

September 30, 2008

Mike W Markham  
 19231 Weld County Road 22  
 Ft Lupton, CO 80621

RE Water Quality Analytical Results for Domestic Water Well (Permit #63252)  
 Section 8 – Township 2 North – Range 65 West  
 Weld County, Colorado, Complaint No 200190138

Dear Mr Markham

On May 23, 2008, the Colorado Oil & Gas Conservation Commission (COGCC) sampled your water well and submitted the water samples for laboratory analysis. The purpose of the water sampling was to determine if natural gas drilling and production activities in your area might have impacted your water well. The water samples were delivered to Evergreen Analytical Laboratory (Evergreen) in Wheat Ridge, Colorado for analysis of organic and inorganic compounds. A separate water sample was delivered to Empact Analytical Systems, Inc (Empact) in Brighton, Colorado for gas compositional analyses. Copies of the Evergreen and Empact laboratory analytical reports are included in Attachments A and B.

The Water Quality Control Commission (WQCC) of the Colorado Department of Public Health and Environment (CDPHE) has established drinking water standards for the protection of human health. The analytical results from the water samples from your water well were compared to applicable ground water and/or drinking water standards and are summarized below. These water standards were established for public drinking water supplies.

### COMPARISON OF INORGANIC ANALYTICAL RESULTS TO STANDARDS

(Please see enclosed Evergreen Laboratory Report, Attachment A)

- Total Dissolved Solids (TDS) CDPHE has established a TDS standard for human drinking water of 500 milligrams per liter (mg/l). The standard is called the secondary maximum contaminant level (SMCL) and is based on the aesthetic quality of the water (such as taste and odor) and is intended as a guideline for public water supply systems and is not an enforceable standard. Although CDPHE does not have an agricultural standard for TDS, other agencies recommend concentrations below 2,000 mg/l for irrigation, and below 5,000 mg/l for most livestock watering. TDS concentrations are related to the presence of naturally occurring elements and chemical compounds such as chloride, sodium, potassium, calcium, magnesium, and sulfate.

**TDS was detected in the water samples from your water well at concentrations of 788 mg/l, which is greater than the CDPHE SMCL, less than the recommended maximum concentration for irrigation, and less than the recommended maximum concentration for most livestock watering.**

- Sodium (Na): Although CDPHE does not have a standard for sodium, people on salt restricted diets should be aware of the Na concentration in the water they drink. A concentration of drinking water with a concentration of sodium less than 20 mg/l is recommended by some for people on salt restricted diets or for people suffering from hypertension or heart disease. Sodium occurs naturally in the ground water in many areas at concentrations that exceed the recommended level.

**Sodium was detected in the water sample from your water well at a concentration of 287 mg/l, which is greater than the recommended level for people of salt restricted diets.**

- Fluoride (F): CDPHE has established a fluoride (F) standard for human drinking water is 4.0 mg/l. Where fluoride concentrations are in the range of 0.7 mg/l to 1.2 mg/l, health benefits such as reduced dental decay have been observed. Consumption of fluoride at concentrations of greater than 2.0 mg/l can result in mottling of teeth. Consumption of fluoride at concentrations greater than 4.0 mg/l can increase the risk of skeletal fluorosis or other adverse health effects.

**Fluoride was detected in the water sample from your water well at a concentration of 3.3 mg/l, which is less than the CDPHE public drinking water standard.**

- Chloride (Cl): The CDPHE chloride standard (SMCL) for drinking water is 250 mg/l. Chloride concentrations in excess of 250 mg/l usually produce a noticeable taste in drinking water.

**Chloride was detected in the water sample from your water well at a concentration of 73.7 mg/l, which is less than the CDPHE SMCL.**

- Sulfate (SO<sub>4</sub>): The CDPHE sulfate standard for drinking water is 250 mg/l (SMCL). Although CDPHE does not have an agricultural standard for sulfate, other agencies recommend a concentration below 1,500 mg/l for livestock watering. Waters containing high concentrations of sulfate, typically caused by the leaching of natural deposits of magnesium sulfate (Epsom salts) or sodium sulfate (Glauber's salt), may be undesirable because of their laxative effects. Sulfate occurs naturally in the ground water in many areas in Colorado at concentrations that exceed the drinking water standard.

**Sulfate was not detected in the water sample from your water well.**

- Total Nitrate (NO<sub>3</sub>) + Nitrite (NO<sub>2</sub>) as Nitrogen (N) The CDPHE total nitrate (NO<sub>3</sub>) + nitrite (NO<sub>2</sub>) as nitrogen (N) for standard for human drinking water is 10 mg/l. Nitrate and nitrite are common contaminants in ground water from agricultural sources, such as fertilizer and animal, including human, wastes. They are known to cause infant cyanosis or "blue baby disease" in humans and, at concentrations greater than 100 mg/l as nitrogen (N), may be dangerous to livestock. High concentrations of nitrate and nitrite in ground water are known to occur in agricultural areas in Colorado.

**Total nitrate/nitrite, as N was not detected in the water sample from your water well.**

- Iron (Fe) The CDPHE standard for human drinking water for iron is 0.3 mg/l (SMCL). Small amounts of iron are common in ground water. Iron may produce a brownish-red color in laundered clothing, can leave reddish stains on fixtures, and impart a metallic taste to beverages and food made with it. After a period of time iron deposits can build up in pressure tanks, water heaters, and pipelines, reducing the effective flow rate and efficiency of the water supply.

**Iron was detected in the water sample from your water well at a concentration of 18.1 mg/l, which is greater than the CDPHE SMCL water standard.**

- Manganese (Mn) The CDPHE standard for human drinking water for manganese is 0.05 mg/l (SMCL) and the agricultural standard is 0.2 mg/l. Manganese concentrations in excess of 0.05 mg/l may cause the water to leave a black stain and/or have a bitter metallic taste.

**Manganese was detected in the water sample from your water well at a concentration of 0.299 mg/l, which is greater than the CDPHE SMCL water standard and greater than the agricultural standard.**

- Selenium (Se) The CDPHE selenium standard for human drinking water is 0.05 mg/l and the agricultural standard is 0.02 mg/l. Excessive selenium (Se) (concentrations greater than 0.05 mg/l) can cause loss of hair and/or fingernails as well as adverse effects on the central nervous system. Selenium (Se) occurs naturally in the ground water in many areas of Colorado at concentrations that exceed the drinking water standard.

**Selenium was not detected in the sample from your water well.**

- Alkalinity, Bromide (Br), Calcium (Ca), Potassium (K), Magnesium (Mg), Bicarbonate (HCO<sub>3</sub>) and Carbonate (CO<sub>3</sub>) were also tested for in your water. There are no standards from CDPHE for these parameters. In addition, the COGCC also collected samples for metals and the Table 1 (attached) presents the analytical laboratory results. Please note that Primary standard (P) is the CDPHE Human Health Standard and the Secondary standard (S) is the CDPHE secondary maximum contaminant level (SMCL).

**Table 1**  
**MARKHAM WATER WELL**

| METAL/INORGANIC              | May 23, 2008<br>Sample Concentration<br>(in Milligrams per liter [mg/l]) | CDPHE Water<br>Quality Standard<br>(P – Primary<br>S-Secondary)<br>(in Milligrams per<br>liter [mg/l]) |
|------------------------------|--|--|
| Alkalinity (Total)           | 579  | NS   |
| Bicarbonate                  | 542  | NS   |
| Carbonate                    | 37.0   | NS   |
| Bromide (Br)                 | 0.64   | NS   |
| Calcium (Ca)                 | 6.15   | NS   |
| Chloride (Cl)                | 73.7   | 250 (S)  |
| Fluoride (F)                 | 3.3  | 4.0 (P)  |
| Iron (Fe)                    | 18.1   | 0.3 (S)  |
| Potassium (K)                | 2.88   | NS   |
| Manganese (Mn)               | 0.299  | 0.05 (S)   |
| Magnesium (Mg)               | 3.07   | NS   |
| Nitrate (NO <sub>3</sub> -N) | ND   | 10.0 (P)   |
| Nitrite (NO <sub>2</sub> -N) | ND   | 1.0 (P)  |
| pH                           | 8.64 pH units  | NS   |
| Selenium (Se)                | ND   | 0.05 (P)   |
| Sodium (Na)                  | 287  | NS   |
| Specific Conductance         | 1200 $\mu$ mhos/cm   | NS   |
| Sulfate (SO <sub>4</sub> )   | ND   | 250 (S)  |
| Total Dissolved Solids       | 788  | 500 (S)  |

NS – no standard

ND – not detected in the sample

**ORGANIC COMPOUNDS ASSOCIATED WITH PETROLEUM HYDROCARBONS**  
(please see Attachment A)

- Benzene CDPHE's basic ground water standard for benzene is 5 micrograms per liter ( $\mu$ g/l)  
**Benzene was not detected in the sample from your water well.**
- Toluene CDPHE's basic ground water standard for toluene is 1,000  $\mu$ g/l **Toluene was not detected in the sample from your water well.**
- Ethylbenzene CDPHE's basic ground water standard for ethylbenzene is 680  $\mu$ g/l  
**Ethylbenzene was not detected in the sample from your water well.**
- Total Xylenes (sum of m,p, and o-xylene) CDPHE's basic ground water standard for total xylenes is 10,000  $\mu$ g/l **Total xylenes were not detected in the sample from your water well.**

## METHANE GAS CONCENTRATION

- **Methane was detected in the sample from your water well at a concentration of 14 mg/l.**

Methane gas alone is physiologically inert and non-toxic to humans. Normal breath exhalation contains 1 to 99 ppm of methane (parts per million [ppm] is the same units as mg/l). The presence of methane in drinking water does not present a known health hazard to humans or other animals via ingestion, however, methane in domestic water supplies can be associated with undesirable and potentially serious side effects. Methane gas dissolved in water "exsolves" when exposed to the atmosphere and dissipates rapidly because it is lighter than air. This is often responsible for the "fizzing" observed in water wells that may contain methane gas. If the methane occurs at a high enough concentration and if it is allowed to accumulate in a confined space, such as a well pit, crawl space, closet, etc., an explosion hazard can be established. In addition, if methane concentrations in well water are high, then pockets of free gas form within the water and cause the well pump to cavitate and no longer bring water to the surface.

