/2004 08:08

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	45.3	47.7	50.0	90.6	95.4	5.2	77-123	20		
Toluene	45.3	47.1	50.0	90.6	94.2	3.9	78-122	20		
Ethyl benzene	44.2	45.6	50.0	88.4	91.2	3.1	70-130	20		
Xylene(s)	133	137	150	88.7	91.3	2.9	75-125	20		
<b>Surrogates(s)</b>										
Trifluorotoluene	545	561	500	109.0	112.2		58-124			

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Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

10/14/2004 10:10

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations  
Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

**Batch QC Report**

Prep(s): 5030

Test(s): 8015M

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/10/07-01.05**

LCS 2004/10/07-01.05-004

Extracted: 10/07/2004

Analyzed: 10/07/2004 08:41

LCSD 2004/10/07-01.05-005

Extracted: 10/07/2004

Analyzed: 10/07/2004 09:13

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Gasoline	248	265	250	99.2	106.0	6.6	75-125	20		
<b>Surrogates(s)</b>										
4-Bromofluorobenzene-FID	509	510	500	101.8	102.0		50-150			

Severn Trent Laboratories, Inc.

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10/14/2004 10:10

Page 11 of 15

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

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Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

**Batch QC Report**

Prep(s): 5030

Test(s): 8021B

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/10/08-01.05**

LCS 2004/10/08-01.05-004

Extracted: 10/08/2004

Analyzed: 10/08/2004 08:32

LCSD 2004/10/08-01.05-005

Extracted: 10/08/2004

Analyzed: 10/08/2004 09:05

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	48.4	48.8	50.0	96.8	97.6	0.8	77-123	20		
Toluene	48.1	48.8	50.0	96.2	97.6	1.4	78-122	20		
Ethyl benzene	46.1	46.4	50.0	92.2	92.8	0.6	70-130	20		
Xylene(s)	138	140	150	92.0	93.3	1.4	75-125	20		
<b>Surrogates(s)</b>										
Trifluorotoluene	567	572	500	113.4	114.4		58-124			

Severn Trent Laboratories, Inc.

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10/14/2004 10:10

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

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San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

**Batch QC Report**

Prep(s): 5030

Test(s): 8015M

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/10/08-01.05**

LCS 2004/10/08-01.05-006

Extracted: 10/08/2004

Analyzed: 10/08/2004 09:37

LCSD 2004/10/08-01.05-007

Extracted: 10/08/2004

Analyzed: 10/08/2004 10:10

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Gasoline	262	270	250	104.8	108.0	3.0	75-125	20		
<b>Surrogates(s)</b>										
4-Bromofluorobenzene-FID	509	507	500	101.8	101.4		50-150			

Severn Trent Laboratories, Inc.

10/14/2004 10:10

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Page 13 of 15

**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations  
Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

**Batch QC Report**

Prep(s): 5030

Test(s): 8021B

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/10/07-01.05**

MW-3 >> MS

Lab ID: 2004-10-0150 - 002

MS: 2004/10/07-01.05-030

Extracted: 10/07/2004

Analyzed: 10/07/2004 23:34

Dilution: 50.00

MSD: 2004/10/07-01.05-031

Extracted: 10/08/2004

Analyzed: 10/08/2004 00:07

Dilution: 50.00

Compound	Conc. ug/L			Spk. Level ug/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	4900	4780	2460	2500	97.6	92.8	5.0	65-135	20		
Toluene	2310	2230	51.5	2500	90.3	87.1	3.6	65-135	20		
Ethyl benzene	2390	2280	159	2500	89.2	84.8	5.1	65-135	20		
Xylene(s)	6920	6590	47.3	7500	91.6	87.2	4.9	65-135	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	480	482		500	96.0	96.4		58-124			

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

10/14/2004 10:10

Page 14 of 15



**Gas/BTEX by 8015M/8021**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000.05  
Bohannon

Received: 10/06/2004 09:23

**Batch QC Report**

Prep(s): 5030

Test(s): 8015M

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/10/07-01.05**

MW-3 >> MS

Lab ID: 2004-10-0150 - 002

MS: 2004/10/07-01.05-032

Extracted: 10/08/2004

Analyzed: 10/08/2004 00:39

Dilution: 50.00

MSD: 2004/10/07-01.05-033

Extracted: 10/08/2004

Analyzed: 10/08/2004 01:11

Dilution: 50.00

Compound	Conc. ug/L			Spk. Level ug/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Gasoline	19700	19800	9760	12500	79.5	80.3	1.0	65-135	20		
<i>Surrogate(s)</i> 4-Bromofluorobenzene-FID	479	435		500	95.8	87.0		50-150			

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10/14/2004 10:10

Page 15 of 15

STL Chicago  
2417 Bond Street  
University Park, IL 60466

Tel: 708 534 5200 Fax: 708 534 5211  
www.stl-inc.com

SEVERN TRENT LABORATORIES  
ANALYTICAL REPORT

JOB NUMBER: 230853

Prepared For:

Severn Trent Laboratories  
1220 Quarry Lane  
Pleasanton, CA 94566-4756

Project: STL San Francisco

Attention: Afsaneh Salimpour

Date: 10/14/2004

Bonnie Stadelmann  
Signature

10/14/04  
Date

Name: Bonnie M. Stadelmann  
Title: Project Manager  
E-Mail: bstadelmann@stl-inc.com

STL Chicago  
2417 Bond Street  
University Park, IL 60466  
PHONE: (708) 534-5200  
FAX: (708) 534-5211

This Report Contains (10) Pages

STL Chicago is part of Severn Trent Laboratories, Inc.

SAMPLE INFORMATION

Date: 10/14/2004

Job Number.: 230853

Project Number.....: 20002032

Customer...: Severn Trent Laboratories

Customer Project ID....: 2004-10-0150

Attn.....: Afsaneh Salimpour

Project Description....: STL San Francisco

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
230853-1	MW-2	Water	10/05/2004	00:00	10/07/2004	09:15
230853-2	MW-4	Water	10/05/2004	00:00	10/07/2004	09:15
230853-3	N1W-A1	Water	10/05/2004	00:00	10/07/2004	09:15

LABORATORY TEST RESULTS

Job Number: 230853

Date: 10/14/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-IG-D150

ATTN: Afzaneh Salimpour

Customer Sample ID: MW-2  
 Date Sampled.....: 10/05/2004  
 Time Sampled.....: 00:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 230853-1  
 Date Received.....: 10/07/2004  
 Time Received.....: 09:15

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	<0.40	0.40	mg/L	10/12/04	mtb

\* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS

Job Number: 230853

Date: 10/14/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-10-0150

ATTN: Afaneh Selimour

Customer Sample ID: MW-4  
 Date Sampled.....: 10/05/2004  
 Time Sampled.....: 00:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 230853-2  
 Date Received.....: 10/07/2004  
 Time Received.....: 09:15

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	<0.40	0.40	mg/L	10/12/04	mtb

\* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS

Job Number: 230853

Date: 10/14/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-10-D150

ATTN: Afsaneh Salimpour

Customer Sample ID: N1W-A1  
Date Sampled.....: 10/05/2004  
Time Sampled.....: 00:00  
Sample Matrix.....: Water

Laboratory Sample ID: 230853-3  
Date Received.....: 10/07/2004  
Time Received.....: 09:15

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	120	20	mg/L	10/12/04	mtb

\* In Description = Dry Wgt.

LABORATORY CHRONICLE

Job Number: 230853

Date: 10/14/2004

CUSTOMER: Severn Trent Laboratories PROJECT: 2004-10-0150 ATTN: Afzaneh Salimpour

Lab ID:	Client ID:	Date Recvd:	Sample Date:				
230853-1	MW-2	10/07/2004	10/05/2004				
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
351.3	Nitrogen, Total Kjeldahl	1	131076	131076		10/12/2004 1318	
PKG INO (HC)	PKG INO (WET CHEMISTRY)	1					
230853-2	MW-4	10/07/2004	10/05/2004				
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
351.3	Nitrogen, Total Kjeldahl	1	131076	131076		10/12/2004 1322	
230853-3	N1W-A1	10/07/2004	10/05/2004				
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
351.3	Nitrogen, Total Kjeldahl	1	131076	131076		10/12/2004 1323	50

QUALITY CONTROL RESULTS

Job Number.: 230853

Report Date.: 10/14/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-10-0150

ATTN: Afsaneh Salimpour

Test Method: 351.3

Batch: 131076

Analyst: mcb

Method Description: Nitrogen, Total Kjeldahl

Equipment Code: SPEC1

Test Code: TKN

Parameter: Nitrogen, Total Kjeldahl as N (TKN)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	131076-004		mg/L	0.19000	U						10/12/2004	1303
LCS	131076-005	104HSTTK2	mg/L	2.66400		2.50000	0.18000	U	107	% 80-120	10/12/2004	1305
MS	230853-1	104HSTTK2	mg/L	2.81100		2.50000	0.28900	B	112	% 75-125	10/12/2004	1320
MSD	230853-1	104HSTTK2	mg/L	2.89500	2.81100	2.50000	0.28900	B	116	% 75-125	10/12/2004	1321
									3.5	R 20		



QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/14/2005

REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Soil, sediment and sludge sample results are reported on a "dry weight" basis except when analyzed for landfill disposal or incineration parameters. All other solid matrix samples are reported on an "as received" basis unless noted differently.
- 3) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 4) The test results for the noted analytical method(s) meet the requirements of NELAC. Lab Cert. ID# 100201
- 5) According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.

Glossary of flags, qualifiers and abbreviations (any number of which may appear in the report)

Inorganic Qualifiers (Q-Column)

- U Analyte was not detected at or above the stated limit.
- < Not detected at or above the reporting limit.
- J Result is less than the RL, but greater than or equal to the method detection limit.
- B Result is less than the CRDL/RL, but greater than or equal to the IDL/MDL.
- S Result was determined by the Method of Standard Additions.
- F AFCEE: Result is less than the RL, but greater than or equal to the method detection limit.

Inorganic Flags (Flag Column)

- ICV,CCV,ICB,CCB,ISA,ISB,CRI,CRA,MRL: Instrument related QC exceed the upper or lower control limits.
- \* LCS, LCD, MD: Batch QC exceeds the upper or lower control limits.
- + MSA correlation coefficient is less than 0.995.
- 4 MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
- E SD: Serial dilution exceeds the control limits.
- H MB, EB1, EB2, EB3: Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.
- N MS, MSD: Spike recovery exceeds the upper or lower control limits.
- W AS(GFAA) Post-digestion spike was outside 85-115% control limits.

Organic Qualifiers (Q - Column)

- U Analyte was not detected at or above the stated limit.
- ND Compound not detected.
- J Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
- Q Result was qualitatively confirmed, but not quantified.
- C Pesticide identification was confirmed by GC/MS.
- Y The chromatographic response resembles a typical fuel pattern.
- Z The chromatographic response does not resemble a typical fuel pattern.
- E Result exceeded calibration range, secondary dilution required.
- F AFCEE: Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)

Organic Flags (Flags Column)

- B MB: Batch QC is greater than reporting limit.
- \* LCS, LCD, ELC, ELD, CV, MS, MSD, Surrogate: Batch QC exceeds the upper or lower control limits.
- EB1, EB2, EB3, MLE: Batch QC is greater than reporting limit
- A Concentration exceeds the instrument calibration range
- B Concentration is below the method Reporting Limit (RL)
- B Compound was found in the blank and sample.
- D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
- H Alternate peak selection upon analytical review
- I Indicates the presence of an interference, recovery is not calculated.
- M Manually integrated compound.
- P The lower of the two values is reported when the % difference between the results of two GC columns is

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/14/2004

greater than 25%.

Abbreviations

AS Post Digestion Spike (GFAA Samples - See Note 1 below)  
 Batch Designation given to identify a specific extraction, digestion, preparation set, or analysis set  
 CAP Capillary Column CGB Continuing Calibration Blank  
 CCV Continuing Calibration Verification  
 CF Confirmation analysis of original  
 C1 Confirmation analysis of A1 or D1  
 C2 Confirmation analysis of A2 or D2  
 C3 Confirmation analysis of A3 or D3  
 CRA Low Level Standard Check - GFAA; Mercury  
 CRI Low Level Standard Check - ICP  
 CV Calibration Verification Standard  
 Dil Fac Dilution Factor - Secondary dilution analysis  
 D1 Dilution 1  
 D2 Dilution 2  
 D3 Dilution 3  
 DLFac Detection Limit Factor  
 DSH Distilled Standard - High Level  
 DSL Distilled Standard - Low Level  
 DSM Distilled Standard - Medium Level  
 EB1 Extraction Blank 1  
 EB2 Extraction Blank 2  
 EB3 DI Blank  
 ELC Method Extracted LCS  
 ELD Method Extracted LCD  
 ICAL Initial calibration  
 ICB Initial Calibration Blank  
 ICV Initial Calibration Verification  
 IDL Instrument Detection Limit  
 ISA Interference Check Sample A - ICAP  
 ISB Interference Check Sample B - ICAP  
 Job No. The first six digits of the sample ID which refers to a specific client, project and sample group  
 Lab ID An 8 number Unique Laboratory identification  
 LCD Laboratory Control Standard Duplicate  
 LCS Laboratory Control Standard with reagent grade water or a matrix free from the analyte of interest  
 MB Method Blank or (PB) Preparation Blank  
 MD Method Duplicate  
 MDL Method Detection Limit  
 MLE Medium Level Extraction Blank  
 MRL Method Reporting Limit Standard  
 MSA Method of Standard Additions  
 MS Matrix Spike  
 MSD Matrix Spike Duplicate  
 ND Not Detected  
 PREPF Preparation factor used by the Laboratory's Information Management System (LIMS)  
 PDS Post Digestion Spike (ICAP)  
 RA Re-analysis of original  
 A1 Re-analysis of D1  
 A2 Re-analysis of D2  
 A3 Re-analysis of D3  
 RD Re-extraction of dilution  
 RE Re-extraction of original  
 RC Re-extraction Confirmation  
 RL Reporting Limit  
 RPD Relative Percent Difference of duplicate (unrounded) analyses  
 RRF Relative Response Factor  
 RT Retention Time

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 10/14/2006

RTW Retention Time Window Sample ID A 9 digit number unique for each sample, the first six digits are referred as the job number  
SCB Seeded Control Blank  
SD Serial Dilution (Calculated when sample concentration exceeds 50 times the MDL)  
UCB Unseeded Control Blank  
SSV Second Source Verification Standard  
SLCS Solid Laboratory Control Standard(LCS)  
PHC pH Calibration Check LCSP pH Laboratory Control Sample  
LCDP pH Laboratory Control Sample Duplicate  
NDPH pH Sample Duplicate  
MDFP Flashpoint Sample Duplicate  
LCFP Flashpoint LCS  
G1 Gelex Check Standard Range 0-1  
G2 Gelex Check Standard Range 1-10  
G3 Gelex Check Standard Range 10-100  
G4 Gelex Check Standard Range 100-1000

Note 1: The Post Spike Designation on Batch QC for GFAA is designated with an "S" added to the current abbreviation used. EX. LCS S=LCS Post Spike (GFAA); MSS=MS Post Spike (GFAA)

Note 2: The MD calculates an absolute difference (A) when the sample concentration is less than 5 times the reporting limit. The control limit is represented as +/- the RL.

SFVERN

TRENT

STL

Chain of Custody

Date Shipped: 10/6/2004

2004-10-0150 - 1

From: STL San Francisco (CL)
1220 Quarry Lane
Pleasanton, CA 94566-4756

To: STL Chicago
2417 Bond Street
University Park, IL 60466

230853

Project Manager: Afsaneh Salimpour
Phone: (925) 484-1919 Ext: 107
Fax: (925) 484-1096
Email: asalimpour@stl-inc.com

Phone: (708) 534-5200 Ext:
Fax: (708) 534-5211
Contact: Bonnie Stadelmann
Phone: (708) 534-5200 Ext: 154

CL Submission #: 2004-10-0150
CL PO #:

Project #: 98360-000.05
Project Name: Bohannon

Table with 5 columns: Sample ID, Subcontract, Total Kjeldahl Nitrogen, Date/Time, and Day. Rows include MW-2, MW-4, and N1W-A1.