Methane gas is common in water wells in Colorado. It occurs naturally and the source of the methane is commonly from one or more of the sources listed below.

1. Methane is commonly found as a gas in coal or black shale seams in the subsurface.
2. Methane is commonly found as a byproduct of the decay of organic matter and the presence of bacteria in water wells can provide the conditions favorable for the production of methane either from the activity or decay of bacteria.

**As the result of extensive testing for methane gas in water wells throughout Colorado, concentrations of methane gas below 2 mg/l are considered harmless, with concern for possible hazards from the methane increasing at concentration levels in well water at 7 mg/l and higher.**

## GAS COMPOSITION

The gas produced from the oil/gas wells around the subject water well is "thermogenic" methane. Thermogenic methane gas is formed by the thermal breakdown of organic material in rocks resulting from high temperatures created by deep burial. Biogenic methane gas occurs in most near-surface environments and is a principal product of the decomposition of buried organic material. In Weld County many of the coal zones in the Laramie-Fox Hills aquifer contain biogenic methane gas.

Laboratory results of the water sample collected from your water well indicated that methane (C1) and ethane (C2) were detected (Attachment B). Typically, the naturally occurring biogenic gas in the Laramie-Fox Hills aquifer contains only C1 and C2. The presence of propane (C3), iso-butane (iC4), normal butane (nC4), iso-pentane (iC5), normal pentane (nC5), and hexane (C6) would indicate a potential impact from thermogenic gas originating from deeper gas producing formations.

Since these constituents were not identified in the gas sample, it is unlikely that the dissolved methane in your well water has a thermogenic origin

### **BACTERIA OCCURENCE**

COGCC also collected samples of your well water for the determination of the presence of bacteria using the Biological Activity Reaction Test (**BART™**) for the following, Iron Related Bacteria (IRB), Sulfate Reducing Bacteria (SRB), and Slime Forming Bacteria (SFB) In addition, an estimation of the size of the population and/or the rate at which they can metabolize and/or grow to generate an observable change or reaction was made Your well water showed the presence of the IRB and SRB SFB were absent in your well water (Attachment C)

**Iron Related Bacteria:** Although not usually harmful, iron related bacteria (IRB) can become a nuisance by plugging the well pump, causing red staining on plumbing fixtures and laundered clothing, building up red, slimy accumulations on any surface the water touches, and causing what may appear to be a oily sheen on standing water In rare cases, IRB may cause sickness

- **Aggressive populations of IRB bacteria were detected in the water sample from your well.**

**Sulfate Reducing Bacteria:** Sulfate reducing bacteria (SRB) are serious nuisance organisms in water since they can cause severe taste and odor problems These bacteria reduce sulfate that occurs naturally in the water and generate hydrogen sulfide (H<sub>2</sub>S) gas as they grow. In turn, the hydrogen sulfide (H<sub>2</sub>S) gas is a nuisance because it smells like rotten eggs, it initiates corrosion on metal surfaces, and it reacts with dissolved metals such as iron to generate black sulfide deposits

- **SRB bacteria were detected in the water sample from your well.**

**Slime Forming Bacteria:** Although not usually harmful, Slime Forming Bacteria (SFB) also can become a nuisance by plugging well pumps and causing slimy accumulations on plumbing fixtures and standing water Slimes often are gelatinous in nature and may range in color from white, to red, to black As slime bacteria mats grow they create an environment in which complex associations of other strains of bacteria can develop

- **SFB bacteria were not detected in the water sample from your well.**

### **WATER WELL DISCUSSION/RECORDS REVIEW**

Colorado Division of Water Resources records indicate that your well is 530 feet deep and is completed in the north central part of the Laramie-Fox Hills aquifer. Water from the well is a sodium bicarbonate type of water typical of the central and north central regions of this aquifer (*Chapter 6, 6.1 Denver Basin in Ground Water Atlas of Colorado, Colorado Geological Survey*)

*Special Publication 53, 2003*) We have reviewed water well drilling logs for several water wells (including your water well) in your immediate area. Many of these wells are completed in the Laramie/Fox Hills aquifer and these wells have water chemistry similar to your well

## **CONCLUSION**

The water sample collected from your water well did not exceed the CDPHE primary drinking water standards for the constituents analyzed and the secondary drinking water standards were exceeded for iron, manganese and Total Dissolved Solids

There are no indications of any oil & gas related impacts to your water well

Dissolved methane in the well water appears to be biogenic in origin. The gas exists in sufficiently high concentrations that an explosion hazard could exist if the methane were able to accumulate in a confined space. Care should be taken to ventilate confined spaces where well water is used.

The positive iron related bacteria and sulfate reducing bacteria result from your water well indicates that treating the well water for bacteria may help to improve the water quality. Included in Attachment D is a COGCC water well booklet entitled, "*How Well Do You Know Your Water Well?*" This booklet contains useful information about water wells including a water treatment decision guide, ways to maintain your well, and chlorination techniques for disinfecting your well if you have bacterial contamination. This booklet is also available on the COGCC website at <http://cogcc.state.co.us>

If you have any questions or would like to discuss these matters further, please contact me at via e-mail ([john.axelson@state.co.us](mailto:john.axelson@state.co.us)) or by phone at (303) 637-7178

Respectfully,



John Axelson, P G  
Environmental Protection Specialist, Northeast Region  
Colorado Oil and Gas Conservation Commission

Enclosure(s)

- Attachment A – Evergreen Laboratory Analytical Report
- Attachment B – Empact Laboratory Analytical Report
- Attachment C - Biological Activity Reaction Test Results
- Attachment D - Booklet - *“How Well Do You Know Your Water Well?”*

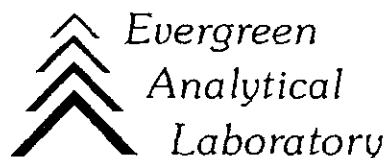
cc Dave Neslin – COGCC w/o enclosures  
Debbie Baldwin – COGCC w/o enclosures

**REFERENCE**

Ground Water Atlas of Colorado, Special Publication 53, 2003 Colorado Geological Survey,  
Department of Natural Resources, Denver, Colorado



**ATTACHMENT A**



June 07, 2008

John Axelson  
Colorado Oil & Gas Conservation Comm  
9203 E 155th Dr  
Brighton, CO 80602

Lab Work Order 08-3556  
Client Project ID Markham WW

Dear John Axelson

Enclosed are the analytical results for the samples shown in the Laboratory Work Order Summary. The invoice is included with this report or has been mailed to another party as indicated on the chain of custody.


The enclosed data for testing performed at Evergreen Analytical Laboratory (EAL) have been reviewed for quality assurance. A case narrative is included to describe any anomalies associated with the samples or data.

EAL will dispose of all samples one month from the date of this letter. If you want samples returned, please advise us by mail or fax as soon as possible.

A copy of this project report and supporting data will be retained for a period of five years unless we are otherwise advised by you. A document retrieval charge will apply.

Thank you for using the services of Evergreen Analytical. If you have any questions concerning the analytical data, please contact me. Please direct other questions to Client Services.

Sincerely,

  
Carl Smits / Kaprie Hollman  
Quality Assurance

## WORK ORDER Summary

Evergreen Analytical, Inc.

08-3556

Rpt To John Axelson  
 Colorado Oil & Gas Conservation  
 Comm  
 9203 E 155th Dr  
 Brighton, CO 80602  
 (303) 637-7178

Email To john.axelson@state.co.us

5/23/2008 3:30:33 PM

Client Project ID Markham WW

QC Level LEVEL I+

Comments Report EDD and PDF

| Sample ID   | Client Sample ID | Matrix      | Collection Date | Date Received | Test Code      | Test Name                          | Hold                     | MS                       | Date Due | Hold Time |
|-------------|------------------|-------------|-----------------|---------------|----------------|------------------------------------|--------------------------|--------------------------|----------|-----------|
| 08-3556-01A | Markham WW       | Groundwater | 5/23/08 1000    | 5/23/08       | 8021_W *       | 8021 BTEX                          | <input type="checkbox"/> | <input type="checkbox"/> | 5/29/08  | 6/06/08   |
| 08-3556-01B | Markham WW       | Groundwater | 5/23/08 1000    | 5/23/08       | 200 7_T *      | 200 7 Total Metals                 | <input type="checkbox"/> | <input type="checkbox"/> | 6/09/08  | 11/19/08  |
| 08-3556-01B | Markham WW       | Groundwater | 5/23/08 1000    | 5/23/08       | 200 8_TR *     | 200 8 Total Metals                 | <input type="checkbox"/> | <input type="checkbox"/> | 6/09/08  | 11/19/08  |
| 08-3556-01C | Markham WW       | Groundwater | 5/23/08 1000    | 5/23/08       | ANIONS_NonDW * | 300 0 Anions by IC                 | <input type="checkbox"/> | <input type="checkbox"/> | 6/09/08  | 5/25/08   |
| 08-3556-01C | Markham WW       | Groundwater | 5/23/08 1000    | 5/23/08       | C/A_BAL        | Cation / Anion Balance calculation | <input type="checkbox"/> | <input type="checkbox"/> | 6/09/08  |           |
| 08-3556-01D | Markham WW       | Groundwater | 5/23/08 1000    | 5/23/08       | MEEP_W *       | RSK175M Methane                    | <input type="checkbox"/> | <input type="checkbox"/> | 6/09/08  | 6/06/08   |
| 08-3556-01E | Markham WW       | Groundwater | 5/23/08 1000    | 5/23/08       | F_W            | Fluoride                           | <input type="checkbox"/> | <input type="checkbox"/> | 6/09/08  | 6/20/08   |
| 08-3556-01F | Markham WW       | Groundwater | 5/23/08 1000    | 5/23/08       | ALK_WGRP *     | Alkalinity                         | <input type="checkbox"/> | <input type="checkbox"/> | 6/09/08  | 6/06/08   |
| 08-3556-01F | Markham WW       | Groundwater | 5/23/08 1000    | 5/23/08       | COND_W         | Specific Conductance @ 25°C        | <input type="checkbox"/> | <input type="checkbox"/> | 6/09/08  | 6/20/08   |
| 08-3556-01F | Markham WW       | Groundwater | 5/23/08 1000    | 5/23/08       | PH_DW          | E150 1 pH                          | <input type="checkbox"/> | <input type="checkbox"/> | 6/09/08  | 5/24/08   |
| 08-3556-01F | Markham WW       | Groundwater | 5/23/08 1000    | 5/23/08       | TDS_W          | Total Dissolved Solids (TDS)       | <input type="checkbox"/> | <input type="checkbox"/> | 6/09/08  | 5/30/08   |

CLIENT INFORMATION

Evergreen Analytical Laboratory Inc.

Mail Original Report to OGCC
Attn John Axelsson
Address 9203 E. 155th Dr
City Brighton State CO Zip 80602
Tel # 303 637 7178 Fax # 7179
E mail john.axelsson@state.co.us



4036 Youngfield St
Wheat Ridge, Colorado 80033
(303) 425-6021
FAX (303) 425-6854
(877) 737-4521
info@evergreenanalytical.com

Report Results by (Date)
Standard 2 working weeks
UST Analyses per Fee Schedule
\* Rush less than 24 hrs, 150%
1-2 work days, 100%
3-5 work days, 50%
6-9 work days, 25%
\*Subject to surcharge & exceptions noted in fee schedule

REPORT ALSO BY FAX PDF EDD
REPORT CHROMATOGRAMS NO

CONFIRMATION OF SAMPLE RECEIPT REQUIRED? YES

Mail Invoice to
Attn
Address
City State Zip
Tel # Fax #
Project ID# Markham WW
PO Quote
Sampler John Axelsson

NOTE. Identify Known Hazards Below

SAMPLE IDENTIFICATION DATE SAMPLED TIME

Table with columns: MATRIX, ANALYSES (check analysis), For Laboratory Use Only. Includes rows for sample identification and various analytical parameters like TCLP, Volatile Organics, etc.

Instructions Ca, Fe, Mn, K, Mg, Na, Cl, NO2, NO3, Br, SO3, CO3, HCO3, F, Se Provide concentration

\*\* Important Note See reverse side for Terms and Conditions Anions Bromide, Chloride, Nitrate, Nitrite, O-Phosphate, Sulfate (Circle)

Table with columns: Relinquished by (Signature), Date/Time, Received by (Signature), Date/Time. Includes handwritten signatures and dates.

Evergreen Analytical, Inc.

Date. 07-Jun-08

Client Project ID: Markham WW

Lab Order 08-3556

## CASE NARRATIVE

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### SAMPLE RECEIVING

Sample(s) were hand delivered to the laboratory by the client  
The temperature of the sample(s) upon arrival was 8.4 °C  
Sample(s) were received in good condition, in the proper container, and within holding times  
Sample(s) were preserved properly, VOC sample(s) were marked as preserved on the bottle labels  
VOC sample(s) were received with no headspace present JD

### QUALITY ASSURANCE (QA)

Analyses performed on samples in this work order by EAL meet the requirements of the EAL Quality Assurance Program unless otherwise explained. Analyses of RCRA samples meet the requirements of NELAC and Utah Rule R444-14 unless otherwise explained. CMS

### CLIENT SERVICES

There are no anomalies to report. EKH

### GENERAL CHEMISTRY

The anion sample required a dilution due to matrix interference affecting nitrate. This raised the reporting limit for nitrate. There are no other anomalies to report. JML/MM

### METALS ANALYSIS

There are no anomalies to report. WKH

### GAS CHROMATOGRAPHY

Method 8021\_W There are no anomalies to report. MDS

Method RSK175M There are no anomalies to report. MDS

**Evergreen Analytical, Inc.**

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862  
(303) 425-6021

Client Sample ID: Markham WW  
Client Project ID: Markham WW  
Date Collected: 5/23/08  
Date Received: 5/23/08

Lab Work Order 08-3556  
Lab Sample ID: 08-3556-01A  
Sample Matrix: Groundwater

**AROMATIC VOLATILE ORGANICS**

Method: SW8021B

Prep Method: SW5030B

Date Prepared: 5/23/08

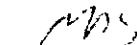
Lab File ID: TVB20523\014R

Dilution Factor: 1

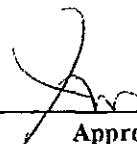
Date Analyzed: 5/23/08

Method Blank: MB2052308

| Analytes                        | CAS Number | Result | LQL               | Units |
|---------------------------------|------------|--------|-------------------|-------|
| Benzene                         | 71-43-2    | U      | 10                | µg/L  |
| Toluene                         | 108-88-3   | U      | 20                | µg/L  |
| Ethylbenzene                    | 100-41-4   | U      | 20                | µg/L  |
| m,p-Xylene                      | 1330-20-7  | U      | 20                | µg/L  |
| o-Xylene                        | 95-47-6    | U      | 20                | µg/L  |
| Surr 1,2,4-Trichlorobenzene (S) | 120-82-1   | 92     | QC Limits: 60-140 | %REC  |



Analyst



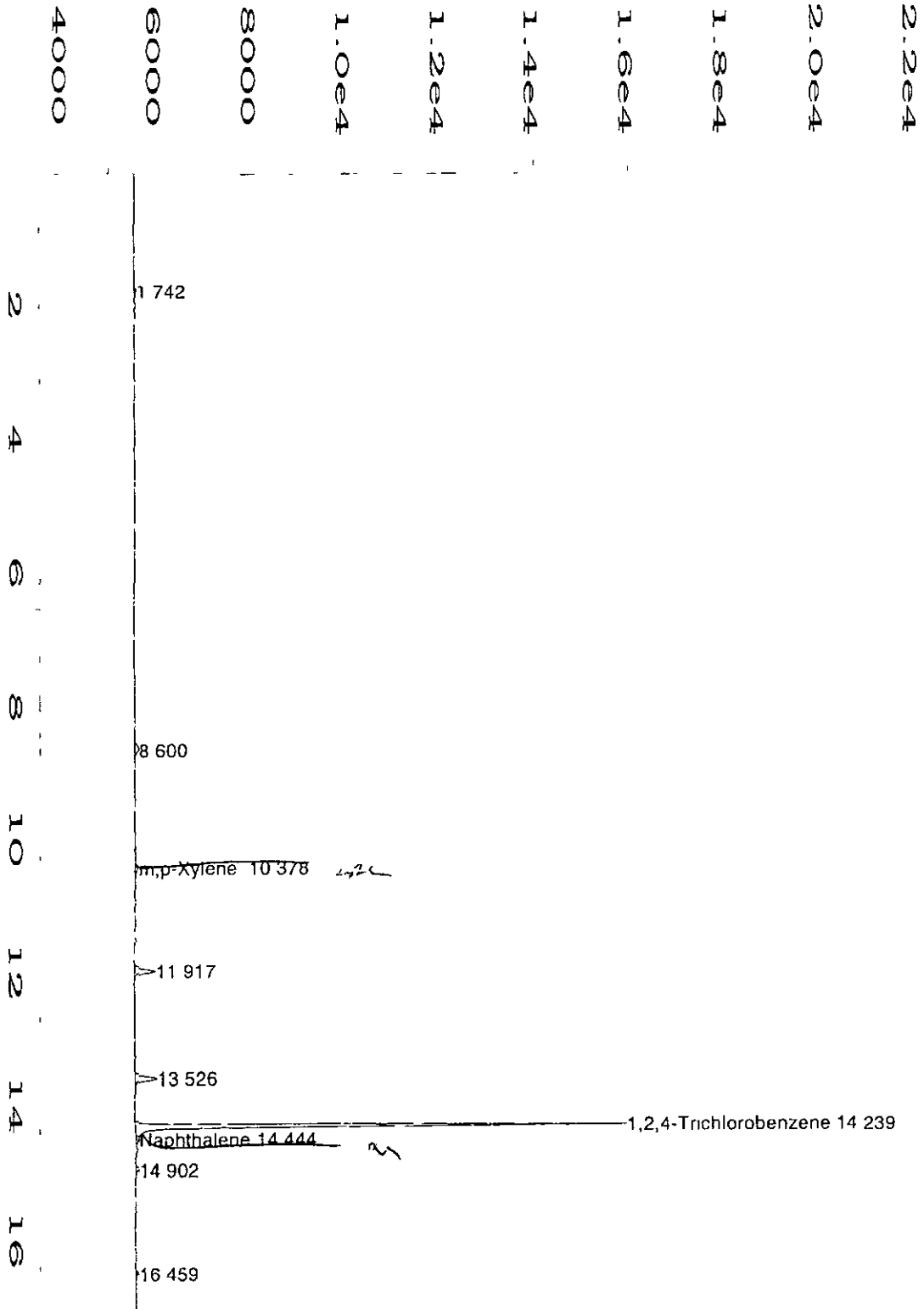
Approved

Notes Total Xylenes consist of three isomers, two of which co-elute. The Xylene RL is for a single peak. Confirmation analysis was not performed.

**Qualifiers** B - Analyte detected in the associated Method Blank, value not subtracted from result  
E - Extrapolated value. Value exceeds calibration range  
H - Sample analysis exceeded analytical holding time  
J - Indicates an estimated value when the compound is detected, but is below the LQL  
S - Spike Recovery outside accepted limits  
U - Compound analyzed for but not detected  
X - See case narrative  
\* - Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL

**Definitions** LQL - Lower Quantitation Limit  
Surr - Surrogate

Print Date 5/27/08



|                   |                                      |                   |              |
|-------------------|--------------------------------------|-------------------|--------------|
| Data File Name    | C:\HPCHEM\2\DATA\TVB20523\014R0101.D | Page Number       | 1            |
| Operator          | Marcus Stephenson                    | Vial Number       | 14           |
| Instrument        | TVHBTEX2                             | Injection Number  | 1            |
| Sample Name       | 08-3556-01A                          | Sequence Line     | 1            |
| Run Time Bar Code |                                      | Instrument Method | TW21201I.MTH |
| Acquired on       | 23 May 08 06:08 PM                   | Analysis Method   | BW20516.MTH  |
| Report Created on | 23 May 08 06:26 PM                   | Sample Amount     | 0            |
| Last Recalib on   | 19 MAY 08 01:56 PM                   | ISTD Amount       |              |
| Multiplier        | 1                                    |                   |              |
| Sample Info       | SAMP                                 |                   |              |
|                   | DF=1                                 |                   |              |
|                   | T1=607                               |                   |              |