PLEASE INCLUDE QC WITH FAXED AND HARD-COPY RESULTS

RELINQUISHED BY: 1. Signature: [Handwritten], Time: 1330, Printed Name: M. VILLANUEVA, Date: 10/06/04, Company: STL SF

RELINQUISHED BY: 2. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_

RELINQUISHED BY: 3. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_

RECEIVED BY: 1. Signature: [Handwritten], Time: 9:15, Printed Name: [Handwritten], Date: 10-7-04, Company: [Handwritten]

RECEIVED BY: 2. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_

RECEIVED BY: 3. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_



STL San Francisco

### Sample Receipt Checklist

Submission #: 2004- 10 - 0150

Checklist completed by: (initials) AA Date: 10/06/04

Courier name:  STL San Francisco  Client \_\_\_\_\_

Custody seals intact on shipping container/samples Yes \_\_\_ No \_\_\_ Not Present

Chain of custody present? Yes  No \_\_\_

Chain of custody signed when relinquished and received? Yes  No \_\_\_

Chain of custody agrees with sample labels? Yes  No \_\_\_

Samples in proper container/bottle? Yes  No \_\_\_

Sample containers intact? Yes  No \_\_\_

Sufficient sample volume for indicated test? Yes  No \_\_\_

All samples received within holding time? Yes  No \_\_\_

Container/Temp Blank temperature in compliance ( $4^{\circ}\text{C} \pm 2$ )? Temp: 4 °C Yes  No \_\_\_

Potential reason for  $> 6^{\circ}\text{C}$  - Ice melted  Ice in bags  Not enough ice  Not enough blue ice  Samples in boxes

Sampled  $< 4$  hr. ago?  Ice not required (e.g. air or bulk sample)  Ice Present Yes  No \_\_\_

Water - VOA vials have zero headspace? No VOA vials submitted \_\_\_ Yes  No \_\_\_

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small ~O), M (medium ~ O) or L (large ~ O))

Water - pH acceptable upon receipt?  Yes  No

pH adjusted - Preservative used:  HNO<sub>3</sub>  HCl  H<sub>2</sub>SO<sub>4</sub>  NaOH  ZnOAc - Lot #(s) \_\_\_\_\_

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: \_\_\_\_\_  
\_\_\_\_\_

#### Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) \_\_\_\_\_ Date: \_\_\_\_\_/\_\_\_\_\_/04 Client contacted:  Yes  No

Summary of discussion: \_\_\_\_\_  
\_\_\_\_\_

Corrective Action (per PM/Client): \_\_\_\_\_  
\_\_\_\_\_

**Engineering and Fire Investigations**

November 03, 2004

111 Deerwood Road, Ste 195  
San Ramon, CA 94583

Attn.: Mark Williams  
Site: San Lorenzo, CA

Dear Mr. Williams,

Attached is our report for your samples received on 10/22/2004 17:16  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after  
12/06/2004 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions,  
please call me at (925) 484-1919.

You can also contact me via email. My email address is: [asalimpour@stl-inc.com](mailto:asalimpour@stl-inc.com)

Sincerely,



Afsaneh Salimpour  
Project Manager

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
PRODUCT	10/22/2004 16:30	Water	1



**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

Prep(s):	300.0/9056	Test(s):	300.0/9056
Sample ID:	<b>PRODUCT</b>	Lab ID:	2004-10-0728 - 1
Sampled:	10/22/2004 16:30	Extracted:	10/23/2004 10:14
Matrix:	Water	QC Batch#:	2004/10/23-01.41

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Nitrite	ND	100	mg/L	100.00	10/25/2004 20:36	L4
Nitrate	ND	1.0	mg/L	1.00	10/23/2004 10:14	

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566  
Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

11/03/2004 10:24

Page 2 of 6

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 300.0/9056

Method Blank

MB: 2004/10/23-01.41-001

Water

Test(s): 300.0/9056

QC Batch # 2004/10/23-01.41

Date Extracted: 10/23/2004 21:22

Compound	Conc.	RL	Unit	Analyzed	Flag
Nitrite	ND	1.0	mg/L	10/23/2004 09:22	
Nitrate	ND	1.0	mg/L	10/23/2004 09:22	

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

11/03/2004 10:24

Page 3 of 6

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 300.0/9056

Test(s): 300.0/9056

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/10/23-01.41**

LCS 2004/10/23-01.41-002

Extracted: 10/23/2004

Analyzed: 10/23/2004 21:39

LCSD 2004/10/23-01.41-003

Extracted: 10/23/2004

Analyzed: 10/23/2004 21:57

Compound	Conc. mg/L		Exp. Conc.	Recovery %		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Nitrite	19.4	19.5	20.0	97.0	97.5	0.5	80-120	20		
Nitrate	19.7	19.7	20.0	98.5	98.5	0.0	80-120	20		

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

11/03/2004 10:24

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 300.0/9056

Test(s): 300.0/9056

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/10/23-01.41**

MS/MSD

Lab ID: 2004-10-0472 - 001

MS: 2004/10/23-01.41-004

Extracted: 10/24/2004

Analyzed: 10/24/2004 01:10

Dilution: 1.00

MSD: 2004/10/23-01.41-005

Extracted: 10/25/2004

Analyzed: 10/25/2004 00:52

Dilution: 1.00

Compound	Conc. mg/L			Spk.Level mg/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Nitrite	21.1	21.2	ND	20.0	105.5	106.0	0.0	80-120	20		
Nitrate	19.7	20.0	ND	20.0	98.5	100.0	0.0	80-120	20		

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566  
Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

11/03/2004 10:24

**Misc Anions by Ion Chromatograph**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195

San Ramon, CA 94583

Phone: (925) 457-7384 Fax: (925) 820-9587

Project:

Received: 10/22/2004 17:16

Site: San Lorenzo, CA

---

**Legend and Notes**

---

**Result Flag**

L4

Reporting limits were raised due to matrix interference.

STL Chicago  
2417 Bond Street  
University Park, IL 60466

Tel: 708 534 5200 Fax: 708 534 5211  
www.stl-inc.com

SEVERN TRENT LABORATORIES  
ANALYTICAL REPORT

JOB NUMBER: 231373

Prepared For:

Severn Trent Laboratories  
1220 Quarry Lane  
Pleasanton, CA 94566 4756

Project: STL San Francisco

Attention: Afsaneh Salimpour

Date: 11/01/2004

  
Signature

Name: Bonnie M. Stadelmann  
Title: Project Manager  
E-Mail: bstadelmann@stl-inc.com

Date 11/01/04

STL Chicago  
2417 Bond Street  
University Park, IL 60466  
PHONE: (708) 534-5200  
FAX: (708) 534-5211

This Report Contains ( 8 ) Pages

STL Chicago is part of Severn Trent Laboratories, Inc.

SAMPLE INFORMATION

Date: 11/01/2004

Job Number.: 231373  
Customer...: Severn Trent Laboratories  
Attn.....: Afsaneh Salimpour

Project Number.....: 20002032  
Customer Project ID....: 2004-10-0728  
Project Description....: STL San Francisco

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
231373-1	PRODUCT	Water	10/22/2004	16:30	10/26/2004	09:00

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LABORATORY TEST RESULTS						
Job Number: 231373			Date: 11/01/2004			
CUSTOMER: Severn Trent Laboratories		PROJECT: 2004-10-0720		ATTN: Ayeaneh Salimpour		
Customer Sample ID: PRODUCT Date Sampled.....: 10/22/2004 Time Sampled.....: 16:30 Sample Matrix.....: Water			Laboratory Sample ID: 231373-1 Date Received.....: 10/26/2004 Time Received.....: 09:00			
TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4),as N	220	20	mg/L	10/30/04	mtb
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	520	60	mg/L	10/29/04	mtb

\* In Description = Dry Wgt.



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LABORATORY CHRONICLE

Job Number: 231373

Date: 11/01/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-10-0728

ATTN: Afsaneh Salimpour

Lab ID: 231373-1	Client ID: PRODUCT	Date Recvd: 10/26/2004	Sample Date: 10/22/2004				
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
350.2	Nitrogen, Ammonia (Dist./Nessler,)	1	132718	132718		10/30/2004 1046	100
351.3	Nitrogen, Total Kjeldahl	1	132625	132625		10/29/2004 0858	200
PKG IND (WC)	PKG IND (WET CHEMISTRY)	1					

QUALITY CONTROL RESULTS

Job Number.: 231373

Report Date.: 11/01/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: Z004-10-0728

ATTN: Afsaneh Salimpour

Test Method: 350.2 Batch: 132718 Analyst: mtb  
 Method Description: Nitrogen, Ammonia (Dist./Messler.) Equipment Code: SPEC1 Test Code: NH3  
 Parameter: Ammonia(NH3+NH4), as N

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	132718-004		mg/L	0.13000 U							10/30/2004	1023
LCS	132718-005	104HSTTK2	mg/L	2.40000		2.50000	0.13000 U	96	X	80-120	10/30/2004	1024
EB3	132718-028		mg/L	0.13000 U							10/30/2004	1045

Test Method: 351.3 Batch: 132625 Analyst: mtb  
 Method Description: Nitrogen, Total Kjeldahl Equipment Code: SPEC1 Test Code: TKN  
 Parameter: Nitrogen, Total Kjeldahl, as N (TKN)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	132625-004		mg/L	0.18000 U							10/29/2004	0833
LCS	132625-005	104HSTTK2	mg/L	2.52600		2.50000	0.18000 U	101	X	80-120	10/29/2004	0835

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 11/01/2004

REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Soil, sediment and sludge sample results are reported on a "dry weight" basis except when analyzed for landfill disposal or incineration parameters. All other solid matrix samples are reported on an "as received" basis unless noted differently.
- 3) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 4) The test results for the noted analytical method(s) meet the requirements of NELAC Lab Cert. ID# 100201
- 5) According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH Field) they were not analyzed immediately, but as soon as possible on Laboratory receipt.

Glossary of flags, qualifiers and abbreviations (any number of which may appear in the report)

Inorganic Qualifiers (Q-Column)

- U Analyte was not detected at or above the stated limit.
- < Not detected at or above the reporting limit.
- J Result is less than the RL, but greater than or equal to the method detection limit.
- B Result is less than the CRDL/RL, but greater than or equal to the IDL/MDL.
- S Result was determined by the Method of Standard Additions.
- F AFCEE: Result is less than the RL, but greater than or equal to the method detection limit.

Inorganic Flags (Flag Column)

- ICV,CCV,ICB,CCB,ISA,ISB,CRI,CRA,MRL: Instrument related QC exceed the upper or lower control limits.
- \* LCS, LCD, MD: Batch QC exceeds the upper or lower control limits.
- + MSA correlation coefficient is less than 0.995.
- 4 MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
- E SD: Serial dilution exceeds the control limits.
- H MS, EB1, EB2, EB3: Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.
- N MS, MSD: Spike recovery exceeds the upper or lower control limits.
- W AS(GFAA) Post-digestion spike was outside 85-115% control limits.

Organic Qualifiers (Q - Column)

- U Analyte was not detected at or above the stated limit.
- ND Compound not detected.
- J Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
- Q Result was qualitatively confirmed, but not quantified.
- C Pesticide identification was confirmed by GC/MS.
- Y The chromatographic response resembles a typical fuel pattern.
- Z The chromatographic response does not resemble a typical fuel pattern.
- E Result exceeded calibration range, secondary dilution required.
- F AFCEE:Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)

Organic Flags (Flags Column)

- B MB: Batch QC is greater than reporting limit.
- \* LCS, LCD, ELC, ELD, CV, MS, MSD, Surrogate: Batch QC exceeds the upper or lower control limits.
- EB1, EB2, EB3, MLE: Batch QC is greater than reporting limit
- A Concentration exceeds the instrument calibration range
- a Concentration is below the method Reporting Limit (RL)
- B Compound was found in the blank and sample.
- D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
- H Alternate peak selection upon analytical review
- I Indicates the presence of an interference, recovery is not calculated.
- M Manually integrated compound.
- P The lower of the two values is reported when the % difference between the results of two GC columns is

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 11/01/2004

greater than 25%.

Abbreviations

AS	Post Digestion Spike (GFAA Samples - See Note 1 below)
Batch	Designation given to identify a specific extraction, digestion, preparation set, or analysis set
CAP	Capillary Column CCB Continuing Calibration Blank
CCV	Continuing Calibration Verification
CF	Confirmation analysis of original
C1	Confirmation analysis of A1 or D1
C2	Confirmation analysis of A2 or D2
C3	Confirmation analysis of A3 or D3
CRA	Low Level Standard Check - GFAA; Mercury
CRI	Low Level Standard Check - ICP
CV	Calibration Verification Standard
Dil Fac	Dilution Factor - Secondary dilution analysis
D1	Dilution 1
D2	Dilution 2
D3	Dilution 3
DLFac	Detection Limit Factor
DSH	Distilled Standard - High Level
DSL	Distilled Standard - Low Level
DSM	Distilled Standard - Medium Level
EB1	Extraction Blank 1
EB2	Extraction Blank 2
EB3	DI Blank
ELC	Method Extracted LCS
ELD	Method Extracted LCD
ICAL	Initial calibration
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
ISA	Interference Check Sample A - ICAP
ISB	Interference Check Sample B - ICAP
Job No.	The first six digits of the sample ID which refers to a specific client, project and sample group Lab ID An B number unique laboratory identification
LCD	Laboratory Control Standard Duplicate
LCS	Laboratory Control Standard with reagent grade water or a matrix free from the analyte of interest
MB	Method Blank or (PB) Preparation Blank
MD	Method Duplicate
MDL	Method Detection Limit
MLE	Medium Level Extraction Blank
MRL	Method Reporting Limit Standard
MSA	Method of Standard Additions
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not Detected
PREPF	Preparation factor used by the Laboratory's Information Management System (LIMS)
PDS	Post Digestion Spike (ICAP)
RA	Re-analysis of original
A1	Re-analysis of D1
A2	Re-analysis of D2
A3	Re-analysis of D3
RD	Re-extraction of dilution
RE	Re-extraction of original
RC	Re-extraction Confirmation
RL	Reporting Limit
RPD	Relative Percent Difference of duplicate (unrounded) analyses
RRF	Relative Response Factor
RT	Retention Time

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 11/01/2006

RTW Retention Time Window Sample ID A 9 digit number unique for each sample, the first six digits are referred as the job number

SCB Seeded Control Blank

SD Serial Dilution (Calculated when sample concentration exceeds 50 times the MDL)

UCB Unseeded Control Blank

SSV Second Source Verification Standard

SLCS Solid Laboratory Control Standard(LCS)

PHC pH Calibration Check LCSP pH Laboratory Control Sample

LCDP pH Laboratory Control Sample Duplicate

MDPH pH Sample Duplicate

MDFP Flashpoint Sample Duplicate

LCFP Flashpoint LCS

G1 Gelex Check Standard Range 0-1

G2 Gelex Check Standard Range 1-10

G3 Gelex Check Standard Range 10-100

G4 Gelex Check Standard Range 100-1000

Note 1: The Post Spike Designation on Batch QC for GFAA is designated with an "S" added to the current abbreviation used. EX. LCS S=LCS Post Spike (GFAA); MSS=MS Post Spike (GFAA)

Note 2: The MD calculates an absolute difference (A) when the sample concentration is less than 5 times the reporting limit. The control limit is represented as +/- the RL.

231373

Date Shipped: 10/22/2004

2004-10-0728 - 1



STL

Chain of Custody

From: **STL San Francisco (CL)**  
 1220 Quarry Lane  
 Pleasanton, CA 94566-4756

To: **STL Chicago**  
 2417 Bond Street  
 University Park, IL 60468

Project Manager: Afsaneh Salimpour  
 Phone: (925) 484-1919 Ext: 107  
 Fax: (925) 484-1096  
 Email: asalimpour@stl-inc.com

Phone: (708) 534-5200 Ext:  
 Fax: (708) 534-5211  
 Contact: Bonnie Stadelmann  
 Phone: (708) 534-5200 Ext: 154

CL Submission #: 2004-10-0728 Project #:  
 CL PO #: Project Name:

Product	CL	Date/Time	Water	Day
Subcontract - Ammonia	1	10/22/2004 4:30:00PM	350.3	5 Day
Subcontract - Total Kjeldahl Nitrogen			351.4	5 Day

PLEASE INCLUDE QC WITH FAXED AND HARD-COPY RESULTS

RELINQUISHED BY: 1.

Signature: *[Signature]* Time: 15:15  
 Printed Name: Bryan Thomas Date: 10/25/04  
 Company: STL-SF

RELINQUISHED BY: 2.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

RELINQUISHED BY: 3.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

RECEIVED BY: 1.

Signature: *[Signature]* Time: 09:00  
 Printed Name: \_\_\_\_\_ Date: 10/26/04  
 Company: \_\_\_\_\_

RECEIVED BY: 2.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Company: \_\_\_\_\_

RECEIVED BY: 3.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 Company: \_\_\_\_\_



STC LINDING Lab - Pleasanton  
**TORRENT LABORATORY, INC.** 2004-10-07-20  
**CHAIN OF CUSTODY**

483 Sinclair Frontage Road, Milpitas, CA 95035  
 Phone: 408.263.5258 • FAX: 408.263.8293  
 www.torrentlab.com • email: analysis@torrentlab.com

45002  
 LAB WORK ORDER NO

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

Company Name: Engineering + Fire Investigation Location of Sampling: San Lorenzo, CA  
 Address: 111 Deerwood Rd Sub 195 Purpose:  
 City: San Ramon State: CA Zip Code: 94583 Special Instructions / Comments:  
 Telephone: 925 457-7384 FAX: 925 920-9580  
 REPORT TO: Mark Williams SAMPLER: Mark Williams P.O.#: 98360-Bohannon EMAIL:

TURNAROUND TIME:  10 Working Days  3 Working Days  2 - 8 Hours  
 7 Working Days  2 Working Days  Other  
 5 Working Days  24 Hours Standard

SAMPLE TYPE:  Storm Water  Other  
 Waste Water  
 Ground Water  
 Soil

REPORT FORMAT:  QC Level II  
 EDF  
 Excel / EDD

ANALYSIS REQUESTED  
NO3 / NO2  
Ammonia  
Met/Cl Nitrate

CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	ANALYSIS REQUESTED								TORRENT'S SAMPLE I.D.	
1. <u>Product</u>	<u>10/22/04 4:30</u>	<u>Water</u>	<u>4</u>	<u>gal</u>										
2.														
3.														
4.														
5.														
6.														
7.														
8.														
9.														
10.														