**Evergreen Analytical, Inc.**

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862  
(303) 425-6021

Client Sample ID: Markham WW  
Client Project ID: Markham WW  
Date Collected: 5/23/08  
Date Received: 5/23/08

Lab Work Order: 08-3556  
Lab Sample ID: 08-3556-01  
Sample Matrix: Groundwater

**TOTAL METALS**

Method: E200.7, Rev 4.4

Prep Method: E200.7, Rev. 4.4

Date Prepared: 5/29/08  
Date Analyzed: 5/30/08

Lab File ID: 053008PM  
Method Blank: MB-15636

Dilution Factor: 1  
Lab Fraction ID: 08-3556-01B

| Analytes  | CAS Number | Result | LQL     | Units |
|-----------|------------|--------|---------|-------|
| Calcium   | 7440-70-2  | 6.15   | 0.387   | mg/L  |
| Iron      | 7439-89-6  | 18.1   | 0.0700  | mg/L  |
| Magnesium | 7439-95-4  | 3.07   | 0.150   | mg/L  |
| Manganese | 7439-96-5  | 0.299  | 0.00500 | mg/L  |
| Potassium | 7440-09-7  | 2.88   | 0.340   | mg/L  |
| Sodium    | 7440-23-5  | 287    | 0.400   | mg/L  |

**TOTAL METALS**

Method: E200.8

Prep Method: E200.8

Date Prepared: 6/3/08  
Date Analyzed: 6/3/08

Lab File ID: 080603A B098SMPL D  
Method Blank: MB-15658

Dilution Factor: 1  
Lab Fraction ID: 08-3556-01B

| Analytes | CAS Number | Result | LQL     | Units |
|----------|------------|--------|---------|-------|
| Selenium | 7782-49-2  | U      | 0.00200 | mg/L  |

*JMC*

Analyst

*WCH*

Approved

Qualifiers: B - Analyte detected in the associated Method Blank, value not subtracted from result  
 I - Extrapolated value. Value exceeds calibration range  
 H - Sample analysis exceeded analytical holding time  
 L - Indicates an estimated value when the compound is detected, but is below the LQL  
 S - Spike Recovery outside accepted limits  
 F - Compound analyzed for but not detected  
 X - See case narrative  
 \* - Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL

Definitions: NA - Not Applicable  
 LQL - Lower Quantitation Limit  
 Surr - Surrogate



**Evergreen Analytical, Inc.**

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862  
(303) 425-6021

Client Sample ID: Markham WW  
Client Project ID: Markham WW  
Date Collected: 5/23/08 1000  
Date Received: 5/23/08

Lab Work Order 08-3556  
Lab Sample ID: 08-3556-01  
Sample Matrix: Groundwater

**ANIONS BY IC**

Method: E300.0

Prep Method:

Date Prepared: 5/23/08  
Date Analyzed: 5/23/08 1816

Method Blank: MB 5/23/08

Dilution Factor: 1  
Lab Fraction ID: 08-3556-01C

| Analytes | CAS Number | Result | LQL  | Units |
|----------|------------|--------|------|-------|
| Bromide  | 7647-15-6  | 0.64   | 0.20 | mg/L  |
| Sulfate  | 7778-80-2  | U      | 0.50 | mg/L  |

Date Prepared: 5/23/08  
Date Analyzed: 5/23/08 1518

Method Blank: MB 5/23/08

Dilution Factor: 2  
Lab Fraction ID: 08-3556-01C

| Analytes | CAS Number | Result | LQL  | Units |
|----------|------------|--------|------|-------|
| Chloride | 7647-14-5  | 73.7   | 1.0  | mg/L  |
| Nitrite  |            | U      | 0.40 | mg/L  |

Date Prepared: 5/23/08  
Date Analyzed: 5/23/08 1803

Method Blank: MB 5/23/08

Dilution Factor: 5  
Lab Fraction ID: 08-3556-01C

| Analytes | CAS Number | Result | LQL | Units |
|----------|------------|--------|-----|-------|
| Nitrate  |            | U      | 1.0 | mg/L  |

  
Analyst

  
Approved

**Qualifiers** B - Analyte detected in the associated Method Blank value not subtracted from result  
E - Extrapolated value Value exceeds calibration range  
H - Sample analysis exceeded analytical holding time  
J - Indicates an estimated value when the compound is detected, but is below the LQL  
S - Spike Recovery outside accepted limits  
U - Compound analyzed for but not detected  
X - See case narrative  
\* - Value exceeded the Maximum Contamination Level (MCL), TCLP limit or if compound is undetected LQL exceeds MCL

**Definitions** NA - Not Applicable  
LQL - Lower Quantitation Limit  
Surr - Surrogate

EVERGREEN ANALYTICAL, INC.  
4036 Youngfield St , Wheat Ridge, CO 80033  
(303)425-6021

Anion-Cation (Ion) Balance - Method 1030, Standard Methods, 20th Ed

| EAL Sample ID                         | 08-3556-01 |             | 08-  |       | 08-  |       | 08-  |       | 08-  |       |
|---------------------------------------|------------|-------------|------|-------|------|-------|------|-------|------|-------|
| Client Sample ID                      | Markham WW |             |      |       |      |       |      |       |      |       |
| Sample Result                         | mg/L       | Meq/L       | mg/L | Meq/L | mg/L | Meq/L | mg/L | Meq/L | mg/L | Meq/L |
| <i>Anions</i>                         |            |             |      |       |      |       |      |       |      |       |
| Cl                                    | 73.7       | 2.079       |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| SO <sub>4</sub>                       |            | 0.000       |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| HCO <sub>3</sub> as CaCO <sub>3</sub> | 579        | 11.570      |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| CO <sub>3</sub> as CaCO <sub>3</sub>  |            | 0.000       |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| NO <sub>3</sub>                       |            | 0.000       |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| NO <sub>3</sub> as N                  |            | 0.000       |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| Br                                    | 0.64       | 0.008       |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| <b>Anions Total</b>                   |            | 13.656      |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| <i>Cations</i>                        |            |             |      |       |      |       |      |       |      |       |
| Ca                                    | 6.2        | 0.307       |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| Mg                                    | 3.07       | 0.253       |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| K                                     | 2.88       | 0.074       |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| Na                                    | 287        | 12.484      |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| Other                                 |            | 0.000       |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| <b>Cations Total</b>                  |            | 13.117      |      | 0.000 |      | 0.000 |      | 0.000 |      | 0.000 |
| <b>Ion Balance</b>                    |            |             |      |       |      |       |      |       |      |       |
| <b>% Difference</b>                   |            | <b>2.02</b> |      |       |      |       |      |       |      |       |

$$\% \text{ difference} = 100 \times \frac{(\text{sum cations} - \text{sum anions})}{(\text{sum cations} + \text{sum anions})}$$

RAK  
Approved

Evergreen Analytical, Inc.

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862  
(303) 425-6021

Client Sample ID: Markham WW  
Client Project ID: Markham WW  
Date Collected: 5/23/08 1000  
Date Received: 5/23/08

Lab Work Order: 08-3556  
Lab Sample ID: 08-3556-01  
Sample Matrix: Groundwater

ALKALINITY

Method: SM2320B

Prep Method:

Date Prepared: 5/27/08  
Date Analyzed: 5/27/08

Lab File ID: 67  
Method Blank: MBLK 5/27/08

Dilution Factor: 1  
Lab Fraction ID: 08-3556-01F

| Analytes         | CAS Number | Result | LQL | Units      |
|------------------|------------|--------|-----|------------|
| Total Alkalinity |            | 579    | 5.0 | mg/L CaCO3 |
| Bicarbonate      |            | 542    | 5.0 | mg/L CaCO3 |
| Carbonate        |            | 37.0   | 5.0 | mg/L CaCO3 |

SPECIFIC CONDUCTANCE @ 25°C

Method: SM2510 B

Prep Method:

Date Prepared: 5/23/08  
Date Analyzed: 5/23/08

Lab File ID: 79

Dilution Factor: 1  
Lab Fraction ID: 08-3556-01F

| Analytes             | CAS Number | Result | LQL  | Units    |
|----------------------|------------|--------|------|----------|
| Specific Conductance |            | 1200   | 1.00 | µmhos/cm |

FLUORIDE

Method: SM 4500-F C

Prep Method:

Date Prepared: 6/3/08  
Date Analyzed: 6/3/08

Lab File ID: 8  
Method Blank: MBLK

Dilution Factor: 1  
Lab Fraction ID: 08-3556-01E

| Analytes | CAS Number | Result | LQL  | Units |
|----------|------------|--------|------|-------|
| Fluoride | 16984-48-8 | 3.3    | 0.20 | mg/L  |

E150.1 PH

Method: E150.1


Prep Method:

Date Prepared: 5/23/08  
Date Analyzed: 5/23/08 1430

Dilution Factor: 1  
Lab Fraction ID: 08-3556-01F

| Analytes | CAS Number | Result | LQL  | Units    |
|----------|------------|--------|------|----------|
| pH       |            | 8.64   | 1.00 | pH Units |

  
Analyst

  
Approved

**Qualifiers**

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- H - Sample analysis exceeded analytical holding time
- I - Indicates an estimated value when the compound is detected but is below the LQL
- S - Spike Recovery outside accepted limits
- U - Compound analyzed for but not detected
- X - See case narrative
- \* - Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL

**Definitions**

- NA - Not Applicable
- LQL - Lower Quantitation Limit
- Surr - Surrogate

### Evergreen Analytical, Inc.

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862  
(303) 425-6021

Client Sample ID: Markham WW  
Client Project ID: Markham WW  
Date Collected: 5/23/08 1000  
Date Received: 5/23/08

Lab Work Order: 08-3556  
Lab Sample ID: 08-3556-01  
Sample Matrix: Groundwater

#### TOTAL DISSOLVED SOLIDS (TDS)

Method: SM 2540C

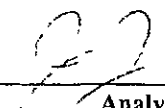
Prep Method:

Date Prepared: 5/27/08  
Date Analyzed: 5/27/08

Lab File ID: 20  
Method Blank: MBLK 05/27/08

Dilution Factor: 1  
Lab Fraction ID: 08-3556-01F

| Analytes               | CAS Number | Result | LQL | Units |
|------------------------|------------|--------|-----|-------|
| Total Dissolved Solids |            | 788    | 100 | mg/L  |