1 Relinquished By: [Signature] Date: 10/22/04 Time: 5:16 pm Received By: [Signature] Date: 10/22/04 Time: 17:16

2 Relinquished By: Date: Time: Received By: Date: Time:

Were Samples Received in Good Condition?  Yes  NO Samples on Ice?  Yes  NO Method of Shipment Sample seals intact?  Yes  NO

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made. Page \_\_\_\_\_ of \_\_\_\_\_

TORRENT LAB

22

STL San Francisco

Sample Receipt Checklist

Submission #: 2004-18-0728

Checklist completed by: (initials) MN Date: 10, 22, 04

Courier name: [ ] STL San Francisco [x] Client

Custody seals intact on shipping container/samples Yes \_\_\_ No \_\_\_ Not Present [x]

Chain of custody present? Yes [x] No \_\_\_

Chain of custody signed when relinquished and received? Yes [x] No \_\_\_

Chain of custody agrees with sample labels? Yes [x] No \_\_\_

Samples in proper container/bottle? Yes [x] No \_\_\_

Sample containers intact? Yes [x] No \_\_\_

Sufficient sample volume for indicated test? Yes [x] No \_\_\_

All samples received within holding time? Yes [x] No \_\_\_

Container/Temp Blank temperature in compliance (4° C ± 2)? Temp: 22°C Yes [x] No \_\_\_

Potential reason for > 6°C - Ice melted [ ] Ice in bags [ ] Not enough ice [ ] Not enough blue ice [ ] Samples in boxes [ ]

Sampled < 4hr. ago? [x] Ice not required (e.g. air or bulk sample) [ ] Ice Present Yes \_\_\_ No [x]

Water - VOA vials have zero headspace? No VOA vials submitted Yes [x] No \_\_\_

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small ~O), M (medium ~ O) or L (large ~ O))

Water - pH acceptable upon receipt? [ ] Yes [ ] No

pH adjusted- Preservative used: [ ] HNO3 [ ] HCl [x] H2SO4 [ ] NaOH [ ] ZnOAc - Lot #(s) 779040 / M0016

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments:

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) \_\_\_\_\_ Date: \_\_\_\_\_ / \_\_\_\_\_ /04 Client contacted: [ ] Yes [ ] No

Summary of discussion:

Corrective Action (per PM/Client):



**Engineering and Fire Investigations**

December 13, 2004

111 Deerwood Road, Ste 195  
San Ramon, CA 94583

Attn.: Mark Williams

Project#: 98360-000-15

Project: Bohannon

Site: San Lorenzo, CA

Dear Mr. Williams,

Attached is our report for your samples received on 12/03/2004 13:24  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after  
01/17/2005 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions,  
please call me at (925) 484-1919.

You can also contact me via email. My email address is: [asalimpour@stl-inc.com](mailto:asalimpour@stl-inc.com)

Sincerely,



Afsaneh Salimpour  
Project Manager

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
MW-3	12/02/2004	Water	3
MW-4	12/03/2004	Water	4
MW-5	12/02/2004	Water	5
MW-6	12/02/2004	Water	6
MW-7	12/02/2004	Water	7

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

Prep(s): 5030B Test(s): 8260B  
Sample ID: MW-3 Lab ID: 2004-12-0121 - 3  
Sampled: 12/02/2004 Extracted: 12/10/2004 13:13  
Matrix: Water QC Batch#: 2004/12/10-01.62  
Analysis Flag: L2 ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	8300	1300	ug/L	25.00	12/10/2004 13:13	
Benzene	2400	13	ug/L	25.00	12/10/2004 13:13	
Toluene	41	13	ug/L	25.00	12/10/2004 13:13	
Ethylbenzene	200	13	ug/L	25.00	12/10/2004 13:13	
Total xylenes	29	25	ug/L	25.00	12/10/2004 13:13	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	101.3	73-130	%	25.00	12/10/2004 13:13	
Toluene-d8	107.0	81-114	%	25.00	12/10/2004 13:13	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcnonn

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

Prep(s): 5030B Test(s): 8260B  
Sample ID: MW-4 Lab ID: 2004-12-0121 - 4  
Sampled: 12/03/2004 Extracted: 12/10/2004 13:36  
Matrix: Water QC Batch#: 2004/12/10-01.62  
Analysis Flag: L2 ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	2800	100	ug/L	2.00	12/10/2004 13:36	
Benzene	120	1.0	ug/L	2.00	12/10/2004 13:36	
Toluene	5.4	1.0	ug/L	2.00	12/10/2004 13:36	
Ethylbenzene	8.3	1.0	ug/L	2.00	12/10/2004 13:36	
Total xylenes	5.3	2.0	ug/L	2.00	12/10/2004 13:36	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	111.5	73-130	%	2.00	12/10/2004 13:36	
Toluene-d8	100.7	81-114	%	2.00	12/10/2004 13:36	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

Prep(s): 5030B	Test(s): 8260B
Sample ID: MW-5	Lab ID: 2004-12-0121 - 5
Sampled: 12/02/2004	Extracted: 12/9/2004 15:55
Matrix: Water	QC Batch#: 2004/12/09-01.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/2004 15:55	
Benzene	ND	0.50	ug/L	1.00	12/09/2004 15:55	
Toluene	ND	0.50	ug/L	1.00	12/09/2004 15:55	
Ethylbenzene	ND	0.50	ug/L	1.00	12/09/2004 15:55	
Total xylenes	ND	1.0	ug/L	1.00	12/09/2004 15:55	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	98.0	73-130	%	1.00	12/09/2004 15:55	
Toluene-d8	97.4	81-114	%	1.00	12/09/2004 15:55	

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

12/13/2004 08:29

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

Prep(s): 5030B Test(s): 8260B  
Sample ID: MW-6 Lab ID: 2004-12-0121 - 6  
Sampled: 12/02/2004 Extracted: 12/9/2004 16:17  
Matrix: Water QC Batch#: 2004/12/09-01.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/2004 16:17	
Benzene	ND	0.50	ug/L	1.00	12/09/2004 16:17	
Toluene	ND	0.50	ug/L	1.00	12/09/2004 16:17	
Ethylbenzene	ND	0.50	ug/L	1.00	12/09/2004 16:17	
Total xylenes	ND	1.0	ug/L	1.00	12/09/2004 16:17	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	97.5	73-130	%	1.00	12/09/2004 16:17	
Toluene-d8	97.1	81-114	%	1.00	12/09/2004 16:17	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcnnon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

Prep(s): 5030B	Test(s): 8260B
Sample ID: MW-7	Lab ID: 2004-12-0121 - 7
Sampled: 12/02/2004	Extracted: 12/9/2004 16:39
Matrix: Water	QC Batch#: 2004/12/09-01.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/2004 16:39	
Benzene	ND	0.50	ug/L	1.00	12/09/2004 16:39	
Toluene	ND	0.50	ug/L	1.00	12/09/2004 16:39	
Ethylbenzene	ND	0.50	ug/L	1.00	12/09/2004 16:39	
Total xylenes	ND	1.0	ug/L	1.00	12/09/2004 16:39	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	100.6	73-130	%	1.00	12/09/2004 16:39	
Toluene-d8	93.0	81-114	%	1.00	12/09/2004 16:39	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/12/09-01.64-013

Water

Test(s): 8260B

QC Batch # 2004/12/09-01.64

Date Extracted: 12/09/2004 09:13

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/09/2004 09:13	
Benzene	ND	0.5	ug/L	12/09/2004 09:13	
Toluene	ND	0.5	ug/L	12/09/2004 09:13	
Ethylbenzene	ND	0.5	ug/L	12/09/2004 09:13	
Total xylenes	ND	1.0	ug/L	12/09/2004 09:13	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	88.4	73-130	%	12/09/2004 09:13	
Toluene-d8	95.4	81-114	%	12/09/2004 09:13	



**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcnonn

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/12/10-01.62-050

Water

Test(s): 8260B

QC Batch # 2004/12/10-01.62

Date Extracted: 12/10/2004 07:50

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/10/2004 07:50	
Benzene	ND	0.5	ug/L	12/10/2004 07:50	
Toluene	ND	0.5	ug/L	12/10/2004 07:50	
Ethylbenzene	ND	0.5	ug/L	12/10/2004 07:50	
Total xylenes	ND	1.0	ug/L	12/10/2004 07:50	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	102.8	73-130	%	12/10/2004 07:50	
Toluene-d8	104.8	81-114	%	12/10/2004 07:50	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike

Water

QC Batch # 2004/12/09-01.64

LCS 2004/12/09-01.64-050  
LCSD

Extracted: 12/09/2004

Analyzed: 12/09/2004 08:50

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	24.6		25.0	98.4			69-129	20		
Toluene	23.7		25.0	94.8			70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	441		500	88.2			73-130			
Toluene-d8	484		500	96.8			81-114			

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

12/13/2004 08:29

Page 9 of 13

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/12/10-01.62**

LCS 2004/12/10-01.62-028  
LCSD

Extracted: 12/10/2004

Analyzed: 12/10/2004 07:28

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	21.3		25.0	85.2			69-129	20		
Toluene	20.9		25.0	83.6			70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	494		500	98.8			73-130			
Toluene-d8	515		500	103.0			81-114			

Severn Trent Laboratories, Inc.

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Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

12/13/2004 08:29

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations  
Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B Test(s): 8260B

**Matrix Spike ( MS / MSD )** **Water** **QC Batch # 2004/12/09-01.64**

MS/MSD Lab ID: 2004-12-0174 - 001

MS: 2004/12/09-01.64-020 Extracted: 12/09/2004 Analyzed: 12/09/2004 10:20

Dilution: 1.00

MSD: 2004/12/09-01.64-042 Extracted: 12/09/2004 Analyzed: 12/09/2004 10:42

Dilution: 1.00

Compound	Conc. ug/L			Spk. Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample		ug/L	MS	MSD	RPD	Rec.	RPD	MS
Benzene	25.0	24.5	ND	25.0	100.0	98.0	2.0	69-129	20		
Toluene	24.7	23.9	ND	25.0	98.8	95.6	3.3	70-130	20		
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	444	450		500	88.8	90.0		73-130			
Toluene-d8	489	466		500	97.8	93.2		81-114			

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

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San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Matrix Spike (MS / MSD)**

**Water**

**QC Batch # 2004/12/10-01.62**

MS/MSD

Lab ID: 2004-12-0228 - 001

MS: 2004/12/10-01.62-007

Extracted: 12/10/2004

Analyzed: 12/10/2004 09:07

Dilution: 1.00

MSD: 2004/12/10-01.62-029

Extracted: 12/10/2004

Analyzed: 12/10/2004 09:29

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level ug/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	24.4	25.0	ND	25.0	97.6	100.0	2.4	69-129	20		
Toluene	25.8	25.2	0.538	25.0	101.0	98.6	2.4	70-130	20		
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	448	453		500	89.6	90.6		73-130			
Toluene-d8	522	520		500	104.4	104.0		81-114			

Severn Trent Laboratories, Inc.

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Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

12/13/2004 08:29

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcnonn

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

---

**Legend and Notes**

---

**Analysis Flag**

L2

Reporting limits were raised due to high level of analyte present  
in the sample.

STL Chicago  
2417 Bond Street  
University Park, IL 60466

Tel: 708 534 5200 Fax: 708 534 5211  
www.stl-inc.com

SEVERN TRENT LABORATORIES  
ANALYTICAL REPORT

JOB NUMBER: 232516

Prepared For:

Severn Trent Laboratories  
1220 Quarry Lane  
Pleasanton, CA 94566-4756

Project: STL San Francisco

Attention: Afsaneh Salimpour

Date: 12/13/2004

*Bonnie Stadelmann*

Signature

12/13/04

Date

Name: Bonnie M. Stadelmann

Title: Project Manager

E-Mail: bstadelmann@stl-inc.com

STL Chicago  
2417 Bond Street  
University Park, IL 60466

PHONE: (708) 534-5200  
FAX: (708) 534-5211

This Report Contains ( 8 ) Pages

STL Chicago is part of Severn Trent Laboratories, Inc.

SAMPLE INFORMATION

Date: 12/13/2004

Job Number.: 232516

Customer...: Severn Trent Laboratories

Attn.....: Afsaneh Salimpour

Project Number.....: 20002032

Customer Project ID....: 2004-12-0121

Project Description....: STL San Francisco

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
232516-1	MW-4	Water	12/03/2004	12:00	12/07/2004	10:00



STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY TEST RESULTS  
Job Number: 232516 Date: 12/13/2004

CUSTOMER: Severn Trent Laboratories PROJECT: 2004-12-0121 AITN: Afsaneh Salimpour

Customer Sample ID: MW-4  
Date Sampled.....: 12/03/2004  
Time Sampled.....: 12:00  
Sample Matrix.....: Water

Laboratory Sample ID: 232516-1  
Date Received.....: 12/07/2004  
Time Received.....: 10:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4), as N	0.34	0.20	mg/L	12/09/04	jmk
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	<0.40	0.40	mg/L	12/09/04	mtb

\* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY CHRONICLE

Job Number: 232516

Date: 12/13/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-12-0121

ATTN: Afsaneh Salimpour

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #	DATE/TIME ANALYZED	DILUTION
350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	136662	136662	12/09/2004 1255	
351.3	Nitrogen, Total Kjeldahl	1	136672	136672	12/09/2004 1210	
PKG IND (WC)	PKG IND (WET CHEMISTRY)	1				

QUALITY CONTROL RESULTS

Job Number.: 232516

Report Date.: 12/13/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-12-0121

ATTN: Afzandeh Salimpour

Test Method: 350.2	Batch: 136662	Analyst: jmk
Method Description: Nitrogen, Ammonia (Dist./Nessler.)	Equipment Code: SPEC1	Test Code: NHS
Parameter: Ammonia(NH3+NH4), as N		

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	136662-004		mg/L	0.13000 U							12/09/2004	1242
LCS	136662-005	I04HSTTK2	mg/L	2.32400		2.50000	0.13000 U	93	%	80-120	12/09/2004	1243

Test Method: 351.3	Batch: 136672	Analyst: mtb
Method Description: Nitrogen, Total Kjeldahl	Equipment Code: SPEC1	Test Code: TKN
Parameter: Nitrogen, Total Kjeldahl, as N (TKN)		

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	136672-004		mg/L	0.18000 U							12/09/2004	1148
LCS	136672-005	I04HSTTK2	mg/L	2.21100		2.50000	0.18000 U	88	%	80-120	12/09/2004	1150
MS	232516-1	I04HSTTK2	mg/L	2.01700		2.50000	0.18000 U	81	%	75-125	12/09/2004	1212
MSD	232516-1	I04HSTTK2	mg/L	1.96400	2.01700	2.50000	0.18000 U	79	%	75-125	12/09/2004	1213
								2.5	R	20		

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/13/2004

REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Soil, sediment and sludge sample results are reported on a "dry weight" basis except when analyzed for landfill disposal or incineration parameters. All other solid matrix samples are reported on an "as received" basis unless noted differently.
- 3) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 4) The test results for the noted analytical method(s) meet the requirements of NELAC. Lab Cert. ID# 100201
- 5) According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH field) they were not analyzed immediately, but as soon as possible on laboratory receipt.

Glossary of flags, qualifiers and abbreviations (any number of which may appear in the report)

Inorganic Qualifiers (Q-Column)

- U Analyte was not detected at or above the stated limit.
- < Not detected at or above the reporting limit.
- J Result is less than the RL, but greater than or equal to the method detection limit.
- B Result is less than the CRDL/RL, but greater than or equal to the IDL/MDL.
- S Result was determined by the Method of Standard Additions.
- F AFCEE: Result is less than the RL, but greater than or equal to the method detection limit.

Inorganic Flags (Flag Column)

- ICV,CCV,ICB,CCB,ISA,ISB,CRI,CRA,MRL: Instrument related QC exceed the upper or lower control limits.
- \* LCS, LCD, MD: Batch QC exceeds the upper or lower control limits.
- + MSA correlation coefficient is less than 0.995.
- 4 MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
- E SD: Serial dilution exceeds the control limits.
- H MB, EB1, EB2, EB3: Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.
- N MS, MSD: Spike recovery exceeds the upper or lower control limits.
- W AS(GFAA) Post-digestion spike was outside 85-115% control Limits.

Organic Qualifiers (Q - Column)

- U Analyte was not detected at or above the stated limit.
- ND Compound not detected.
- J Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
- Q Result was qualitatively confirmed, but not quantified.
- C Pesticide identification was confirmed by GC/MS.
- Y The chromatographic response resembles a typical fuel pattern.
- Z The chromatographic response does not resemble a typical fuel pattern.
- E Result exceeded calibration range, secondary dilution required.
- F AFCEE:Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)

Organic Flags (Flags Column)

- B MB: Batch QC is greater than reporting limit.
- \* LCS, LCD, ELC, ELD, CV, MS, MSD, Surrogate: Batch QC exceeds the upper or lower control limits.
- EB1, EB2, EB3, MLE: Batch QC is greater than reporting Limit
- A Concentration exceeds the instrument calibration range
- a Concentration is below the method Reporting Limit (RL)
- B Compound was found in the blank and sample.
- D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
- H Alternate peak selection upon analytical review
- I Indicates the presence of an interference, recovery is not calculated.
- M Manually integrated compound.
- P The lower of the two values is reported when the % difference between the results of two GC columns is

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/13/2004

greater than 25%.

Abbreviations

AS	Post Digestion Spike (GFAA Samples - See Note 1 below)
Batch	Designation given to identify a specific extraction, digestion, preparation set, or analysis set
CAP	Capillary Column CCB Continuing Calibration Blank
CCV	Continuing Calibration Verification
CF	Confirmation analysis of original
C1	Confirmation analysis of A1 or D1
C2	Confirmation analysis of A2 or D2
C3	Confirmation analysis of A3 or D3
CRA	Low Level Standard Check - GFAA; Mercury
CRI	Low Level Standard Check - ICP
CV	Calibration Verification Standard
Dil Fac	Dilution Factor - Secondary dilution analysis
D1	Dilution 1
D2	Dilution 2
D3	Dilution 3
DLFac	Detection Limit Factor
DSH	Distilled Standard - High Level
DSL	Distilled Standard - Low Level
DSM	Distilled Standard - Medium Level
EB1	Extraction Blank 1
EB2	Extraction Blank 2
EB3	DI Blank
ELC	Method Extracted LCS
ELD	Method Extracted LCD
ICAL	Initial calibration
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
ISA	Interference Check Sample A - ICAP
ISB	Interference Check Sample B - ICAP
Job No.	The first six digits of the sample ID which refers to a specific client, project and sample group
	Lab ID An 8 number unique laboratory identification
LCD	Laboratory Control Standard Duplicate
LCS	Laboratory Control Standard with reagent grade water or a matrix free from the analyte of interest
MB	Method Blank or (PB) Preparation Blank
MD	Method Duplicate
MDL	Method Detection Limit
MLE	Medium Level Extraction Blank
MRL	Method Reporting Limit Standard
MSA	Method of Standard Additions
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not Detected
PREPF	Preparation factor used by the Laboratory's Information Management System (LIMS)
PDS	Post Digestion Spike (ICAP)
RA	Re-analysis of original
A1	Re-analysis of D1
A2	Re-analysis of D2
A3	Re-analysis of D3
RD	Re-extraction of dilution
RE	Re-extraction of original
RC	Re-extraction Confirmation
RL	Reporting Limit
RPD	Relative Percent Difference of duplicate (unrounded) analyses
RRF	Relative Response Factor
RT	Retention Time

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/13/2004

RTW Retention Time Window Sample ID A 9 digit number unique for each sample, the first six digits are referred as the job number  
SCB Seeded Control Blank  
SD Serial Dilution (Calculated when sample concentration exceeds 50 times the MDL)  
UCB Unseeded Control Blank  
SSV Second Source Verification Standard  
SLCS Solid Laboratory Control Standard(LCS)  
PHC pH Calibration Check LCSP pH Laboratory Control Sample  
LCDP pH Laboratory Control Sample Duplicate  
MDPH pH Sample Duplicate  
MDFP Flashpoint Sample Duplicate  
LCFP Flashpoint LCS  
G1 Gelex Check Standard Range 0-1  
G2 Gelex Check Standard Range 1-10  
G3 Gelex Check Standard Range 10-100  
G4 Gelex Check Standard Range 100-1000

Note 1: The Post Spike Designation on Batch QC for GFAA is designated with an "S" added to the current abbreviation used. EX. LCS S=LCS Post Spike (GFAA); MSS=MS Post Spike (GFAA)

Note 2: The MD calculates an absolute difference (A) when the sample concentration is less than 5 times the reporting limit. The control limit is represented as +/- the RL.

232516

Date Shipped: 12/4/2004

2004-12-0121 - 1



STL

Chain of Custody

From: STL San Francisco (CL)
1220 Quarry Lane
Pleasanton, CA 94566-4756

To: STL Chicago
2417 Bond Street
University Park, IL 60466

Project Manager: Afsaneh Salimpour
Phone: (925) 484-1919
Fax: (925) 484-1096
Email: asalimpour@stl-inc.com

Phone: (708) 534-5200
Fax: (708) 534-5211
Contact: Bonnie Stadelmann
Phone: (708) 534-5200 Ext: 154

CL Submission #: 2004-12-0121
CL PO #:

Project #: 98360-000-15
Project Name: Bohannon

Table with columns: Sample ID, Analytes, Matrix, MW-4, 4, 12/3/2004 12:00:00AM, Water, 350.3, 5 Day, 351.4, 5 Day

PLEASE INCLUDE QC WITH FAXED AND HARD-COPY RESULTS

RELINQUISHED BY: 1. Signature: [Signature], Time: 14:00, Printed Name: Bryan Thomas, Date: 12/6/04, Company: STL-SF

RELINQUISHED BY: 2. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_

RELINQUISHED BY: 3. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_

RECEIVED BY: 1. Signature: [Signature], Time: 1000, Printed Name: \_\_\_\_\_, Date: 12/6/04, Company: \_\_\_\_\_

RECEIVED BY: 2. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_

RECEIVED BY: 3. Signature: \_\_\_\_\_, Time: \_\_\_\_\_, Printed Name: \_\_\_\_\_, Date: \_\_\_\_\_, Company: \_\_\_\_\_



**Engineering and Fire Investigations**

**CHAIN OF CUSTODY**  
**2004-12-0121**

Page 1 of 1

Lab: STL

TAT: 5-day

**Report results to:**

Name Mark Williams  
 Company Engineering and Fire Investigation  
 Mailing Address 111 Deerwood Road, Suite 195  
 City, State, Zip San Ramon, California 94583  
 Telephone No. (925) 820-9580  
 Fax No. (925) 820-9587  
 mark\_williams@efiglobal.com

**Project Information**

Project No. 98360-000-15  
 Name Bohemian  
 Location San Lorenzo, CA

Special instructions and/or specific regulatory requirements:

5-day TAT

**Analyses Requested**

8015m/8020 TPH-g +BTEX																			
Ammonium nitrate - 350i2																			
Total nitrogen Kjeldahl 351i3																			

Sample Identification	Date Sampled	Time Sampled	Matrix/Media	No. of Conts.	8015m/8020 TPH-g +BTEX	Ammonium nitrate - 350i2	Total nitrogen Kjeldahl 351i3													Sample Condition/Comments	Preservative
MW-1	12/2/04		Water	4	X															not taken - DSH	
MW-2				4	X															not taken - DSH	
MW-3				6	X	X	X														
MW-4	12/3/04			6	X	X	X														
MW-5	12/2/04			4	X																
MW-6				4	X																
MW-7				4	X																

Collected by: Mark Williams Date/Time 12/2/03  
 Relinquished by: Mark Williams Date/Time 12/3/04 1:24PM  
 Relinquished by: \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Method of Shipment: \_\_\_\_\_

Collector's Signature: [Signature] Date/Time 12/3/04  
 Received by: Jean Anderson Date/Time 12-3-04 1324  
 Received by: \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Sample Condition on Rcpt: Temp. 3°



STL San Francisco

### Sample Receipt Checklist

Submission #: 2004- 12 - 0121

Checklist completed by: (initials) DSH Date: 12/06/04

Courier name:  STL San Francisco  Client \_\_\_\_\_

Custody seals intact on shipping container/samples Yes \_\_\_ No \_\_\_ Not Present

Chain of custody present? Yes  No \_\_\_

Chain of custody signed when relinquished and received? Yes \_\_\_ No \_\_\_

Chain of custody agrees with sample labels? Yes \_\_\_ No

Samples in proper container/bottle? Yes  No \_\_\_

Sample containers intact? Yes  No \_\_\_

Sufficient sample volume for indicated test? Yes  No \_\_\_

All samples received within holding time? Yes \_\_\_ No \_\_\_

Container/Temp Blank temperature in compliance ( $4^{\circ}\text{C} \pm 2$ )? Temp: 3 °C Yes  No \_\_\_

Potential reason for  $> 6^{\circ}\text{C}$  - Ice melted  Ice in bags  Not enough ice  Not enough blue ice  Samples in boxes

Sampled  $< 4\text{hr}$  ago?  Ice not required (e.g. air or bulk sample)  Ice Present Yes  No \_\_\_

Water - VOA vials have zero headspace? No VOA vials submitted Yes  No \_\_\_

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small ~O), M (medium ~ O) or L (large ~ O))

Water - pH acceptable upon receipt?  Yes  No

pH adjusted- Preservative used:  HNO<sub>3</sub>  HCl  H<sub>2</sub>SO<sub>4</sub>  NaOH  ZnOAc --Lot #(s) \_\_\_\_\_

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: Samples MW-1 + MW-2 not rec'd

#### Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) DSH Date: 12/06/04 Client contacted:  Yes  No Mark Williams

Summary of discussion: Samples MW-1 + MW-2 not sampled, per Mark Williams

Corrective Action (per PM/Client): \_\_\_\_\_

Engineering and Fire Investigations

December 13, 2004

111 Deerwood Road, Ste 195  
San Ramon, CA 94583

Attn.: Mark Williams

Project#: 98360-000-15

Project: Bohannon

Site: San Lorenzo, CA

Dear Mr. Williams,

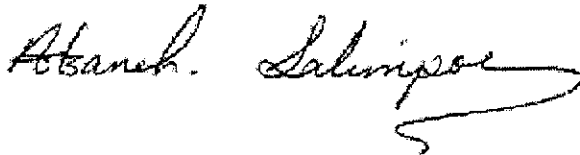
Attached is our report for your samples received on 12/03/2004 13:24  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after  
01/17/2005 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions,  
please call me at (925) 484-1919.

You can also contact me via email. My email address is: [asalimpour@stl-inc.com](mailto:asalimpour@stl-inc.com)

Sincerely,



Afsaneh Salimpour  
Project Manager

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcnonn

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
POBS-A1	12/02/2004	Water	1
POBS-B1	12/03/2004	Water	2
POBS-B2	12/03/2004	Water	3
NOBS-B1	12/03/2004	Water	4

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

Prep(s): 5030B Test(s): 8260B  
Sample ID: POBS-A1 Lab ID: 2004-12-0120 - 1  
Sampled: 12/02/2004 Extracted: 12/9/2004 15:55  
Matrix: Water QC Batch#: 2004/12/09-01.62  
Analysis Flag: L2 ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	17000	1300	ug/L	25.00	12/09/2004 15:55	
Benzene	3500	13	ug/L	25.00	12/09/2004 15:55	
Toluene	240	13	ug/L	25.00	12/09/2004 15:55	
Ethylbenzene	210	13	ug/L	25.00	12/09/2004 15:55	
Total xylenes	730	25	ug/L	25.00	12/09/2004 15:55	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	105.6	73-130	%	25.00	12/09/2004 15:55	
Toluene-d8	102.7	81-114	%	25.00	12/09/2004 15:55	

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12/13/2004 08:27

Page 2 of 12

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

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Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcnnon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

Prep(s): 5030B Test(s): 8260B  
Sample ID: POBS-B1 Lab ID: 2004-12-0120 - 2  
Sampled: 12/03/2004 Extracted: 12/9/2004 16:17  
Matrix: Water QC Batch#: 2004/12/09-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	190	50	ug/L	1.00	12/09/2004 16:17	Q6
Benzene	2.6	0.50	ug/L	1.00	12/09/2004 16:17	
Toluene	ND	0.50	ug/L	1.00	12/09/2004 16:17	
Ethylbenzene	ND	0.50	ug/L	1.00	12/09/2004 16:17	
Total xylenes	ND	1.0	ug/L	1.00	12/09/2004 16:17	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	107.6	73-130	%	1.00	12/09/2004 16:17	
Toluene-d8	105.1	81-114	%	1.00	12/09/2004 16:17	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

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Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

Prep(s): 5030B Test(s): 8260B  
Sample ID: POBS-B2 Lab ID: 2004-12-0120 - 3  
Sampled: 12/03/2004 Extracted: 12/9/2004 18:50  
Matrix: Water QC Batch#: 2004/12/09-02.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/2004 18:50	
Benzene	ND	0.50	ug/L	1.00	12/09/2004 18:50	
Toluene	ND	0.50	ug/L	1.00	12/09/2004 18:50	
Ethylbenzene	ND	0.50	ug/L	1.00	12/09/2004 18:50	
Total xylenes	ND	1.0	ug/L	1.00	12/09/2004 18:50	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	115.4	73-130	%	1.00	12/09/2004 18:50	
Toluene-d8	103.4	81-114	%	1.00	12/09/2004 18:50	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

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Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

Prep(s):	5030B	Test(s):	8260B
Sample ID:	NOBS-B1	Lab ID:	2004-12-0120 - 4
Sampled:	12/03/2004	Extracted:	12/9/2004 19:12
Matrix:	Water	QC Batch#:	2004/12/09-02.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/2004 19:12	
Benzene	2.0	0.50	ug/L	1.00	12/09/2004 19:12	
Toluene	ND	0.50	ug/L	1.00	12/09/2004 19:12	
Ethylbenzene	ND	0.50	ug/L	1.00	12/09/2004 19:12	
Total xylenes	ND	1.0	ug/L	1.00	12/09/2004 19:12	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	112.6	73-130	%	1.00	12/09/2004 19:12	
Toluene-d8	105.9	81-114	%	1.00	12/09/2004 19:12	

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12/13/2004 08:27

Page 5 of 12

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations  
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Project: 98360-000-15  
Bohcannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B  
Method Blank  
MB: 2004/12/09-01.62-024

Water

Test(s): 8260B  
QC Batch # 2004/12/09-01.62  
Date Extracted: 12/09/2004 09:24

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/09/2004 09:24	
Benzene	ND	0.5	ug/L	12/09/2004 09:24	
Toluene	ND	0.5	ug/L	12/09/2004 09:24	
Ethylbenzene	ND	0.5	ug/L	12/09/2004 09:24	
Total xylenes	ND	1.0	ug/L	12/09/2004 09:24	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	95.2	73-130	%	12/09/2004 09:24	
Toluene-d8	100.0	81-114	%	12/09/2004 09:24	



**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

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Project: 98360-000-15  
Bohcnonn

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/12/09-02.62-017

Water

Test(s): 8260B

QC Batch # 2004/12/09-02.62

Date Extracted: 12/09/2004 18:17

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/09/2004 18:17	
Benzene	ND	0.5	ug/L	12/09/2004 18:17	
Toluene	ND	0.5	ug/L	12/09/2004 18:17	
Ethylbenzene	ND	0.5	ug/L	12/09/2004 18:17	
Total xylenes	ND	1.0	ug/L	12/09/2004 18:17	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	94.0	73-130	%	12/09/2004 18:17	
Toluene-d8	100.8	81-114	%	12/09/2004 18:17	

**Fuel Oxygenates by 8260B**

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Project: 98360-000-15  
Bohcnnon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/12/09-01.62**

LCS 2004/12/09-01.62-001

Extracted: 12/09/2004

Analyzed: 12/09/2004 09:01

LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	24.4		25.0	97.6			69-129	20		
Toluene	24.0		25.0	96.0			70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	468		500	93.6			73-130			
Toluene-d8	514		500	102.8			81-114			

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**Fuel Oxygenates by 8260B**

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Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike

Water

QC Batch # 2004/12/09-02.62

LCS 2004/12/09-02.62-055

Extracted: 12/09/2004

Analyzed: 12/09/2004 17:55

LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	23.5		25.0	94.0			69-129	20		
Toluene	22.6		25.0	90.4			70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	494		500	98.8			73-130			
Toluene-d8	529		500	105.8			81-114			

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Page 9 of 12

**Fuel Oxygenates by 8260B**

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Attn.: Mark Williams

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Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/12/09-01.62**

MS/MSD

Lab ID: 2004-12-0155 - 004

MS: 2004/12/09-01.62-026

Extracted: 12/09/2004

Analyzed: 12/09/2004 11:26

Dilution: 1.00

MSD: 2004/12/09-01.62-048

Extracted: 12/09/2004

Analyzed: 12/09/2004 11:48

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level ug/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	26.3	26.6	1.59	25.0	98.8	100.0	1.2	69-129	20		
Toluene	31.5	32.8	8.27	25.0	92.9	98.1	5.4	70-130	20		
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	493	510		500	98.6	102.0		73-130			
Toluene-d8	529	526		500	105.8	105.2		81-114			

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

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Project: 98360-000-15  
Bohcnonn

Received: 12/03/2004 13:24

Site: San Lorenzo, CA

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/12/09-02.62**

MS/MSD

Lab ID: 2004-12-0224 - 007

MS: 2004/12/09-02.62-042

Extracted: 12/09/2004

Analyzed: 12/09/2004 20:42

Dilution: 1.00

MSD: 2004/12/09-02.62-004

Extracted: 12/09/2004

Analyzed: 12/09/2004 21:04

Dilution: 1.00

Compound	Conc. ug/L			Spk. Level ug/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	25.9	29.3	ND	25.0	103.6	117.2	12.3	69-129	20		
Toluene	25.9	27.6	ND	25.0	103.6	110.4	6.4	70-130	20		
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	545	562		500	109.0	112.4		73-130			
Toluene-d8	515	538		500	103.0	107.6		81-114			

**Fuel Oxygenates by 8260B**

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Received: 12/03/2004 13:24

Site: San Lorenzo, CA

---

**Legend and Notes**

---

**Analysis Flag**

L2

Reporting limits were raised due to high level of analyte present in the sample.

**Result Flag**

Q6

The concentration reported reflect(s) individual or discrete unidentified peaks not matching a typical fuel pattern.

Severn Trent Laboratories, Inc.

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University Park, IL 60466

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www.stl-inc.com

SEVERN TRENT LABORATORIES  
ANALYTICAL REPORT

JOB NUMBER: 232514

Prepared For:

Severn Trent Laboratories  
1220 Quarry Lane  
Pleasanton, CA 94566-4756

Project: STL San Francisco

Attention: Afsaneh Salimpour

Date: 12/13/2004

*Bonnie Stadelmann*

Signature

12/13/04

Date

Name: Bonnie M. Stadelmann

Title: Project Manager

E-Mail: bstadelmann@stl-inc.com

STL Chicago  
2417 Bond Street  
University Park, IL 60466

PHONE: (708) 534-5200  
FAX: (708) 534-5211

This Report Contains ( 8 ) Pages

STL Chicago is part of Severn Trent Laboratories, Inc.