  
\_\_\_\_\_  
Analyst

  
\_\_\_\_\_  
Approved

**Qualifiers**

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- E - Extrapolated value Value exceeds calibration range
- H - Sample analysis exceeded analytical holding time
- J - Indicates an estimated value when the compound is detected, but is below the LQL
- S - Spike Recovery outside accepted limits
- U - Compound analyzed for but not detected
- X - See case narrative
- \* - Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL

**Definitions**

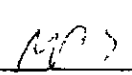
- NA - Not Applicable
- LQL - Lower Quantitation Limit
- Surr - Surrogate

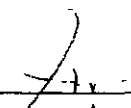
**Evergreen Analytical, Inc.**

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862  
(303) 425-6021

|                                      |                                   |
|--------------------------------------|-----------------------------------|
| <b>Client Sample ID:</b> Markham WW  | <b>Lab Work Order:</b> 08-3556    |
| <b>Client Project ID:</b> Markham WW | <b>Lab Sample ID:</b> 08-3556-01D |
| <b>Date Collected:</b> 5/23/08       | <b>Sample Matrix:</b> Groundwater |
| <b>Date Received:</b> 5/23/08        | <b>Lab File ID:</b> GAS0527010    |
| <b>Date Prepared:</b> 5/27/08        | <b>Method Blank:</b> GB052708     |
| <b>Date Analyzed:</b> 5/27/08        | <b>Prep Factor:</b> 1 000         |
| <b>Percent Moisture:</b> NA          | <b>Dilution Factor:</b> 20 00     |

|                                |                              |               |                    |
|--------------------------------|------------------------------|---------------|--------------------|
| <b>Method:</b> RSKSOP175M      | <b>RSKSOP-175M HEADSPACE</b> |               |                    |
| <b>Prep Method:</b> RSKSOP175M |                              |               | <b>Units:</b> mg/L |
| <b>Analytes</b>                | <b>CAS Number</b>            | <b>Result</b> | <b>LQL</b>         |
| Methane                        | 74-82-8                      | 14            | 0 016              |

  
\_\_\_\_\_  
**Analyst**

  
\_\_\_\_\_  
**Approved**

**Qualifiers** See the case narrative for a discussion  
 B - Analyte detected in the Method Blank, value not subtracted from result  
 E - Extrapolated value Value exceeds calibration range  
 H - Prep or Analytical holding time exceeded  
 S - Spike Recovery outside acceptance limits  
 X - See case narrative  
 \* - Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL

**Qualifiers** U - Analyte not detected at or above the reporting limit  
 J - Estimated value below the LQL  
**Definitions** NA - Not Applicable  
 LQL - Lower Quantitation Limit  
 MDL - Method Detection Limit  
 Surr - Surrogate Standard

## QUALITY ASSURANCE REPORTS

METHOD BLANKS (MB)

LABORATORY CONTROL SPIKES (LCS)

MATRIX SPIKES (MS/MSD)\*

DUPLICATES (DUP)\*

\* For Metals or Wet Chemistry analyses: only included if requested

Work Order: 08-3556  
 Client Project ID: Markham WW

### ANALYTICAL QC SUMMARY REPORT

BatchID: R39394

|           |           |          |        |          |           |             |                  |               |           |             |        |          |      |
|-----------|-----------|----------|--------|----------|-----------|-------------|------------------|---------------|-----------|-------------|--------|----------|------|
| Sample ID | MB2052308 | SampType | MBLK   | TestCode | 8021_W    | Run ID      | TVHBTEX2_080523A | Prep Date     | 5/23/08   | Units       | µg/L   |          |      |
|           |           | Batch ID | R39394 | TestNo   | SW8021B   | FileID      | TVB20523\003R    | Analysis Date | 5/23/08   | SeqNo       | 691342 |          |      |
| Analyte   |           | Result   |        | LQL      | SPK value | SPK Ref Val | %REC             | LowLimit      | HighLimit | RPD Ref Val | %RPD   | RPDLimit | Qual |

|                                 |       |   |   |     |     |   |      |    |     |   |   |  |  |
|---------------------------------|-------|---|---|-----|-----|---|------|----|-----|---|---|--|--|
| Benzene                         |       | U |   | 1.0 |     |   |      |    |     |   |   |  |  |
| Toluene                         |       | U |   | 2.0 |     |   |      |    |     |   |   |  |  |
| Ethylbenzene                    |       | U |   | 2.0 |     |   |      |    |     |   |   |  |  |
| m,p-Xylene                      |       | U |   | 2.0 |     |   |      |    |     |   |   |  |  |
| o-Xylene                        |       | U |   | 2.0 |     |   |      |    |     |   |   |  |  |
| Surr 1,2,4-Trichlorobenzene (S) | 96.41 |   | 0 |     | 100 | 0 | 96.4 | 60 | 140 | 0 | 0 |  |  |

|           |            |          |        |          |           |             |                  |               |           |             |        |          |      |
|-----------|------------|----------|--------|----------|-----------|-------------|------------------|---------------|-----------|-------------|--------|----------|------|
| Sample ID | LCS2052308 | SampType | LCS    | TestCode | 8021_W    | Run ID      | TVHBTEX2_080523A | Prep Date     | 5/23/08   | Units       | µg/L   |          |      |
|           |            | Batch ID | R39394 | TestNo   | SW8021B   | FileID      | TVB20523\004R    | Analysis Date | 5/23/08   | SeqNo       | 691343 |          |      |
| Analyte   |            | Result   |        | LQL      | SPK value | SPK Ref Val | %REC             | LowLimit      | HighLimit | RPD Ref Val | %RPD   | RPDLimit | Qual |

|                                 |       |  |     |       |   |     |    |     |   |   |  |  |
|---------------------------------|-------|--|-----|-------|---|-----|----|-----|---|---|--|--|
| Benzene                         | 27.59 |  | 1.0 | 25.5  | 0 | 108 | 70 | 130 | 0 | 0 |  |  |
| Toluene                         | 186.5 |  | 2.0 | 183.6 | 0 | 102 | 70 | 130 | 0 | 0 |  |  |
| Ethylbenzene                    | 39.54 |  | 2.0 | 36.8  | 0 | 107 | 70 | 130 | 0 | 0 |  |  |
| m,p-Xylene                      | 154.5 |  | 2.0 | 136.3 | 0 | 113 | 70 | 130 | 0 | 0 |  |  |
| o-Xylene                        | 61.28 |  | 2.0 | 57.2  | 0 | 107 | 70 | 130 | 0 | 0 |  |  |
| Surr 1,2,4-Trichlorobenzene (S) | 116.9 |  | 0   | 100   | 0 | 117 | 60 | 140 | 0 | 0 |  |  |

|           |               |          |        |          |           |             |                  |               |           |             |        |          |      |
|-----------|---------------|----------|--------|----------|-----------|-------------|------------------|---------------|-----------|-------------|--------|----------|------|
| Sample ID | 08-3547-02AMS | SampType | MS     | TestCode | 8021_W    | Run ID      | TVHBTEX2_080523A | Prep Date     | 5/23/08   | Units       | µg/L   |          |      |
|           |               | Batch ID | R39394 | TestNo   | SW8021B   | FileID      | TVB20523\006R    | Analysis Date | 5/23/08   | SeqNo       | 691345 |          |      |
| Analyte   |               | Result   |        | LQL      | SPK value | SPK Ref Val | %REC             | LowLimit      | HighLimit | RPD Ref Val | %RPD   | RPDLimit | Qual |

|                                 |       |  |     |       |       |      |    |     |   |   |  |  |
|---------------------------------|-------|--|-----|-------|-------|------|----|-----|---|---|--|--|
| Benzene                         | 29.35 |  | 1.0 | 25.5  | 1.507 | 109  | 70 | 130 | 0 | 0 |  |  |
| Toluene                         | 234   |  | 2.0 | 183.6 | 51.3  | 99.5 | 70 | 130 | 0 | 0 |  |  |
| Ethylbenzene                    | 52.68 |  | 2.0 | 36.8  | 12.44 | 109  | 62 | 130 | 0 | 0 |  |  |
| m,p-Xylene                      | 240.7 |  | 2.0 | 136.3 | 80.32 | 118  | 70 | 134 | 0 | 0 |  |  |
| o-Xylene                        | 93.1  |  | 2.0 | 57.2  | 31.3  | 108  | 63 | 130 | 0 | 0 |  |  |
| Surr 1,2,4-Trichlorobenzene (S) | 115.1 |  | 0   | 100   | 0     | 115  | 60 | 140 | 0 | 0 |  |  |

**Qualifiers**  
 U - Not detected at or above the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside acceptance limits  
 E - Extrapolated value, value exceeds calibration range  
 R - RPD outside acceptance limits  
 B - Analyte detected in the associated Method Blank  
 H - Prep or analytical holding time exceeded  
 X - See case narrative

Work Order: 08-3556  
 Client Project ID: Markham WW

## ANALYTICAL QC SUMMARY REPORT

BatchID: R39394

| Sample ID                       | SampType | MSD    | TestCode  | 8021_W      | Run ID        | TVHBTEX2_080523A | Prep Date | 5/23/08     | Units  | µg/L     |      |
|---------------------------------|----------|--------|-----------|-------------|---------------|------------------|-----------|-------------|--------|----------|------|
| Batch ID                        | R39394   | TestNo | SW8021B   | FileID      | TVB20523\007R | Analysis Date    | 5/23/08   | SeqNo       | 691346 |          |      |
| Analyte                         | Result   | LQL    | SPK value | SPK Ref Val | %REC          | LowLimit         | HighLimit | RPD Ref Val | %RPD   | RPDLimit | Qual |
| Benzene                         | 29.63    | 1.0    | 25.5      | 1.507       | 110           | 70               | 130       | 29.35       | 0.949  | 30       |      |
| Toluene                         | 237      | 2.0    | 183.6     | 51.3        | 101           | 70               | 130       | 234         | 1.27   | 30       |      |
| Ethylbenzene                    | 53.49    | 2.0    | 36.8      | 12.44       | 112           | 62               | 130       | 52.68       | 1.54   | 30       |      |
| m,p-Xylene                      | 243.6    | 2.0    | 136.3     | 80.32       | 120           | 70               | 134       | 240.7       | 1.17   | 30       |      |
| o-Xylene                        | 94.34    | 2.0    | 57.2      | 31.3        | 110           | 63               | 130       | 93.1        | 1.32   | 30       |      |
| Surr 1,2,4-Trichlorobenzene (S) | 114.8    | 0      | 100       | 0           | 115           | 60               | 140       | 0           | 0      | 0        |      |