SAMPLE INFORMATION  
Date: 12/13/2004

Job Number.: 232514  
Customer....: Severn Trent Laboratories  
Attn.....: Afsaneh Salimpour

Project Number.....: 20002032  
Customer Project ID....: 2004-12-0120  
Project Description....: STL San Francisco

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
232514-1	NOBS-B1	Water	12/03/2004	12:00	12/07/2004	10:00



LABORATORY TEST RESULTS

Job Number: 232514

Date: 12/13/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-12-0120

ATTN: Afsaneh Salimpour

Customer Sample ID: NOBS-B1  
 Date Sampled.....: 12/03/2004  
 Time Sampled.....: 12:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 232514-1  
 Date Received.....: 12/07/2004  
 Time Received.....: 10:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4), as N	0.54	0.20	mg/L	12/09/04	jmk
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	4.3	0.40	mg/L	12/09/04	mtb

\* In Description = Dry Wgt.

STL Chicago is part of Severn Trent Laboratories, Inc.

LABORATORY CHRONICLE

Job Number: 232514

Date: 12/13/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-12-0120

ATTN: Afsaneh Salimpour

Lab ID: 232514-1	Client ID: NOBS-B1	Date Recvd: 12/07/2004	Sample Date: 12/03/2004				
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	136662	136662		12/09/2004	1243
351.3	Nitrogen, Total Kjeldahl	1	136672	136672		12/09/2004	1209
PKG INO (WC)	PKG INO (WET CHEMISTRY)	1					

QUALITY CONTROL RESULTS

Job Number.: 232514

Report Date.: 12/13/2004

CUSTOMER.: Severn Trent Laboratories

PROJECT: 2004-12-0120

ATTN: Afsaneh Salimpour

Test Method.: 350.2 Batch.: 136662 Analyst.: jmk  
 Method Description.: Nitrogen, Ammonia (Dist./Nessler.) Equipment Code.: SPEC1 Test Code.: NH3  
 Parameter.: Ammonia(NH3+NH4), as N

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	136662-004		mg/L	0.13000	U						12/09/2004	1242
LCS	136662-005	104HSTTK2	mg/L	2.32400		2.50000	0.13000 U	93	%	80-120	12/09/2004	1243

Test Method.: 351.3 Batch.: 136672 Analyst.: mtb  
 Method Description.: Nitrogen, Total Kjeldahl Equipment Code.: SPEC1 Test Code.: TKN  
 Parameter.: Nitrogen, Total Kjeldahl as N (TKN)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	136672-004		mg/L	0.18000	U						12/09/2004	1148
LCS	136672-005	104HSTTK2	mg/L	2.21100		2.50000	0.18000 U	88	%	80-120	12/09/2004	1150

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/13/2004

REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Soil, sediment and sludge sample results are reported on a "dry weight" basis except when analyzed for landfill disposal or incineration parameters. All other solid matrix samples are reported on an "as received" basis unless noted differently.
- 3) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 4) The test results for the noted analytical method(s) meet the requirements of NELAC Lab Cert. ID# 100201
- 5) According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.

Glossary of flags, qualifiers and abbreviations (any number of which may appear in the report)

Inorganic Qualifiers (Q-Column)

- U Analyte was not detected at or above the stated limit.
- < Not detected at or above the reporting limit.
- J Result is less than the RL, but greater than or equal to the method detection limit.
- B Result is less than the CRDL/RL, but greater than or equal to the IDL/MDL.
- S Result was determined by the Method of Standard Additions.
- F AFCEE: Result is less than the RL, but greater than or equal to the method detection limit.

Inorganic Flags (Flag Column)

- ICV,CCV,ICB,CCB,ISA,ISB,CRI,CRA,MRL: Instrument related QC exceed the upper or lower control limits.
- \* LCS, LCD, MD: Batch QC exceeds the upper or lower control limits.
- + MSA correlation coefficient is less than 0.995.
- 4 MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
- E SD: Serial dilution exceeds the control limits.
- H MB, EB1, EB2, EB3: Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.
- N MS, MSD: Spike recovery exceeds the upper or lower control limits.
- W AS(GFAA) Post-digestion spike was outside 85-115% control limits.

Organic Qualifiers (Q - Column)

- U Analyte was not detected at or above the stated limit.
- ND Compound not detected.
- J Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
- Q Result was qualitatively confirmed, but not quantified.
- C Pesticide identification was confirmed by GC/MS.
- Y The chromatographic response resembles a typical fuel pattern.
- Z The chromatographic response does not resemble a typical fuel pattern.
- E Result exceeded calibration range, secondary dilution required.
- F AFCEE: Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)

Organic flags (Flags Column)

- B MB: Batch QC is greater than reporting limit.
- \* LCS, LCD, ELD, ELD, CV, MS, MSD, Surrogate: Batch QC exceeds the upper or lower control limits.
- EB1, EB2, EB3, MLE: Batch QC is greater than reporting limit
- A Concentration exceeds the instrument calibration range
- a Concentration is below the method Reporting Limit (RL)
- B Compound was found in the blank and sample.
- D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
- H Alternate peak selection upon analytical review
- I Indicates the presence of an interference, recovery is not calculated.
- M Manually integrated compound.
- P The lower of the two values is reported when the % difference between the results of two GC columns is

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/13/2004

greater than 25%.

Abbreviations

AS Post Digestion Spike (GFAA Samples - See Note 1 below)  
 Batch Designation given to identify a specific extraction, digestion, preparation set, or analysis set  
 CAP Capillary Column CCB Continuing Calibration Blank  
 CCV Continuing Calibration Verification  
 CF Confirmation analysis of original  
 C1 Confirmation analysis of A1 or D1  
 C2 Confirmation analysis of A2 or D2  
 C3 Confirmation analysis of A3 or D3  
 CRA Low Level Standard Check - GFAA; Mercury  
 CRI Low Level Standard Check - ICP  
 CV Calibration Verification Standard  
 Dil Fac Dilution Factor - Secondary dilution analysis  
 D1 Dilution 1  
 D2 Dilution 2  
 D3 Dilution 3  
 DLFac Detection Limit Factor  
 DSH Distilled Standard - High Level  
 DSL Distilled Standard - Low Level  
 DSM Distilled Standard - Medium Level  
 EB1 Extraction Blank 1  
 EB2 Extraction Blank 2  
 EB3 DI Blank  
 ELC Method Extracted LCS  
 ELD Method Extracted LCD  
 ICAL Initial calibration  
 ICB Initial Calibration Blank  
 ICV Initial Calibration Verification  
 IDL Instrument Detection Limit  
 ISA Interference Check Sample A - ICAP  
 ISB Interference Check Sample B - ICAP  
 Job No. The first six digits of the sample ID which refers to a specific client, project and sample group  
 Lab ID An 8 number unique laboratory identification  
 LCD Laboratory Control Standard Duplicate  
 LCS Laboratory Control Standard with reagent grade water or a matrix free from the analyte of interest  
 MB Method Blank or (PB) Preparation Blank  
 MD Method Duplicate  
 MDL Method Detection Limit  
 MLE Medium Level Extraction Blank  
 MRL Method Reporting Limit Standard  
 MSA Method of Standard Additions  
 MS Matrix Spike  
 MSD Matrix Spike Duplicate  
 ND Not Detected  
 PREPF Preparation factor used by the Laboratory's Information Management System (LIMS)  
 PDS Post Digestion Spike (ICAP)  
 RA Re-analysis of original  
 A1 Re-analysis of D1  
 A2 Re-analysis of D2  
 A3 Re-analysis of D3  
 RD Re-extraction of dilution  
 RE Re-extraction of original  
 RC Re-extraction Confirmation  
 RL Reporting Limit  
 RPD Relative Percent Difference of duplicate (unrounded) analyses  
 RRF Relative Response Factor  
 RT Retention Time

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/13/2004

RTW Retention Time Window Sample ID A 9 digit number unique for each sample, the first six digits are referred as the job number

SCB Seeded Control Blank

SD Serial Dilution (Calculated when sample concentration exceeds 50 times the MDL)

UCB Unseeded Control Blank

SSV Second Source Verification Standard

SLCS Solid Laboratory Control Standard(LCS)

PNC pH Calibration Check LCSP pH Laboratory Control Sample

LCDP pH Laboratory Control Sample Duplicate

MDPH pH Sample Duplicate

MDFP Flashpoint Sample Duplicate

LCFP Flashpoint LCS

G1 Gelex Check Standard Range 0-1

G2 Gelex Check Standard Range 1-10

G3 Gelex Check Standard Range 10-100

G4 Gelex Check Standard Range 100-1000

Note 1: The Post Spike Designation on Batch QC for GFAA is designated with an "S" added to the current abbreviation used. EX. LCS S=LCS Post Spike (GFAA); MSS=MS Post Spike (GFAA)

Note 2: The MD calculates an absolute difference (A) when the sample concentration is less than 5 times the reporting limit. The control limit is represented as +/- the RL.

232514

Date Shipped: 12/4/2004

2004-12-0120 - 1



STL

Chain of Custody

From: STL San Francisco (CL) 1220 Quarry Lane Pleasanton, CA 94566-4756

To: STL Chicago 2417 Bond Street University Park, IL 60466

Project Manager: Afsaneh Salimpour Phone: (925) 484-1919 Ext: 107 Fax: (925) 484-1096 Email: asalimpour@stl-inc.com

Phone: (708) 534-5200 Ext: Fax: (708) 534-5211 Contact: Bonnie Stadelmann Phone: (708) 534-5200 Ext: 154

CL Submission #: 2004-12-0120 CL PO #:

Project #: 98360-000-15 Project Name: Bohannon

Client Sample ID	Analysis	NOBS-B1	4	12/3/2004 12:00:00AM	Water		
		Subcontract - Ammonia			350.3	5	Day
		Subcontract - Total Kjeldahl Nitrogen			351.4	5	Day

PLEASE INCLUDE QC WITH FAXED AND HARD-COPY RESULTS

RELINQUISHED BY: 1.

Signature: *[Signature]* Time: 14:00

Printed Name: Bryan Thomas Date: 12/16/04

Company: STL-SP

RELINQUISHED BY: 2.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_

RELINQUISHED BY: 3.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_

RECEIVED BY: 1.

Signature: *[Signature]* Time: 10:00

Printed Name: \_\_\_\_\_ Date: 12-7-04

Company: \_\_\_\_\_

RECEIVED BY: 2.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_

RECEIVED BY: 3.

Signature: \_\_\_\_\_ Time: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Date: \_\_\_\_\_

Company: \_\_\_\_\_



**Engineering and Fire Investigations**

**CHAIN OF CUSTODY**

**2004-12-0120**

96260

Page 1 of 1

Lab: STL

TAT: 5-day

**Report results to:**

Name Mark Williams  
 Company Engineering and Fire Investigation  
 Mailing Address 111 Deerwood Road, Suite 195  
 City, State, Zip San Ramon, California 94583  
 Telephone No. (925) 820-9580  
 Fax No. (925) 820-9587  
mark\_williams@efiglobal.com

**Project Information**

Project No. 93360-00-15  
 Name Bethmann  
 Location San Lorenzo, CA

Special instructions and/or specific regulatory requirements:

5-day TAT

**Analyses Requested**

Sample Identification	Date Sampled	Time Sampled	Matrix/Media	No. of Conts.	Analyses Requested										Sample Condition/Comments	Preservative	
					8015m/8020 TPH-g +BTEX	350.2 nitrogen ammonia	351.3 nitrogen total kjeldahl										
POBS-A1	12/2/04		Water	4	X												
POBS-B1	12/3/04		)	4	X												
POBS-B2	12/2/04			4	X												
NOBS-B1	12/3/04			6	X	X	X										

Collected by: Mark Williams Date/Time 12/3/04 Collector's Signature: [Signature] Date/Time 12/3/04  
 Relinquished by: Mark Williams Date/Time 12/3/04 1:24 PM Received by: Joan Mullen Date/Time 12-3-04 1:32 PM  
 Relinquished by: \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Method of Shipment: \_\_\_\_\_ Sample Condition on Rcpt: Temp 3°



STL San Francisco

### Sample Receipt Checklist

Submission #: 2004- 12 - 0120

Checklist completed by: (initials) JM Date: 12/04/04

Courier name:  STL San Francisco  Client \_\_\_\_\_

Custody seals intact on shipping container/samples

Yes \_\_\_ No \_\_\_ Not Present

Chain of custody present?

Yes  No \_\_\_

Chain of custody signed when relinquished and received?

Yes  No \_\_\_

Chain of custody agrees with sample labels?

Yes  No \_\_\_

Samples in proper container/bottle?

Yes  No \_\_\_

Sample containers intact?

Yes  No \_\_\_

Sufficient sample volume for indicated test?

Yes  No \_\_\_

All samples received within holding time?

Yes  No \_\_\_

Container/Temp Blank temperature in compliance ( $4^{\circ}\text{C} \pm 2$ )?

Temp: 3 °C Yes  No \_\_\_

Potential reason for  $> 6^{\circ}\text{C}$  - Ice melted  Ice in bags  Not enough ice  Not enough blue ice  Samples in boxes

Sampled  $< 4$  hr. ago?  Ice not required (e.g. air or bulk sample)

Ice Present: Yes  No \_\_\_

Water - VOA vials have zero headspace?

No VOA vials submitted \_\_\_ Yes  No \_\_\_

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small ~  $\bigcirc$ ), M (medium ~  $\bigcirc$ ) or L (large ~  $\bigcirc$ ))

Water - pH acceptable upon receipt?  Yes  No

pH adjusted- Preservative used:   $\text{HNO}_3$    $\text{HCl}$    $\text{H}_2\text{SO}_4$    $\text{NaOH}$    $\text{ZnOAc}$  - Lot #(s) \_\_\_\_\_

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: \_\_\_\_\_

\_\_\_\_\_

#### Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/04 Client contacted:  Yes  No

Summary of discussion: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Corrective Action (per PM/Client): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Engineering and Fire Investigations

December 13, 2004

111 Deerwood Road, Ste 195  
San Ramon, CA 94583

Attn.: Mark Williams

Project#: 98360-000-15

Project: Bohannon

Site: San Lorenzo

Dear Mr. Williams,

Attached is our report for your samples received on 12/03/2004 13:24

This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 01/17/2005 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.

You can also contact me via email. My email address is: [asalimpour@stl-inc.com](mailto:asalimpour@stl-inc.com)

Sincerely,



Afsaneh Salimpour  
Project Manager

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* [www.stl-inc.com](http://www.stl-inc.com) \* CA DHS ELAP# 2496

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
PIW-A1	12/02/2004	Water	1
PIW-A2	12/02/2004	Water	2
PIW-B1	12/02/2004	Water	3
PIW-B3	12/02/2004	Water	4
NIW-A1	12/02/2004	Water	5
NIW-A2	12/02/2004	Water	6
NIW-B1	12/02/2004	Water	7
NIW-B2	12/02/2004	Water	8

Sewern Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

12/13/2004 08:37

Page 1 of 16

## Fuel Oxygenates by 8260B

Engineering and Fire Investigations  
Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo

Prep(s): 5030B Test(s): 8260B  
Sample ID: PIW-A1 Lab ID: 2004-12-0117 - 1  
Sampled: 12/02/2004 Extracted: 12/9/2004 12:55  
Matrix: Water QC Batch#: 2004/12/09-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	640	50	ug/L	1.00	12/09/2004 12:55	
Benzene	63	0.50	ug/L	1.00	12/09/2004 12:55	
Toluene	12	0.50	ug/L	1.00	12/09/2004 12:55	
Ethylbenzene	15	0.50	ug/L	1.00	12/09/2004 12:55	
Total xylenes	29	1.0	ug/L	1.00	12/09/2004 12:55	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	105.1	73-130	%	1.00	12/09/2004 12:55	
Toluene-d8	99.5	81-114	%	1.00	12/09/2004 12:55	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo

Prep(s): 5030B Test(s): 8260B  
Sample ID: PIW-A2 Lab ID: 2004-12-0117 - 2  
Sampled: 12/02/2004 Extracted: 12/9/2004 13:18  
Matrix: Water QC Batch#: 2004/12/09-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	350	50	ug/L	1.00	12/09/2004 13:18	
Benzene	6.1	0.50	ug/L	1.00	12/09/2004 13:18	
Toluene	1.2	0.50	ug/L	1.00	12/09/2004 13:18	
Ethylbenzene	2.4	0.50	ug/L	1.00	12/09/2004 13:18	
Total xylenes	5.4	1.0	ug/L	1.00	12/09/2004 13:18	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	94.6	73-130	%	1.00	12/09/2004 13:18	
Toluene-d8	107.6	81-114	%	1.00	12/09/2004 13:18	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo

Prep(s): 5030B	Test(s): 8260B
Sample ID: PIW-B1	Lab ID: 2004-12-0117 - 3
Sampled: 12/02/2004	Extracted: 12/10/2004 12:28
Matrix: Water	QC Batch#: 2004/12/10-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	66	50	ug/L	1.00	12/10/2004 12:28	Q6
Benzene	ND	0.50	ug/L	1.00	12/10/2004 12:28	
Toluene	ND	0.50	ug/L	1.00	12/10/2004 12:28	
Ethylbenzene	ND	0.50	ug/L	1.00	12/10/2004 12:28	
Total xylenes	ND	1.0	ug/L	1.00	12/10/2004 12:28	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	107.8	73-130	%	1.00	12/10/2004 12:28	
Toluene-d8	85.3	81-114	%	1.00	12/10/2004 12:28	

Severn Trent Laboratories, Inc.