**Qualifiers**

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 S - Spike Recovery outside acceptance limits  
 E - Extrapolated value, value exceeds calibration range

R - RPD outside acceptance limits  
 B - Analyte detected in the associated Method Blank  
 H - Prep or analytical holding time exceeded  
 X - See case narrative



Work Order 08-3556  
 Client Project ID Markham WW

### ANALYTICAL QC SUMMARY REPORT

BatchID 15636

|           |          |          |       |          |             |        |                            |               |           |       |        |
|-----------|----------|----------|-------|----------|-------------|--------|----------------------------|---------------|-----------|-------|--------|
| Sample ID | MB-15636 | SampType | MBLK  | TestCode | 200 7_T     | Run ID | ICP-OPTIMA 5300 DV_080530A | Prep Date     | 5/29/2008 | Units | mg/L   |
|           |          | Batch ID | 15636 | TestNo   | E200 7, Rev | FileID | 053008PM                   | Analysis Date | 5/30/2008 | SeqNo | 693572 |

| Analyte   | Result | LQL     | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|-----------|--------|---------|-----------|-------------|------|----------|-----------|-------------|------|----------|------|
| Calcium   | U      | 0.387   |           |             |      |          |           |             |      |          |      |
| Iron      | U      | 0.0700  |           |             |      |          |           |             |      |          |      |
| Magnesium | U      | 0.150   |           |             |      |          |           |             |      |          |      |
| Manganese | U      | 0.00500 |           |             |      |          |           |             |      |          |      |
| Potassium | U      | 0.340   |           |             |      |          |           |             |      |          |      |
| Sodium    | U      | 0.400   |           |             |      |          |           |             |      |          |      |

|           |           |          |       |          |             |        |                            |               |           |       |        |
|-----------|-----------|----------|-------|----------|-------------|--------|----------------------------|---------------|-----------|-------|--------|
| Sample ID | LCS-15636 | SampType | LCS   | TestCode | 200 7_T     | Run ID | ICP-OPTIMA 5300 DV_080530A | Prep Date     | 5/29/2008 | Units | mg/L   |
|           |           | Batch ID | 15636 | TestNo   | E200 7, Rev | FileID | 053008PM                   | Analysis Date | 5/30/2008 | SeqNo | 693573 |

| Analyte   | Result | LQL     | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|-----------|--------|---------|-----------|-------------|------|----------|-----------|-------------|------|----------|------|
| Calcium   | 10.36  | 0.387   | 10        | 0           | 104  | 74       | 120       | 0           | 0    |          |      |
| Iron      | 5.213  | 0.0700  | 5         | 0           | 104  | 76.6     | 115       | 0           | 0    |          |      |
| Magnesium | 10.38  | 0.150   | 10        | 0           | 104  | 76.7     | 120       | 0           | 0    |          |      |
| Manganese | 1.955  | 0.00500 | 2         | 0           | 97.8 | 72.4     | 109       | 0           | 0    |          |      |
| Potassium | 10.34  | 0.340   | 10        | 0           | 103  | 70.9     | 115       | 0           | 0    |          |      |
| Sodium    | 10.53  | 0.400   | 10        | 0           | 105  | 80       | 120       | 0           | 0    |          |      |

**Qualifiers**

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 S - Spike Recovery outside acceptance limits  
 I - Extrapolated value, value exceeds calibration range

R - RPD outside acceptance limits  
 B - Analyte detected in the associated Method Blank  
 H - Prep or analytical holding time exceeded  
 X - See case narrative

Work Order 08-3556  
 Client Project ID Markham WW

**ANALYTICAL QC SUMMARY REPORT**

BatchID 15658

|           |          |          |       |          |           |             |                     |               |           |             |        |          |      |
|-----------|----------|----------|-------|----------|-----------|-------------|---------------------|---------------|-----------|-------------|--------|----------|------|
| Sample ID | MB-15658 | SampType | MBLK  | TestCode | 200 8_TR  | Run ID      | ICPMS_080603A       | Prep Date     | 6/3/2008  | Units       | mg/L   |          |      |
|           |          | Batch ID | 15658 | TestNo   | E200 8    | FileID      | 080603A B\091SMPL D | Analysis Date | 6/3/2008  | SeqNo       | 694615 |          |      |
| Analyte   |          | Result   |       | LQL      | SPK value | SPK Ref Val | %REC                | LowLimit      | HighLimit | RPD Ref Val | %RPD   | RPDLimit | Qual |

Selenium U 0 00200

|           |           |          |       |          |           |             |                     |               |           |             |        |          |      |
|-----------|-----------|----------|-------|----------|-----------|-------------|---------------------|---------------|-----------|-------------|--------|----------|------|
| Sample ID | LCS-15658 | SampType | LCS   | TestCode | 200 8_TR  | Run ID      | ICPMS_080603A       | Prep Date     | 6/3/2008  | Units       | mg/L   |          |      |
|           |           | Batch ID | 15658 | TestNo   | E200 8    | FileID      | 080603A B\092SMPL D | Analysis Date | 6/3/2008  | SeqNo       | 694616 |          |      |
| Analyte   |           | Result   |       | LQL      | SPK value | SPK Ref Val | %REC                | LowLimit      | HighLimit | RPD Ref Val | %RPD   | RPDLimit | Qual |

Selenium 0 02235 0 00200 0 02 0 112 85 115 0 0

|           |               |          |       |          |           |             |                     |               |           |             |        |          |      |
|-----------|---------------|----------|-------|----------|-----------|-------------|---------------------|---------------|-----------|-------------|--------|----------|------|
| Sample ID | 08-3556-01BMS | SampType | MS    | TestCode | 200 8_TR  | Run ID      | ICPMS_080603A       | Prep Date     | 6/3/2008  | Units       | mg/L   |          |      |
| Client ID | Markham WW    | Batch ID | 15658 | TestNo   | E200 8    | FileID      | 080603A B\099SMPL D | Analysis Date | 6/3/2008  | SeqNo       | 694620 |          |      |
| Analyte   |               | Result   |       | LQL      | SPK value | SPK Ref Val | %REC                | LowLimit      | HighLimit | RPD Ref Val | %RPD   | RPDLimit | Qual |

Selenium 0 02401 0 00200 0 02 0 001856 120 70 130 0 0

|           |                |          |       |          |           |             |                     |               |           |             |        |          |      |
|-----------|----------------|----------|-------|----------|-----------|-------------|---------------------|---------------|-----------|-------------|--------|----------|------|
| Sample ID | 08-3556-01BMSD | SampType | MSD   | TestCode | 200 8_TR  | Run ID      | ICPMS_080603A       | Prep Date     | 6/3/2008  | Units       | mg/L   |          |      |
| Client ID | Markham WW     | Batch ID | 15658 | TestNo   | E200 8    | FileID      | 080603A B\100SMPL D | Analysis Date | 6/3/2008  | SeqNo       | 694621 |          |      |
| Analyte   |                | Result   |       | LQL      | SPK value | SPK Ref Val | %REC                | LowLimit      | HighLimit | RPD Ref Val | %RPD   | RPDLimit | Qual |

Selenium 0 02318 0 00200 0 02 0 001856 116 70 130 0 02401 3 50 20

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Work Order: 08-3556

Client Project ID Markham WW

## ANALYTICAL QC SUMMARY REPORT

TestCode: ANIONS\_NonDW

| Sample ID | MB 5/23/08 | SampType | MBLK   | TestCode | ANIONS_Non | Run ID      | IC-DX120_080523A | Prep Date     | 5/23/08   | Units       | mg/L   |          |      |
|-----------|------------|----------|--------|----------|------------|-------------|------------------|---------------|-----------|-------------|--------|----------|------|
|           |            | Batch ID | R39415 | TestNo   | E300 0     | FileID      |                  | Analysis Date | 5/23/08   | SeqNo       | 691574 |          |      |
| Analyte   |            | Result   |        | LQL      | SPK value  | SPK Ref Val | %REC             | LowLimit      | HighLimit | RPD Ref Val | %RPD   | RPDLimit | Qual |
| Chloride  |            | U        |        | 0.50     |            |             |                  |               |           |             |        |          |      |
| Nitrite   |            | U        |        | 0.20     |            |             |                  |               |           |             |        |          |      |
| Bromide   |            | U        |        | 0.20     |            |             |                  |               |           |             |        |          |      |
| Nitrate   |            | U        |        | 0.20     |            |             |                  |               |           |             |        |          |      |
| Sulfate   |            | U        |        | 0.50     |            |             |                  |               |           |             |        |          |      |

| Sample ID | LCS ALLT218024 | SampType | LCS    | TestCode | ANIONS_Non | Run ID      | IC-DX120_080523A | Prep Date     | 5/23/08   | Units       | mg/L   |          |      |
|-----------|----------------|----------|--------|----------|------------|-------------|------------------|---------------|-----------|-------------|--------|----------|------|
|           |                | Batch ID | R39415 | TestNo   | E300 0     | FileID      |                  | Analysis Date | 5/23/08   | SeqNo       | 691573 |          |      |
| Analyte   |                | Result   |        | LQL      | SPK value  | SPK Ref Val | %REC             | LowLimit      | HighLimit | RPD Ref Val | %RPD   | RPDLimit | Qual |
| Chloride  |                | 18.91    |        | 2.5      | 20         | 0           | 94.6             | 90            | 110       | 0           | 0      |          |      |
| Nitrite   |                | 18.83    |        | 1.0      | 20         | 0           | 94.2             | 90            | 110       | 0           | 0      |          |      |
| Bromide   |                | 19.57    |        | 1.0      | 20         | 0           | 97.9             | 90            | 110       | 0           | 0      |          |      |
| Nitrate   |                | 19.25    |        | 1.0      | 20         | 0           | 96.3             | 90            | 110       | 0           | 0      |          |      |
| Sulfate   |                | 29.47    |        | 2.5      | 30         | 0           | 98.2             | 90            | 110       | 0           | 0      |          |      |

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Work Order 08-3556  
 Client Project ID: Markham WW