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo

Prep(s): 5030B	Test(s): 8260B
Sample ID: PIW-B3	Lab ID: 2004-12-0117 - 4
Sampled: 12/02/2004	Extracted: 12/9/2004 14:03
Matrix: Water	QC Batch#: 2004/12/09-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	64	50	ug/L	1.00	12/09/2004 14:03	Q6
Benzene	0.75	0.50	ug/L	1.00	12/09/2004 14:03	
Toluene	ND	0.50	ug/L	1.00	12/09/2004 14:03	
Ethylbenzene	ND	0.50	ug/L	1.00	12/09/2004 14:03	
Total xylenes	ND	1.0	ug/L	1.00	12/09/2004 14:03	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	100.2	73-130	%	1.00	12/09/2004 14:03	
Toluene-d8	94.5	81-114	%	1.00	12/09/2004 14:03	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo

Prep(s): 5030B Test(s): 8260B  
Sample ID: NIW-A1 Lab ID: 2004-12-0117 - 5  
Sampled: 12/02/2004 Extracted: 12/10/2004 12:51  
Matrix: Water QC Batch#: 2004/12/10-01.62  
Analysis Flag: L2 ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	1400	250	ug/L	5.00	12/10/2004 12:51	
Benzene	28	2.5	ug/L	5.00	12/10/2004 12:51	
Toluene	6.2	2.5	ug/L	5.00	12/10/2004 12:51	
Ethylbenzene	10	2.5	ug/L	5.00	12/10/2004 12:51	
Total xylenes	23	5.0	ug/L	5.00	12/10/2004 12:51	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	108.0	73-130	%	5.00	12/10/2004 12:51	
Toluene-d8	102.4	81-114	%	5.00	12/10/2004 12:51	



**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo

Prep(s): 5030B	Test(s): 8260B
Sample ID: NIW-A2	Lab ID: 2004-12-0117 - 6
Sampled: 12/02/2004	Extracted: 12/9/2004 14:47
Matrix: Water	QC Batch#: 2004/12/09-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/2004 14:47	
Benzene	ND	0.50	ug/L	1.00	12/09/2004 14:47	
Toluene	ND	0.50	ug/L	1.00	12/09/2004 14:47	
Ethylbenzene	ND	0.50	ug/L	1.00	12/09/2004 14:47	
Total xylenes	ND	1.0	ug/L	1.00	12/09/2004 14:47	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	95.3	73-130	%	1.00	12/09/2004 14:47	
Toluene-d8	101.7	81-114	%	1.00	12/09/2004 14:47	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcannon

Received: 12/03/2004 13:24

Site: San Lorenzo

Prep(s):	5030B	Test(s):	8260B
Sample ID:	NIW-B1	Lab ID:	2004-12-0117 - 7
Sampled:	12/02/2004	Extracted:	12/9/2004 15:10
Matrix:	Water	QC Batch#:	2004/12/09-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/2004 15:10	
Benzene	ND	0.50	ug/L	1.00	12/09/2004 15:10	
Toluene	ND	0.50	ug/L	1.00	12/09/2004 15:10	
Ethylbenzene	ND	0.50	ug/L	1.00	12/09/2004 15:10	
Total xylenes	ND	1.0	ug/L	1.00	12/09/2004 15:10	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	98.0	73-130	%	1.00	12/09/2004 15:10	
Toluene-d8	104.3	81-114	%	1.00	12/09/2004 15:10	

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo

Prep(s): 5030B Test(s): 8260B  
Sample ID: NIW-B2 Lab ID: 2004-12-0117 - 8  
Sampled: 12/02/2004 Extracted: 12/9/2004 15:32  
Matrix: Water QC Batch#: 2004/12/09-01.62

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/09/2004 15:32	
Benzene	ND	0.50	ug/L	1.00	12/09/2004 15:32	
Toluene	ND	0.50	ug/L	1.00	12/09/2004 15:32	
Ethylbenzene	ND	0.50	ug/L	1.00	12/09/2004 15:32	
Total xylenes	ND	1.0	ug/L	1.00	12/09/2004 15:32	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	99.7	73-130	%	1.00	12/09/2004 15:32	
Toluene-d8	105.1	81-114	%	1.00	12/09/2004 15:32	

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcnonn

Received: 12/03/2004 13:24

Site: San Lorenzo

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/12/09-01.62-024

Water

Test(s): 8260B

QC Batch # 2004/12/09-01.62

Date Extracted: 12/09/2004 09:24

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/09/2004 09:24	
Benzene	ND	0.5	ug/L	12/09/2004 09:24	
Toluene	ND	0.5	ug/L	12/09/2004 09:24	
Ethylbenzene	ND	0.5	ug/L	12/09/2004 09:24	
Total xylenes	ND	1.0	ug/L	12/09/2004 09:24	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	95.2	73-130	%	12/09/2004 09:24	
Toluene-d8	100.0	81-114	%	12/09/2004 09:24	

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**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/12/10-01.62-050

Water

Test(s): 8260B

QC Batch # 2004/12/10-01.62

Date Extracted: 12/10/2004 07:50

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/10/2004 07:50	
Benzene	ND	0.5	ug/L	12/10/2004 07:50	
Toluene	ND	0.5	ug/L	12/10/2004 07:50	
Ethylbenzene	ND	0.5	ug/L	12/10/2004 07:50	
Total xylenes	ND	1.0	ug/L	12/10/2004 07:50	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	102.8	73-130	%	12/10/2004 07:50	
Toluene-d8	104.8	81-114	%	12/10/2004 07:50	

Severn Trent Laboratories, Inc.

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12/13/2004 08:37

Page 11 of 16

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcnnon

Received: 12/03/2004 13:24

Site: San Lorenzo

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike

Water

QC Batch # 2004/12/09-01.62

LCS 2004/12/09-01.62-001

Extracted: 12/09/2004

Analyzed: 12/09/2004 09:01

LCSD

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	24.4		25.0	97.6			69-129	20		
Toluene	24.0		25.0	96.0			70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	468		500	93.6			73-130			
Toluene-d8	514		500	102.8			81-114			

Severn Trent Laboratories, Inc.

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Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

12/13/2004 08:37

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcnnon

Received: 12/03/2004 13:24

Site: San Lorenzo

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike**

**Water**

**QC Batch # 2004/12/10-01.62**

LCS 2004/12/10-01.62-028

Extracted: 12/10/2004

Analyzed: 12/10/2004 07:28

LCSD

Compound	Conc. ug/L		Exp. Conc.	Recovery %		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	21.3		25.0	85.2			69-129	20		
Toluene	20.9		25.0	83.6			70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	494		500	98.8			73-130			
Toluene-d8	515		500	103.0			81-114			

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

12/13/2004 08:37

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohcnnon

Received: 12/03/2004 13:24

Site: San Lorenzo

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/12/09-01.62**

MS/MSD

Lab ID: 2004-12-0155 - 004

MS: 2004/12/09-01.62-026

Extracted: 12/09/2004

Analyzed: 12/09/2004 11:26

Dilution: 1.00

MSD: 2004/12/09-01.62-048

Extracted: 12/09/2004

Analyzed: 12/09/2004 11:48

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level ug/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	26.3	26.6	1.59	25.0	98.8	100.0	1.2	69-129	20		
Toluene	31.5	32.8	8.27	25.0	92.9	98.1	5.4	70-130	20		
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	493	510		500	98.6	102.0		73-130			
Toluene-d8	529	526		500	105.8	105.2		81-114			

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

12/13/2004 08:37



**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-000-15  
Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/12/10-01.62**

MS/MSD

Lab ID: 2004-12-0228 - 001

MS: 2004/12/10-01.62-007

Extracted: 12/10/2004

Analyzed: 12/10/2004 09:07

Dilution: 1.00

MSD: 2004/12/10-01.62-029

Extracted: 12/10/2004

Analyzed: 12/10/2004 09:29

Dilution: 1.00

Compound	Conc. ug/L			Spk. Level	Recovery %			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	24.4	25.0	ND	25.0	97.6	100.0	2.4	69-129	20		
Toluene	25.8	25.2	0.538	25.0	101.0	98.6	2.4	70-130	20		
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	448	453		500	89.6	90.6		73-130			
Toluene-d8	522	520		500	104.4	104.0		81-114			

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

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12/13/2004 08:37

Page 15 of 16

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

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111 Deerwood Road, Ste 195  
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Bohannon

Received: 12/03/2004 13:24

Site: San Lorenzo

---

**Legend and Notes**

---

**Analysis Flag**

L2

Reporting limits were raised due to high level of analyte present in the sample.

**Result Flag**

Q6

The concentration reported reflect(s) individual or discrete unidentified peaks not matching a typical fuel pattern.

STL Chicago  
2417 Bond Street  
University Park, IL 60466

Tel: 708 534 5200 Fax: 708 534 5211  
www.stl-inc.com

SEVERN TRENT LABORATORIES  
ANALYTICAL REPORT

JOB NUMBER: 232511

Prepared For:

Severn Trent Laboratories  
1220 Quarry Lane  
Pleasanton, CA 94566-4756

Project: STL San Francisco

Attention: Afsaneh Salimpour

Date: 12/13/2004

Bonnie Stadelmann  
Signature

Name: Bonnie M. Stadelmann  
Title: Project Manager  
E Mail: bstadelmann@stl-inc.com

12/13/04  
Date

STL Chicago  
2417 Bond Street  
University Park, IL 60466

PHONE: (708) 534-5200  
FAX: (708) 534-5211

This Report Contains ( 11 ) Pages

STL Chicago is part of Severn Trent Laboratories, Inc.

SAMPLE INFORMATION  
Date: 12/13/2004

Job Number.: 232511  
Customer...: Severn Trent Laboratories  
Attn.....: Afsaneh Salimpour  
Project Number.....: 20002032  
Customer Project ID....: 2004-12-0117  
Project Description....: STL San Francisco

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
232511-1	NIW-A1	Water	12/02/2004	12:00	12/07/2004	10:00
232511-2	NIW-A2	Water	12/02/2004	12:00	12/07/2004	10:00
232511-3	NIW-B1	Water	12/02/2004	12:00	12/07/2004	10:00
232511-4	NIW-B2	Water	12/02/2004	12:00	12/07/2004	10:00

LABORATORY TEST RESULTS

Job Number: 232511

Date: 12/13/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-12-0117

ATTN: Afsaneh Salimpour

Customer Sample ID: NIW-A1  
 Date Sampled.....: 12/02/2004  
 Time Sampled.....: 12:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 232511-1  
 Date Received.....: 12/07/2004  
 Time Received.....: 10:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4), as N	200	20	mg/L	12/09/04	jmk
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	260	40	mg/L	12/09/04	mtb

\* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 232511

Date: 12/13/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-12-0117

ATTN: Afsaneh Salimpour

Customer Sample ID: NIW-AZ  
 Date Sampled.....: 12/02/2004  
 Time Sampled.....: 12:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 232511-2  
 Date Received.....: 12/07/2004  
 Time Received.....: 10:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4), as N	100	10	mg/L	12/09/04	jmk
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	270	40	mg/L	12/09/04	mtb

\* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 232511

Date: 12/13/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-12-0117

ATTN: Afsaneh Salimpour

Customer Sample ID: NIW-B1  
 Date Sampled.....: 12/02/2004  
 Time Sampled.....: 12:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 232511-3  
 Date Received.....: 12/07/2004  
 Time Received.....: 10:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4), as N	77	10	mg/L	12/09/04	jmk
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	94	10	mg/L	12/09/04	mtb

\* In Description = Dry Wgt.

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LABORATORY TEST RESULTS

Job Number: 232511

Date: 12/13/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-12-0117

ATTN: Afsaneh Salimpour

Customer Sample ID: NIW-B2  
 Date Sampled.....: 12/02/2004  
 Time Sampled.....: 12:00  
 Sample Matrix.....: Water

Laboratory Sample ID: 232511-4  
 Date Received.....: 12/07/2004  
 Time Received.....: 10:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
350.2	Nitrogen, Ammonia (Dist./Nessler.) Ammonia(NH3+NH4), as N	16	1.0	mg/L	12/09/04	jmk
351.3	Nitrogen, Total Kjeldahl Nitrogen, Total Kjeldahl as N (TKN)	17	2.0	mg/L	12/09/04	mtb

\* In Description = Dry Wgt.



## LABORATORY CHRONICLE

Job Number: 232511

Date: 12/13/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-12-0117

ATTN: Afsaneh Salimpour

Lab ID: 232511-1	Client ID: NIW-A1	Date Recvd: 12/07/2004	Sample Date: 12/02/2004				
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	136662	136662		12/09/2004 1244	100
351.3	Nitrogen, Total Kjeldahl	1	136665	136665		12/09/2004 1112	100
PKG INO (WC)	PKG INO (WET CHEMISTRY)	1					
Lab ID: 232511-2	Client ID: NIW-A2	Date Recvd: 12/07/2004	Sample Date: 12/02/2004				
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	136662	136662		12/09/2004 1245	50
351.3	Nitrogen, Total Kjeldahl	1	136665	136665		12/09/2004 1113	100
Lab ID: 232511-3	Client ID: NIW-B1	Date Recvd: 12/07/2004	Sample Date: 12/02/2004				
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	136662	136662		12/09/2004 1245	50
351.3	Nitrogen, Total Kjeldahl	1	136665	136665		12/09/2004 1114	25
Lab ID: 232511-4	Client ID: NIW-B2	Date Recvd: 12/07/2004	Sample Date: 12/02/2004				
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
350.2	Nitrogen, Ammonia (Dist./Nessler.)	1	136662	136662		12/09/2004 1246	5
351.3	Nitrogen, Total Kjeldahl	1	136665	136665		12/09/2004 1115	5

Job Number.: 232511

QUALITY CONTROL RESULTS

Report Date.: 12/13/2004

CUSTOMER: Severn Trent Laboratories

PROJECT: 2004-12-0117

ATTN: Afsaneh Salimpour

Test Method.: 350.2 Batch.: 136662 Analyst.: jmk  
 Method Description.: Nitrogen, Ammonia (Dist./Nessler.) Equipment Code.: SPEC1 Test Code.: NH3  
 Parameter.: Ammonia(NH3+NH4), as N

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	136662-004		mg/L	0.13000 U							12/09/2004	1242
LCS	136662-005	I04HSTTK2	mg/L	2.32400		2.50000	0.13000 U	93	%	80-120	12/09/2004	1243

Test Method.: 351.5 Batch.: 136665 Analyst.: mtb  
 Method Description.: Nitrogen, Total Kjeldahl Equipment Code.: SPEC1 Test Code.: TKN  
 Parameter.: Nitrogen, Total Kjeldahl, as N (TKN)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
MB	136665-004		mg/L	0.18000 U							12/09/2004	1108
LCS	136665-005	I04HSTTK2	mg/L	2.16100		2.50000	0.18000 U	86	%	80-120	12/09/2004	1110
MS	232511-4	I04HSTTK2	mg/L	18.57000		12.50000	17.08000	60	4 %	75-125	12/09/2004	1117
MSD	232511-4	I04HSTTK2	mg/L	18.11500	18.57000	12.50000	17.08000	41	4 %	75-125	12/09/2004	1118
								37.6	* R	20		

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/13/2004

REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Soil, sediment and sludge sample results are reported on a "dry weight" basis except when analyzed for landfill disposal or incineration parameters. All other solid matrix samples are reported on an "as received" basis unless noted differently.
- 3) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 4) The test results for the noted analytical method(s) meet the requirements of NELAP, Lab Cert. ID# 100201
- 5) According to 40CFR Part 136.3, pH, Chlorine Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.

Glossary of flags, qualifiers and abbreviations (any number of which may appear in the report)

Inorganic Qualifiers (Q-Column)

- U Analyte was not detected at or above the stated limit.
- < Not detected at or above the reporting limit.
- J Result is less than the RL, but greater than or equal to the method detection limit.
- B Result is less than the CRDL/RL, but greater than or equal to the IDL/MDL.
- \$ Result was determined by the Method of Standard Additions.
- F AFCEE: Result is less than the RL, but greater than or equal to the method detection limit.

Inorganic Flags (Flag Column)

- ICV,CCV,ICB,CCB,ISA,ISB,CRI,CRA,MRL: Instrument related QC exceed the upper or lower control limits.
- \* LCS, LCD, MD: Batch QC exceeds the upper or lower control limits.
- + MSA correlation coefficient is less than 0.995.
- 4 MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
- E SD: Serial dilution exceeds the control limits.
- H MB, EB1, EB2, EB3: Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.
- N MS, MSD: Spike recovery exceeds the upper or lower control limits.
- W AS(GFAA) Post-digestion spike was outside 85-115% control limits.

Organic Qualifiers (Q - Column)

- U Analyte was not detected at or above the stated limit.
- ND Compound not detected.
- J Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
- Q Result was qualitatively confirmed, but not quantified.
- C Pesticide identification was confirmed by GC/MS.
- Y The chromatographic response resembles a typical fuel pattern.
- Z The chromatographic response does not resemble a typical fuel pattern.
- E Result exceeded calibration range, secondary dilution required.
- F AFCEE:Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)

Organic Flags (Flags Column)

- B MB: Batch QC is greater than reporting limit.
- \* LCS, LCD, ELC, ELD, CV, MS, MSD, Surrogate: Batch QC exceeds the upper or lower control limits.
- ^ EB1, EB2, EB3, MLE: Batch QC is greater than reporting limit
- A Concentration exceeds the instrument calibration range
- a Concentration is below the method Reporting Limit (RL)
- B Compound was found in the blank and sample.
- D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
- H Alternate peak selection upon analytical review
- I Indicates the presence of an interference, recovery is not calculated.
- N Manually integrated compound.
- P The lower of the two values is reported when the % difference between the results of two GC columns is

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/13/2004

greater than 25%.