### ANALYTICAL QC SUMMARY REPORT

TestCode: ALK\_WGRP

|           |              |          |        |          |           |             |             |               |           |             |            |          |      |
|-----------|--------------|----------|--------|----------|-----------|-------------|-------------|---------------|-----------|-------------|------------|----------|------|
| Sample ID | MBLK 5/27/08 | SampType | MBLK   | TestCode | ALK_WGRP  | Run ID      | ALK_080527A | Prep Date     | 5/27/2008 | Units       | mg/L CaCO3 |          |      |
|           |              | Batch ID | R39402 | TestNo   | SM2320B   | FileID      | 47          | Analysis Date | 5/27/2008 | SeqNo       | 691442     |          |      |
| Analyte   |              | Result   |        | LQL      | SPK value | SPK Ref Val | %REC        | LowLimit      | HighLimit | RPD Ref Val | %RPD       | RPDLimit | Qual |

Total Alkalinity U 5.0

|           |     |          |        |          |           |             |             |               |           |             |            |          |      |
|-----------|-----|----------|--------|----------|-----------|-------------|-------------|---------------|-----------|-------------|------------|----------|------|
| Sample ID | LCS | SampType | LCS    | TestCode | ALK_WGRP  | Run ID      | ALK_080527A | Prep Date     | 5/27/2008 | Units       | mg/L CaCO3 |          |      |
|           |     | Batch ID | R39402 | TestNo   | SM2320B   | FileID      | 48          | Analysis Date | 5/27/2008 | SeqNo       | 691443     |          |      |
| Analyte   |     | Result   |        | LQL      | SPK value | SPK Ref Val | %REC        | LowLimit      | HighLimit | RPD Ref Val | %RPD       | RPDLimit | Qual |

Total Alkalinity 99.69 5.0 100 0 99.7 90 110 0 0

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Work Order: 08-3556  
 Client Project ID: Markham WW

## ANALYTICAL QC SUMMARY REPORT

TestCode: COND\_W

| Sample ID            | LCS | SampType | LCS  | TestCode  | COND_W      | Run ID | COND_080523A | Prep Date | 5/23/2008   | Units | µmhos/cm |      |
|----------------------|-----|----------|------|-----------|-------------|--------|--------------|-----------|-------------|-------|----------|------|
| Analyte              |     | Result   | LQL  | SPK value | SPK Ref Val | %REC   | LowLimit     | HighLimit | RPD Ref Val | %RPD  | RPDLimit | Qual |
| Specific Conductance |     | 97.8     | 1.00 | 99.4      | 0           | 98.4   | 90           | 110       | 0           | 0     |          |      |

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Work Order. 08-3556  
Client Project ID. Markham WW

## ANALYTICAL QC SUMMARY REPORT

TestCode: F\_W

| Sample ID | MBLK | SampType | MBLK   | TestCode | F_W         | Run ID      | F_080603A | Prep Date     | 6/3/2008 | Units     | mg/L        |      |          |      |
|-----------|------|----------|--------|----------|-------------|-------------|-----------|---------------|----------|-----------|-------------|------|----------|------|
|           |      | Batch ID | R39565 | TestNo   | SM 4500-F C | FileID      | 1         | Analysis Date | 6/3/2008 | SeqNo     | 694212      |      |          |      |
| Analyte   |      | Result   |        | LQL      | SPK value   | SPK Ref Val |           | %REC          | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Fluoride  |      | U        |        | 0.20     |             |             |           |               |          |           |             |      |          |      |

| Sample ID | MBLK | SampType | MBLK   | TestCode | F_W         | Run ID      | F_080603A | Prep Date     | 6/3/2008 | Units     | mg/L        |      |          |      |
|-----------|------|----------|--------|----------|-------------|-------------|-----------|---------------|----------|-----------|-------------|------|----------|------|
|           |      | Batch ID | R39565 | TestNo   | SM 4500-F C | FileID      | 79        | Analysis Date | 6/3/2008 | SeqNo     | 694237      |      |          |      |
| Analyte   |      | Result   |        | LQL      | SPK value   | SPK Ref Val |           | %REC          | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Fluoride  |      | U        |        | 0.20     |             |             |           |               |          |           |             |      |          |      |

| Sample ID | LCS | SampType | LCS    | TestCode | F_W         | Run ID      | F_080603A | Prep Date     | 6/3/2008 | Units     | mg/L        |      |          |      |
|-----------|-----|----------|--------|----------|-------------|-------------|-----------|---------------|----------|-----------|-------------|------|----------|------|
|           |     | Batch ID | R39565 | TestNo   | SM 4500-F C | FileID      | 2         | Analysis Date | 6/3/2008 | SeqNo     | 694213      |      |          |      |
| Analyte   |     | Result   |        | LQL      | SPK value   | SPK Ref Val |           | %REC          | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Fluoride  |     | 10.03    |        | 0.20     | 10          | 0           |           | 100           | 95       | 105       | 0           | 0    |          |      |

| Sample ID | LCS | SampType | LCS    | TestCode | F_W         | Run ID      | F_080603A | Prep Date     | 6/3/2008 | Units     | mg/L        |      |          |      |
|-----------|-----|----------|--------|----------|-------------|-------------|-----------|---------------|----------|-----------|-------------|------|----------|------|
|           |     | Batch ID | R39565 | TestNo   | SM 4500-F C | FileID      | 80        | Analysis Date | 6/3/2008 | SeqNo     | 694238      |      |          |      |
| Analyte   |     | Result   |        | LQL      | SPK value   | SPK Ref Val |           | %REC          | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Fluoride  |     | 9.96     |        | 0.20     | 10          | 0           |           | 99.6          | 95       | 105       | 0           | 0    |          |      |

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021

Work Order. 08-3556  
Client Project ID Markham WW

# ANALYTICAL QC SUMMARY REPORT

TestCode: PH\_DW

| Sample ID | LCS-R39379 | SampType | LCS    | TestCode  | PH_DW       | Run ID | PH_080523B | Prep Date     | 5/23/2008   | Units | pH Units |      |
|-----------|------------|----------|--------|-----------|-------------|--------|------------|---------------|-------------|-------|----------|------|
|           |            | Batch ID | R39379 | TestNo    | E150 1      | FileID |            | Analysis Date | 5/23/2008   | SeqNo | 690973   |      |
| Analyte   |            | Result   | LQL    | SPK value | SPK Ref Val | %REC   | LowLimit   | HighLimit     | RPD Ref Val | %RPD  | RPDLimit | Qual |
| pH        |            | 7.96     | 1.00   | 8         | 0           | 99.5   | 99.3       | 100.7         | 0           | 0     |          |      |

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Work Order 08-3556  
 Client Project ID Markham WW

## ANALYTICAL QC SUMMARY REPORT

TestCode TDS\_W

| Sample ID | MBLK 05/27/08 | SampType | MBLK   | TestCode | TDS_W     | Run ID      | ANALYTICAL BALANCE_080527B | Prep Date     | 5/27/2008 | Units     | mg/L        |      |          |      |
|-----------|---------------|----------|--------|----------|-----------|-------------|----------------------------|---------------|-----------|-----------|-------------|------|----------|------|
|           |               | Batch ID | R39444 | TestNo   | SM 2540C  | FileID      | 1                          | Analysis Date | 5/27/2008 | SeqNo     | 691978      |      |          |      |
| Analyte   |               | Result   |        | LQL      | SPK value | SPK Ref Val |                            | %REC          | LowLimit  | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Total Dissolved Solids U 10.0

| Sample ID | LCS | SampType | LCS    | TestCode | TDS_W     | Run ID      | ANALYTICAL BALANCE_080527B | Prep Date     | 5/27/2008 | Units     | mg/L        |      |          |      |
|-----------|-----|----------|--------|----------|-----------|-------------|----------------------------|---------------|-----------|-----------|-------------|------|----------|------|
|           |     | Batch ID | R39444 | TestNo   | SM 2540C  | FileID      | 2                          | Analysis Date | 5/27/2008 | SeqNo     | 691979      |      |          |      |
| Analyte   |     | Result   |        | LQL      | SPK value | SPK Ref Val |                            | %REC          | LowLimit  | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Total Dissolved Solids 397 10.0 400 0 99.2 90 110 0 0

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Work Order 08-3556  
 Chent Project ID: Markham WW

## ANALYTICAL QC SUMMARY REPORT

BatchID: GAS052708

|           |          |          |           |           |             |        |              |               |             |       |          |      |
|-----------|----------|----------|-----------|-----------|-------------|--------|--------------|---------------|-------------|-------|----------|------|
| Sample ID | GB052708 | SampType | MBLK      | TestCode  | MEEP_W      | Run ID | FID4_080527A | Prep Date     | 5/27/08     | Units | mg/L     |      |
|           |          | Batch ID | GAS052708 | TestNo    | RSKSOP175   | FileID | GAS0527004   | Analysis Date | 5/27/08     | SeqNo | 691591   |      |
| Analyte   |          | Result   | LQL       | SPK value | SPK Ref Val | %REC   | LowLimit     | HighLimit     | RPD Ref Val | %RPD  | RPDLimit | Qual |

Methane U 0 00080

|           |           |          |           |           |             |        |              |               |             |       |          |      |
|-----------|-----------|----------|-----------|-----------|-------------|--------|--------------|---------------|-------------|-------|----------|------|
| Sample ID | LCS052708 | SampType | LCS       | TestCode  | MEEP_W      | Run ID | FID4_080527A | Prep Date     | 5/27/08     | Units | mg/L     |      |
|           |           | Batch ID | GAS052708 | TestNo    | RSKSOP175   | FileID | GAS0527005   | Analysis Date | 5/27/08     | SeqNo | 691592   |      |
| Analyte   |           | Result   | LQL       | SPK value | SPK Ref Val | %REC   | LowLimit     | HighLimit     | RPD Ref Val | %RPD  | RPDLimit | Qual |

Methane 0 5741 0 0080 0 5094 0 113 70 130 0 0

|           |            |          |           |           |             |        |              |               |             |       |          |      |
|-----------|------------|----------|-----------|-----------|-------------|--------|--------------|---------------|-------------|-------|----------|------|
| Sample ID | LCSD052708 | SampType | LCSD      | TestCode  | MEEP_W      | Run ID | FID4_080527A | Prep Date     | 5/27/08     | Units | mg/L     |      |
|           |            | Batch ID | GAS052708 | TestNo    | RSKSOP175   | FileID | GAS0527006   | Analysis Date | 5/27/08     | SeqNo | 691593   |      |
| Analyte   |            | Result   | LQL       | SPK value | SPK Ref Val | %REC   | LowLimit     | HighLimit     | RPD Ref Val | %RPD  | RPDLimit | Qual |