Abbreviations

AS	Post Digestion Spike (GFAA Samples - See Note 1 below)
Batch	Designation given to identify a specific extraction, digestion, preparation set, or analysis set
CAP	Capillary Column CCB Continuing Calibration Blank
CCV	Continuing Calibration Verification
CF	Confirmation analysis of original
C1	Confirmation analysis of A1 or D1
C2	Confirmation analysis of A2 or D2
C3	Confirmation analysis of A3 or D3
CRA	Low Level Standard Check - GFAA; Mercury
CR1	Low Level Standard Check - ICP
CV	Calibration Verification Standard
Dil Fac	Dilution Factor - Secondary dilution analysis
D1	Dilution 1
D2	Dilution 2
D3	Dilution 3
DLFac	Detection Limit Factor
DSH	Distilled Standard - High Level
DSL	Distilled Standard - Low Level
DSM	Distilled Standard - Medium Level
EB1	Extraction Blank 1
EB2	Extraction Blank 2
EB3	DI Blank
ELC	Method Extracted LCS
ELD	Method Extracted LCD
ICAL	Initial calibration
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
ISA	Interference Check Sample A - ICAP
ISB	Interference Check Sample B - ICAP
Job No.	The first six digits of the sample ID which refers to a specific client, project and sample group
	Lab ID An 8 number unique laboratory identification
LCD	Laboratory Control Standard Duplicate
LCS	Laboratory Control Standard with reagent grade water or a matrix free from the analyte of interest
MB	Method Blank or (PB) Preparation Blank
MD	Method Duplicate
MDL	Method Detection Limit
MLE	Medium Level Extraction Blank
MRL	Method Reporting Limit Standard
MSA	Method of Standard Additions
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not Detected
PREPF	Preparation factor used by the Laboratory's Information Management System (LIMS)
PDS	Post Digestion Spike (ICAP)
RA	Re-analysis of original
A1	Re-analysis of D1
A2	Re-analysis of D2
A3	Re-analysis of D3
RD	Re-extraction of dilution
RE	Re-extraction of original
RC	Re-extraction Confirmation
RL	Reporting Limit
RPD	Relative Percent Difference of duplicate (unrounded) analyses
RRF	Relative Response Factor
RT	Retention Time

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/13/2004

RTW Retention Time Window Sample ID A 9 digit number unique for each sample, the first six digits are referred as the job number

SCB Seeded Control Blank

SD Serial Dilution (Calculated when sample concentration exceeds 50 times the MDL)

UCB Unseeded Control Blank

SSV Second Source Verification Standard

SLCS Solid Laboratory Control Standard(LCS)

PHC pH Calibration Check LCSP pH Laboratory Control Sample

LCDP pH Laboratory Control Sample Duplicate

MDPH pH Sample Duplicate

MDFP Flashpoint Sample Duplicate

LCFP Flashpoint LCS

G1 Gelex Check Standard Range 0-1

G2 Gelex Check Standard Range 1-10

G3 Gelex Check Standard Range 10-100

G4 Gelex Check Standard Range 100-1000

Note 1: The Post Spike Designation on Batch QC for GFAA is designated with an "S" added to the current abbreviation used. EX. LCS S=LCS Post Spike (GFAA); MSS=MS Post Spike (GFAA)

Note 2: The MD calculates an absolute difference (A) when the sample concentration is less than 5 times the reporting limit. The control limit is represented as +/- the RL.

232511

Date Shipped: 12/4/2004

2004-12-0117 - 1



Chain of Custody

From: STL San Francisco (CL)
1220 Quarry Lane
Pleasanton, CA 94566-4756

To: STL Chicago
2417 Bond Street
University Park, IL 60466

Project Manager: Afsaneh Salimpour
Phone: (925) 484-1919
Fax: (925) 484-1096
Email: asalimpour@stl-inc.com

Phone: (708) 534-5200
Fax: (708) 534-5211
Contact: Bonnie Stadelmann
Phone: (708) 534-5200
Ext: 154

CL Submission #: 2004-12-0117
CL PO #:

Project #: 98360-000-15
Project Name: Bohannon

Table with columns: Sample ID, Analysis, Sampled, Matrix, Method, TAT. Rows include NIW-A1, NIW-A2, NIW-B1, NIW-B2 with subcontracts for Ammonia and Total Kjeldahl Nitrogen.

PLEASE INCLUDE QC WITH FAXED AND HARD-COPY RESULTS

Form with six sections: RELINQUISHED BY and RECEIVED BY for three different parties, each with fields for Signature, Time, Printed Name, Date, and Company.



# Engineering and Fire Investigations

## CHAIN OF CUSTODY 2004-12-0117

Page 1 of 1

Lab: STL

TAT: S-dec

### Report results to:

Name Mark Williams  
 Company Engineering and Fire Investigation  
 Mailing Address 111 Deerwood Road, Suite 195  
 City, State, Zip San Ramon, California 94583  
 Telephone No. (925) 820-9580  
 Fax No. (925) 820-9587  
 mark\_williams@efiglobal.com

### Project Information

Project No. 99360-000-15  
 Name Bonnann  
 Location San Lorenzo

Special instructions and/or specific regulatory requirements:  
S-dec TAT

Analyses Requested										
	8015m/8020 TPH-g + BTEX	350.2 nitrogen ammonia	351.3 nitrogen total kjeldahl							
PIW-A1	X									
PIW-A2	X									
PIW-B1	X									
PIW-B3	X									
NIW-A1	X	X	X							
NIW-A2	X	X	X							
NIW-B1	X	X	X							
NIW-B2	X	X	X							

Sample Identification	Date Sampled	Time Sampled	Matrix/Media	No. of Concs.	Sample Condition/Comments										Preservative		
PIW-A1	12/2/04		water	4													
PIW-A2	↓		↓	↓													
PIW-B1																	
PIW-B3																	
NIW-A1						6											
NIW-A2						X	X	X									
NIW-B1						X	X	X									
NIW-B2						X	X	X									

Collected by: Mark Williams Date/Time 12/2/04 Collector's Signature: [Signature] Date/Time 12/2/04  
 Relinquished by: Mark Williams Date/Time 12/2/04 1:24pm Received by: Jean Mulder Date/Time 12-03-04 1:324  
 Relinquished by: \_\_\_\_\_ Date/Time \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Method of Shipment: \_\_\_\_\_ Sample Condition on Rcpt: Temp. 3°

STL San Francisco

### Sample Receipt Checklist

Submission #: 2004- 12 - 0117

Checklist completed by: (initials) JM Date: 12/04/04

Courier name:  STL San Francisco  Client \_\_\_\_\_

Custody seals intact on shipping container/samples Yes \_\_\_ No \_\_\_ Not Present ✓

Chain of custody present? Yes ✓ No \_\_\_

Chain of custody signed when relinquished and received? Yes ✓ No \_\_\_

Chain of custody agrees with sample labels? Yes ✓ No \_\_\_

Samples in proper container/bottle? Yes ✓ No \_\_\_

Sample containers intact? Yes ✓ No \_\_\_

Sufficient sample volume for indicated test? Yes ✓ No \_\_\_

All samples received within holding time? Yes ✓ No \_\_\_

Container/Temp: Blank temperature in compliance ( $4^{\circ}C \pm 2$ )? Temp: 3 °C Yes ✓ No \_\_\_

Potential reason for > 6°C - Ice melted  Ice in bags  Not enough ice  Not enough blue ice  Samples in boxes

Sampled < 4hr. ago?  Ice not required (e.g. air or bulk sample)  Ice Present Yes ✓ No \_\_\_

Water - VOA vials have zero headspace? No VOA vials submitted \_\_\_ Yes ✓ No \_\_\_

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small - O), M (medium - O) or L (large - O))

Water - pH acceptable upon receipt?  Yes  No

pH adjusted- Preservative used:  HNO<sub>3</sub>  HCl  H<sub>2</sub>SO<sub>4</sub>  NaOH  ZnOAc - Lot #(s) \_\_\_\_\_

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/04 Client contacted:  Yes  No

Summary of discussion: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Corrective Action (per PM/Client): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**Engineering and Fire Investigations**

December 20, 2004

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Attn.: Chris Maxwell

Dear Mr. Maxwell,

Attached is our report for your samples received on 12/15/2004 11:20  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after  
01/29/2005 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions,  
please call me at (925) 484-1919.

You can also contact me via email. My email address is: [asalimpour@stl-inc.com](mailto:asalimpour@stl-inc.com)

Sincerely,



Afsaneh Salimpour  
Project Manager

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Chris Maxwell

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-6187 Fax: (925) 820-9587

Project:

Received: 12/15/2004 11:20

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
PIW-A3	12/14/2004 16:00	Water	1
POBS-A1	12/14/2004 15:30	Water	2
MW-3	12/14/2004 15:45	Water	3

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

12/20/2004 14:33

Page 1 of 11

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Chris Maxwell

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-6187 Fax: (925) 820-9587

Project:

Received: 12/15/2004 11:20

Prep(s): 5030B Test(s): 8260B  
 Sample ID: PIW-A3 Lab ID: 2004-12-0545 - 1  
 Sampled: 12/14/2004 16:00 Extracted: 12/19/2004 14:28  
 Matrix: Water QC Batch#: 2004/12/19-01.66  
 Analysis Flag: L2 ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	1500	100	ug/L	2.00	12/19/2004 14:28	
Benzene	220	1.0	ug/L	2.00	12/19/2004 14:28	
Toluene	28	1.0	ug/L	2.00	12/19/2004 14:28	
Ethylbenzene	55	1.0	ug/L	2.00	12/19/2004 14:28	
Total xylenes	99	2.0	ug/L	2.00	12/19/2004 14:28	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	96.0	73-130	%	2.00	12/19/2004 14:28	
Toluene-d8	81.2	81-114	%	2.00	12/19/2004 14:28	

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12/20/2004 14:33

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Chris Maxwell

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-6187 Fax: (925) 820-9587

Project:

Received: 12/15/2004 11:20

Prep(s): 5030B Test(s): 8260B  
Sample ID: **POBS-A1** Lab ID: 2004-12-0545 - 2  
Sampled: 12/14/2004 15:30 Extracted: 12/20/2004 12:55  
Matrix: Water QC Batch#: 2004/12/20-01.68  
Analysis Flag: L2 ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	13000	1300	ug/L	25.00	12/20/2004 12:55	
Benzene	2700	13	ug/L	25.00	12/20/2004 12:55	
Toluene	200	13	ug/L	25.00	12/20/2004 12:55	
Ethylbenzene	220	13	ug/L	25.00	12/20/2004 12:55	
Total xylenes	510	25	ug/L	25.00	12/20/2004 12:55	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	87.2	73-130	%	25.00	12/20/2004 12:55	
Toluene-d8	86.9	81-114	%	25.00	12/20/2004 12:55	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Chris Maxwell

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-6187 Fax: (925) 820-9587

Project:

Received: 12/15/2004 11:20

Prep(s): 5030B Test(s): 8260B  
Sample ID: MW-3 Lab ID: 2004-12-0545 - 3  
Sampled: 12/14/2004 15:45 Extracted: 12/19/2004 14:50  
Matrix: Water QC Batch#: 2004/12/19-01.66  
Analysis Flag: L2 ( See Legend and Note Section )

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	15000	1000	ug/L	20.00	12/19/2004 14:50	
Benzene	3600	10	ug/L	20.00	12/19/2004 14:50	
Toluene	140	10	ug/L	20.00	12/19/2004 14:50	
Ethylbenzene	560	10	ug/L	20.00	12/19/2004 14:50	
Total xylenes	210	20	ug/L	20.00	12/19/2004 14:50	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	88.3	73-130	%	20.00	12/19/2004 14:50	
Toluene-d8	81.3	81-114	%	20.00	12/19/2004 14:50	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Chris Maxwell

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-6187 Fax: (925) 820-9587

Project:

Received: 12/15/2004 11:20

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

Method Blank

Water

QC Batch # 2004/12/19-01.66

MB: 2004/12/19-01.66-018

Date Extracted: 12/19/2004 08:18

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/19/2004 08:18	
Benzene	ND	0.5	ug/L	12/19/2004 08:18	
Toluene	ND	0.5	ug/L	12/19/2004 08:18	
Ethylbenzene	ND	0.5	ug/L	12/19/2004 08:18	
Total xylenes	ND	1.0	ug/L	12/19/2004 08:18	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	83.2	73-130	%	12/19/2004 08:18	
Toluene-d8	87.9	81-114	%	12/19/2004 08:18	

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

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Project:

Received: 12/15/2004 11:20

**Batch QC Report**

Prep(s): 5030B

Method Blank

MB: 2004/12/20-01.68-033

Water

Test(s): 8260B

QC Batch # 2004/12/20-01.68

Date Extracted: 12/20/2004 07:33

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/20/2004 07:33	
Benzene	ND	0.5	ug/L	12/20/2004 07:33	
Toluene	ND	0.5	ug/L	12/20/2004 07:33	
Ethylbenzene	ND	0.5	ug/L	12/20/2004 07:33	
Total xylenes	ND	1.0	ug/L	12/20/2004 07:33	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	89.2	73-130	%	12/20/2004 07:33	
Toluene-d8	86.8	81-114	%	12/20/2004 07:33	

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12/20/2004 14:33

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

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Project:

Received: 12/15/2004 11:20

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike

Water

QC Batch # 2004/12/19-01.66

LCS 2004/12/19-01.66-040

Extracted: 12/19/2004

Analyzed: 12/19/2004 08:40

LCSD

Compound	Conc. ug/L		Exp. Conc.	Recovery %		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	24.0		25.0	96.0			69-129	20		
Toluene	24.8		25.0	99.2			70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	411		500	82.2			73-130			
Toluene-d8	441		500	88.2			81-114			



**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Chris Maxwell

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San Ramon, CA 94583  
Phone: (925) 457-6187 Fax: (925) 820-9587

Project:

Received: 12/15/2004 11:20

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike

Water

QC Batch # 2004/12/20-01.68

LCS 2004/12/20-01.68-016

Extracted: 12/20/2004

Analyzed: 12/20/2004 07:16

LCSD

Compound	Conc. ug/L		Exp. Conc.	Recovery %		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	25.1		25.0	100.4			69-129	20		
Toluene	26.2		25.0	104.8			70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	371		500	74.2			73-130			
Toluene-d8	451		500	90.2			81-114			

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12/20/2004 14:33

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

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San Ramon, CA 94583  
Phone: (925) 457-6187 Fax: (925) 820-9587

Project:

Received: 12/15/2004 11:20

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/12/19-01.66**

MS/MSD

Lab ID: 2004-12-0409 - 004

MS: 2004/12/19-01.66-013

Extracted: 12/19/2004

Analyzed: 12/19/2004 12:13

Dilution: 1.00

MSD: 2004/12/19-01.66-035

Extracted: 12/19/2004

Analyzed: 12/19/2004 12:35

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level ug/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	30.1	26.6	ND	25.0	120.4	106.4	12.3	69-129	20		
Toluene	30.9	27.4	ND	25.0	123.6	109.6	12.0	70-130	20		
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	397	402		500	79.4	80.3		73-130			
Toluene-d8	414	421		500	82.7	84.1		81-114			

Severn Trent Laboratories, Inc.

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12/20/2004 14:33

Page 9 of 11

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Chris Maxwell

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San Ramon, CA 94583  
Phone: (925) 457-6187 Fax: (925) 820-9587

Project:

Received: 12/15/2004 11:20

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2004/12/20-01.68**

MS/MSD

Lab ID: 2004-12-0448 - 003

MS: 2004/12/20-01.68-056

Extracted: 12/20/2004

Analyzed: 12/20/2004 09:56

Dilution: 1.00

MSD: 2004/12/20-01.68-019

Extracted: 12/20/2004

Analyzed: 12/20/2004 10:19

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level ug/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	22.8	27.5	2.59	25.0	80.8	99.6	20.8	69-129	20		R4
Toluene	31.7	35.5	9.46	25.0	89.0	104.2	15.7	70-130	20		
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	384	386		500	76.8	77.2		73-130			
Toluene-d8	454	443		500	90.8	88.6		81-114			

Severn Trent Laboratories, Inc.

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12/20/2004 14:33

**Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Chris Maxwell

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San Ramon, CA 94583

Phone: (925) 457-6187 Fax: (925) 820-9587

Project:

Received: 12/15/2004 11:20

---

**Legend and Notes**

---

**Analysis Flag**

L2

Reporting limits were raised due to high level of analyte present in the sample.

**Result Flag**

R4

RPD exceeded method control limit; % recoveries within limits.



**TORRENT LABORATORIES INC.**  
 483 Sinclair Frontage Road, Milpitas, CA 95035  
 Phone: 408.263.5258 • FAX: 408.263.8293  
 www.torrentlab.com • email: analysis@torrentlab.com

STL

**CHAIN OF CUSTODY**

96600

LAB WORK ORDER NO

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

Company Name: **EPI - Chris Maxwell & Global** Location of Sampling: **Bohannon 98360-13**  
 Address: **111 Deepwood** Purpose:  
 City: **San Ramon** State: Zip Code: Special Instructions / Comments:  
 Telephone: FAX:  
 REPORT TO: **Chris Maxwell** SAMPLER: **CRM** P.O. #: EMAIL:

TURNAROUND TIME:  
 10 Working Days  3 Working Days  2 - 8 Hours  
 7 Working Days  2 Working Days  Other  
 5 Working Days  24 Hours

SAMPLE TYPE:  
 Storm Water  Other  
 Waste Water  
 Ground Water  
 Soil

REPORT FORMAT:  
 QC Level II  
 EDF  
 Excel / EDD

**ANALYSIS REQUESTED**

CAS/BTEX 8260

CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	ANALYSIS REQUESTED								TORRENT'S SAMPLE I.D.	
1. PIW-A3	12-14-04 1600	H2O	3	VOPT	X									
2. PPBS-A1	13.30		3		X									
3. MW-3	1545		3		X									
4.														
5.														
6.														
7.														
8.														
9.														
10.														

**RUSH**

6<sup>cc</sup>

1 Relinquished By: *[Signature]* Date: 12-15-04 Time: 1120 Received By: *[Signature]* Date: 12/15/04 Time: 1120  
 2 Relinquished By: Date: Time: Received By: Date: Time:

Were Samples Received in Good Condition?  Yes  NO Samples on Ice?  Yes  NO Method of Shipment Sample seals intact?  Yes  NO

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made. Page \_\_\_\_ of \_\_\_\_

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

STL San Francisco

### Sample Receipt Checklist

Submission #: 2004- 12 - 0545

Checklist completed by: (initials) JS Date: 12/15 /04

Courier name:  STL San Francisco  Client \_\_\_\_\_

Custody seals intact on shipping container/samples Yes \_\_\_ No \_\_\_ Not Present

Chain of custody present? Yes  No \_\_\_

Chain of custody signed when relinquished and received? Yes  No \_\_\_

Chain of custody agrees with sample labels? Yes  No \_\_\_

Samples in proper container/bottle? Yes  No \_\_\_

Sample containers intact? Yes  No \_\_\_

Sufficient sample volume for indicated test? Yes  No \_\_\_

All samples received within holding time? Yes  No \_\_\_

Container/Temp. Blank temperature in compliance ( $4^{\circ}\text{C} \pm 2$ )? Temp. 6 °C Yes  No \_\_\_

Potential reason for  $> 6^{\circ}\text{C}$  - Ice melted  Ice in bags  Not enough ice  Not enough blue ice  Samples in boxes

Sampled  $< 4\text{hr.}$  ago?  Ice not required (e.g. air or bulk sample)  Ice Present Yes  No \_\_\_

Water - VOA vials have zero headspace? No VOA vials submitted \_\_\_ Yes  No \_\_\_

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small -  $\text{O}$ ), M (medium -  $\text{O}$ ) or L (large -  $\text{O}$ ))

Water - pH acceptable upon receipt?  Yes  No

pH adjusted- Preservative used:   $\text{HNO}_3$    $\text{HCl}$    $\text{H}_2\text{SO}_4$    $\text{NaOH}$    $\text{ZnOAc}$  -Lot #(s) \_\_\_\_\_

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: \_\_\_\_\_  
\_\_\_\_\_

#### Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) \_\_\_\_\_ Date: \_\_\_\_\_ / \_\_\_\_\_ /04. Client contacted:  Yes  No

Summary of discussion: \_\_\_\_\_  
\_\_\_\_\_

Corrective Action (per PM/Client): \_\_\_\_\_  
\_\_\_\_\_

**Engineering and Fire Investigations**

February 11, 2005

111 Deerwood Road, Ste 195  
San Ramon, CA 94583

Attn.: Mark Williams

Project#: 98360-013

Project: Bohannon

Dear Mr. Williams,

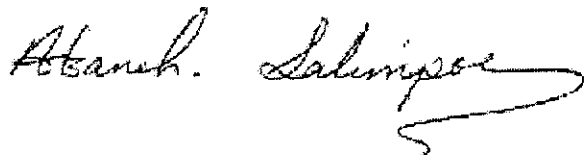
Attached is our report for your samples received on 02/03/2005 16:12  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after  
03/20/2005 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions,  
please call me at (925) 484-1919.

You can also contact me via email. My email address is: [asalimpour@stl-inc.com](mailto:asalimpour@stl-inc.com)

Sincerely,



Afsaneh Salimpour  
Project Manager

**Gas/BTEX Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-013  
Bohcnon

Received: 02/03/2005 16:12

**Samples Reported**

Sample Name	Date Sampled	Matrix	Lab #
VS-1	02/03/2005 10:44	Air	1
VS-2	02/03/2005 11:23	Air	2
VS-3	02/03/2005 14:00	Air	3
VS-4	02/03/2005 15:20	Air	4



**Gas/BTEX Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-013  
Bohannon

Received: 02/03/2005 16:12

Prep(s):	5030B	Test(s):	8260B
Sample ID:	VS-1	Lab ID:	2005-02-0065 - 1
Sampled:	02/03/2005 10:44	Extracted:	2/4/2005 15:50
Matrix:	Air	QC Batch#:	2005/02/04-1D.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	760	50	ug/L	1.00	02/04/2005 15:50	
Benzene	21	1.0	ug/L	1.00	02/04/2005 15:50	
Toluene	1.8	1.0	ug/L	1.00	02/04/2005 15:50	
Ethylbenzene	4.5	1.0	ug/L	1.00	02/04/2005 15:50	
Total xylenes	8.0	1.0	ug/L	1.00	02/04/2005 15:50	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	126.7	72-128	%	1.00	02/04/2005 15:50	
Toluene-d8	100.5	80-113	%	1.00	02/04/2005 15:50	

**Gas/BTEX Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-013  
Bohannon

Received: 02/03/2005 16:12

Prep(s): 5030B	Test(s): 8260B
Sample ID: <b>VS-2</b>	Lab ID: 2005-02-0065 - 2
Sampled: 02/03/2005 11:23	Extracted: 2/4/2005 15:33
Matrix: Air	QC Batch#: 2005/02/04-1D.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	760	50	ug/L	1.00	02/04/2005 15:33	
Benzene	16	1.0	ug/L	1.00	02/04/2005 15:33	
Toluene	1.3	1.0	ug/L	1.00	02/04/2005 15:33	
Ethylbenzene	4.5	1.0	ug/L	1.00	02/04/2005 15:33	
Total xylenes	5.8	1.0	ug/L	1.00	02/04/2005 15:33	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	125.5	72-128	%	1.00	02/04/2005 15:33	
Toluene-d8	101.1	80-113	%	1.00	02/04/2005 15:33	

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566  
Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

02/10/2005 11:03

Page 3 of 9

**Gas/BTEX Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-013  
Bohannon

Received: 02/03/2005 16:12

Prep(s): 5030B	Test(s): 8260B
Sample ID: VS-3	Lab ID: 2005-02-0065 - 3
Sampled: 02/03/2005 14:00	Extracted: 2/4/2005 14:58
Matrix: Air	QC Batch#: 2005/02/04-1D.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	170	50	ug/L	1.00	02/04/2005 14:58	
Benzene	3.3	1.0	ug/L	1.00	02/04/2005 14:58	
Toluene	ND	1.0	ug/L	1.00	02/04/2005 14:58	
Ethylbenzene	ND	1.0	ug/L	1.00	02/04/2005 14:58	
Total xylenes	2.4	1.0	ug/L	1.00	02/04/2005 14:58	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	121.5	72-128	%	1.00	02/04/2005 14:58	
Toluene-d8	99.0	80-113	%	1.00	02/04/2005 14:58	

Severn Trent Laboratories, Inc.

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02/10/2005 11:03

Page 4 of 9

**Gas/BTEX Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-013  
Bohannon

Received: 02/03/2005 16:12

Prep(s): 5030B	Test(s): 8260B
Sample ID: VS-4	Lab ID: 2005-02-0065 - 4
Sampled: 02/03/2005 15:20	Extracted: 2/4/2005 14:41
Matrix: Air	QC Batch#: 2005/02/04-1D.68

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	950	50	ug/L	1.00	02/04/2005 14:41	
Benzene	35	1.0	ug/L	1.00	02/04/2005 14:41	
Toluene	2.4	1.0	ug/L	1.00	02/04/2005 14:41	
Ethylbenzene	9.2	1.0	ug/L	1.00	02/04/2005 14:41	
Total xylenes	7.4	1.0	ug/L	1.00	02/04/2005 14:41	
<b>Surrogate(s)</b>						
1,2-Dichloroethane-d4	120.0	72-128	%	1.00	02/04/2005 14:41	
Toluene-d8	99.2	80-113	%	1.00	02/04/2005 14:41	

**Gas/BTEX Fuel Oxygenates by 8260B**

Engineering and Fire Investigations  
Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-013  
Bohannon

Received: 02/03/2005 16:12

**Batch QC Report**

Prep(s): 5030B  
Method Blank

Water

Test(s): 8260B  
QC Batch # 2005/02/04-1D.68

MB: 2005/02/04-1D.68-052

Date Extracted: 02/04/2005 08:52

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	02/04/2005 08:52	
Benzene	ND	0.5	ug/L	02/04/2005 08:52	
Toluene	ND	0.5	ug/L	02/04/2005 08:52	
Ethylbenzene	ND	0.5	ug/L	02/04/2005 08:52	
Total xylenes	ND	1.0	ug/L	02/04/2005 08:52	
<b>Surrogates(s)</b>					
1,2-Dichloroethane-d4	104.6	73-130	%	02/04/2005 08:52	
Toluene-d8	102.8	81-114	%	02/04/2005 08:52	

**Gas/BTEX Fuel Oxygenates by 8260B**

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Project: 98360-013  
Bohannon

Received: 02/03/2005 16:12

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Laboratory Control Spike**

**Water**

**QC Batch # 2005/02/04-1D.68**

LCS 2005/02/04-1D.68-014  
LCSD

Extracted: 02/04/2005

Analyzed: 02/04/2005 09:14

Compound	Conc. ug/L		Exp. Conc.	Recovery %		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	27.3		25	109.2			69-129	20		
Toluene	26.6		25	106.4			70-130	20		
<b>Surrogates(s)</b>										
1,2-Dichloroethane-d4	415		500	83.0			73-130			
Toluene-d8	511		500	102.2			81-114			

Severn Trent Laboratories, Inc.

STL San Francisco \* 1220 Quarry Lane, Pleasanton, CA 94566  
Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

02/10/2005 11:03

Page 7 of 9

**Gas/BTEX Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-013  
Bohannon

Received: 02/03/2005 16:12

**Batch QC Report**

Prep(s): 5030B

Test(s): 8260B

**Matrix Spike ( MS / MSD )**

**Water**

**QC Batch # 2005/02/04-1D.68**

MS/MSD

Lab ID: 2005-01-0758 - 002

MS: 2005/02/04-1D.68-012

Extracted: 02/04/2005

Analyzed: 02/04/2005 11:12

Dilution: 1.00

MSD: 2005/02/04-1D.68-030

Extracted: 02/04/2005

Analyzed: 02/04/2005 11:30

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level ug/L	Recovery %			Limits %		Flags	
	MS	MSD	Sample		MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	32.7	31.6	ND	25	130.8	126.4	3.4	69-129	20	M4	
Toluene	34.9	32.0	ND	25	139.6	128.0	8.7	70-130	20	M4	
<b>Surrogate(s)</b>											
1,2-Dichloroethane-d4	485	496		500	97.0	99.2		73-130			
Toluene-d8	574	524		500	114.8	104.8		81-114		S7	

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02/10/2005 11:03

**Gas/BTEX Fuel Oxygenates by 8260B**

Engineering and Fire Investigations

Attn.: Mark Williams

111 Deerwood Road, Ste 195  
San Ramon, CA 94583  
Phone: (925) 457-7384 Fax: (925) 820-9587

Project: 98360-013  
Bohcnon

Received: 02/03/2005 16:12

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**Legend and Notes**

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**Result Flag**

M4

MS/MSD spike recoveries were above acceptance limits.  
See blank spike (LCS).

S7

Surrogate recoveries higher than acceptance limits.

Severn Trent Laboratories, Inc.

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Tel 925 484 1919 Fax 925 484 1096 \* www.stl-inc.com \* CA DHS ELAP# 2496

02/10/2005 11:03

Page 9 of 9



# 2005-02-0065

**SEVERN  
TRENT**

# STL

**STL San Francisco Chain of Custody**  
 1220 Quarry Lane • Pleasanton CA 94566-4756  
 Phone: (925) 484-1919 • Fax: (925) 484-1096  
 Email: [sflogin@stl-inc.com](mailto:sflogin@stl-inc.com)

Reference #: 97998Date 2/3/05 Page 1 of 1

Report To						Analysis Request														Number of Containers					
Analysis Request						Report To																			
Attn: <u>Mark Williams</u>																									
Company: <u>EFI GLOBAL</u>																									
Address: <u>111 Deermood Rd Suite 195</u>																									
Phone: _____ Email: _____																									
Bill To: <u>Mark Williams</u>			Sampled By: <u>Mark Williams</u>																						
Attn: _____			Phone: <u>925 457-7300</u>																						
Sample ID	Date	Time	Mat rix	Pres erv.	TPH EPA - <input checked="" type="checkbox"/> 8015B <input type="checkbox"/> 8260B <input type="checkbox"/> Gas w/ <input type="checkbox"/> BTEX <input type="checkbox"/> MTBE	Purgeable Aromatics BTEX EPA - <input type="checkbox"/> 8021 <input type="checkbox"/> 8260B	TEPH EPA 8015M* <input type="checkbox"/> Silica Gel <input type="checkbox"/> Diesel <input type="checkbox"/> Motor Oil <input type="checkbox"/> Other _____	Fuel Tests EPA 8260B: <input type="checkbox"/> Gas <input type="checkbox"/> BTEX <input type="checkbox"/> Five Oxygenates <input type="checkbox"/> DCA, EDB <input type="checkbox"/> Ethanol	Purgeable Halocarbons (HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) <input type="checkbox"/> EPA 8260B <input type="checkbox"/> 824	Semivolatiles GC/MS <input type="checkbox"/> EPA 8270 <input type="checkbox"/> 825	Oil and Grease <input type="checkbox"/> Petroleum (EPA 1664) <input type="checkbox"/> Total	Pesticides <input type="checkbox"/> EPA 8081 <input type="checkbox"/> 608 <input type="checkbox"/> EPA 8082 <input type="checkbox"/> 608	PCBs	PNAs by <input type="checkbox"/> 8270 <input type="checkbox"/> 8310	CAM17 Metals (EPA 8010/7470/7471)	Metals: <input type="checkbox"/> Lead <input type="checkbox"/> LUFT <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____	Low Level Metals by EPA 200.8/6020 (ICP-MS): _____	W.E.T (STLC) TCLP <input type="checkbox"/>	Hexavalent Chromium pH (24h hold time for H <sub>2</sub> O) <input type="checkbox"/>	Spec Cond. <input type="checkbox"/> Alkalinity TSS <input type="checkbox"/> TDS <input type="checkbox"/>	Anions: <input type="checkbox"/> Cl <input type="checkbox"/> SO <sub>4</sub> <input type="checkbox"/> NO <sub>3</sub> <input type="checkbox"/> F <input type="checkbox"/> Br <input type="checkbox"/> NO <sub>2</sub> <input type="checkbox"/> PO <sub>4</sub>			
<u>VS-1</u>	<u>2/4/05</u>	<u>10:44</u>			<u>1</u>																				<u>1</u>
<u>VS-2</u>		<u>11:25</u>			<u>1</u>																				<u>1</u>
<u>VS-3</u>		<u>2:00pm</u>			<u>1</u>																				<u>1</u>
<u>VS-4</u>		<u>3:20</u>			<u>1</u>																				<u>1</u>

Project Info.		Sample Receipt		1) Relinquished by:		2) Relinquished by:		3) Relinquished by:				
Project Name: <u>Bobemman</u>		# of Containers: _____		Signature: <u>[Signature]</u> Time: <u>4:12pm</u>		Signature: _____ Time: _____		Signature: _____ Time: _____				
Project#: <u>92360-013</u>		Head Space: _____		Printed Name: <u>Mark Williams</u> Date: <u>2/3/05</u>		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____				
PO#: _____		Temp: <u>22°C</u>		Company: <u>EFI GLOBAL</u>		Company: _____		Company: _____				
Credit Card#: _____		Conforms to record: _____		Company: _____		Company: _____		Company: _____				
T A T	<u>5</u> Day	72h	48h	24h	Other: _____		1) Received by:		2) Received by:		3) Received by:	
Report: <input type="checkbox"/> Routine <input type="checkbox"/> Level 3 <input type="checkbox"/> Level 4 <input type="checkbox"/> EDD <input type="checkbox"/> State Tank Fund EDF Special Instructions / Comments: _____						Signature: <u>[Signature]</u> Time: <u>16:12</u>		Signature: _____ Time: _____		Signature: _____ Time: _____		
						Printed Name: <u>T. Bullock</u> Date: <u>2/3/05</u>		Printed Name: _____ Date: _____		Printed Name: _____ Date: _____		
						Company: <u>STL-SF</u>		Company: _____		Company: _____		

\*STL SF reports 8015M from C<sub>9</sub>-C<sub>24</sub> (industry norm). Default for 8015B is C<sub>10</sub>-C<sub>26</sub>.