Methane 0 5743 0 0080 0 5094 0 113 70 130 0 5741 0 0412 30

|           |               |          |           |           |             |        |              |               |             |       |          |      |
|-----------|---------------|----------|-----------|-----------|-------------|--------|--------------|---------------|-------------|-------|----------|------|
| Sample ID | 08-3442-01DMS | SampType | MS        | TestCode  | MEEP_W      | Run ID | FID4_080527A | Prep Date     | 5/27/08     | Units | mg/L     |      |
|           |               | Batch ID | GAS052708 | TestNo    | RSKSOP175   | FileID | GAS0527012   | Analysis Date | 5/27/08     | SeqNo | 691587   |      |
| Analyte   |               | Result   | LQL       | SPK value | SPK Ref Val | %REC   | LowLimit     | HighLimit     | RPD Ref Val | %RPD  | RPDLimit | Qual |

Methane 0 5452 0 0080 0 5094 0 107 70 130 0 0

|           |                |          |           |           |             |        |              |               |             |       |          |      |
|-----------|----------------|----------|-----------|-----------|-------------|--------|--------------|---------------|-------------|-------|----------|------|
| Sample ID | 08-3442-01DMSD | SampType | MSD       | TestCode  | MEEP_W      | Run ID | FID4_080527A | Prep Date     | 5/27/08     | Units | mg/L     |      |
|           |                | Batch ID | GAS052708 | TestNo    | RSKSOP175   | FileID | GAS0527013   | Analysis Date | 5/27/08     | SeqNo | 691588   |      |
| Analyte   |                | Result   | LQL       | SPK value | SPK Ref Val | %REC   | LowLimit     | HighLimit     | RPD Ref Val | %RPD  | RPDLimit | Qual |

Methane 0 5402 0 0080 0 5094 0 106 70 130 0 5452 0 916 30

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**ATTACHMENT B**

**EMPACT ANALYTICAL SYSTEMS, INC**

365 S MAIN STREET  
 BRIGHTON, CO 80601  
 (303) 637-0150

NATURAL GAS WITH AIR ADJUSTED

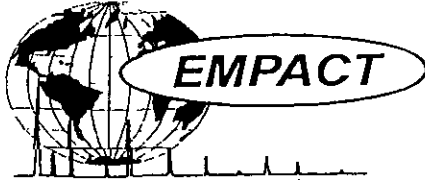
|                  |                    |               |              |
|------------------|--------------------|---------------|--------------|
| PROJECT NO       | 200805110          | ANALYSIS NO   | 01           |
| COMPANY NAME     | COLORADO OIL & GAS | ANALYSIS DATE | MAY 29, 2008 |
| CUSTOMER ID #    |                    | SAMPLE DATE   | MAY 23, 2008 |
| PRODUCER         |                    | CANISTER #    | 1L GLASS     |
| LOCATION         |                    |               |              |
| NAME/DESCRIP     | MARKHAM WW @ 10 00 |               |              |
| DEPTH (FT )      |                    |               |              |
| ***FIELD DATA*** |                    |               |              |
| SAMPLED BY       | J AXELSON          |               |              |
| SAMPLE PRES      |                    | SAMPLE TEMP   |              |
| INJECTED VOLUME  | 92.4%              |               |              |
| COMMENTS         | SPOT               |               |              |

\*\*SAMPLE CONTAINED AIR, AND, NORMALIZE MOLE PERCENTS WERE ADJUSTED

| <u>COMPONENTS</u> | <u>NORM<br/>MOLE%</u> | <u>AIR<br/>ADJUSTED<br/>MOLE%</u> |
|-------------------|-----------------------|-----------------------------------|
| HELIUM            | 0.01                  | 0.06                              |
| HYDROGEN          | 0.02                  | 0.12                              |
| OXYGEN/ARGON      | 18.37                 | 0.00                              |
| NITROGEN          | 74.72                 | 57.14                             |
| CO2               | 0.21                  | 1.12                              |
| METHANE           | 6.61                  | 41.19                             |
| ETHANE            | 0.06                  | 0.37                              |
| PROPANE           | 0.00                  | 0.00                              |
| ISOBUTANE         | 0.00                  | 0.00                              |
| N-BUTANE          | 0.00                  | 0.00                              |
| ISOPENTANE        | 0.00                  | 0.00                              |
| N-PENTANE         | 0.00                  | 0.00                              |
| HEXANES+          | 0.00                  | 0.00                              |
| <u>TOTAL</u>      | <u>100.00</u>         | <u>100.00</u>                     |

|                                       |        |        |
|---------------------------------------|--------|--------|
| BTU @ 60 DEG F                        |        |        |
| GROSS DRY BTU                         | 68.1   | 424.3  |
| GROSS WET BTU                         | 66.9   | 416.9  |
| Z FACTOR                              | 0.9996 | 0.9991 |
| RELATIVE DENSITY (AIR=1 @14.696 PSIA) | 0.9661 | 0.8023 |

NOTE REFERENCE GPA 2261, 2145, & 2172 CURRENT PUBLICATIONS



EMPACT Analytical Systems Inc  
365 South Main Street  
Brighton, CO 80601  
303-637-0150

### CHAIN OF CUSTODY RECORD

|   |                                  |                             |                |
|---|----------------------------------|-----------------------------|----------------|
| CO NAME <i>Colo Oil &amp; Gas Cons. Com</i> | CONTACT NAME <i>John Axelson</i> | TELE NO <i>303-637-7178</i> | LAB PROJECT NO |
| Sampler (PRINT NAME) <i>John Axelson</i>    | Signature <i>[Signature]</i>     | FAX NO <i>7179</i>          |                |
| PROJECT INFO / NO <i>Markham WW</i>         |                                  |                             |                |

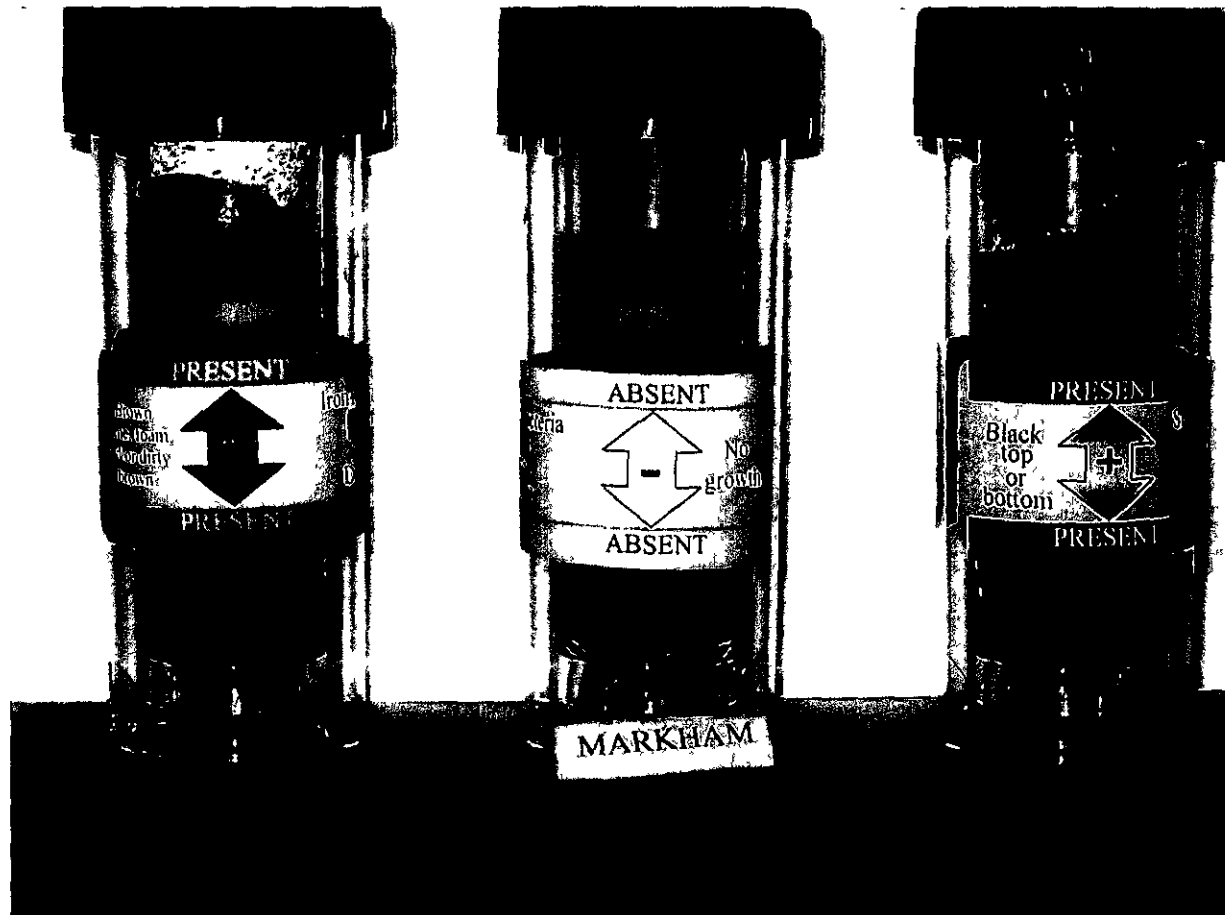
| SAMPLE ID | SAMPLE DESCRIPTION | Comp | Grab                                | Date           | Time         | SAMPLE MATRIX | Container | No of Containers | ANALYSIS / METHOD | REMARKS                |
|-----------|--------------------|------|-------------------------------------|----------------|--------------|---------------|-----------|------------------|-------------------|------------------------|
|           | <i>Markham WW</i>  |      | <input checked="" type="checkbox"/> | <i>5/29/08</i> | <i>10:00</i> | <i>GW</i>     |           | <i>1</i>         | <i>Gas Comp</i>   | <i>Correct for air</i> |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |
|           |                    |      |                                     |                |              |               |           |                  |                   |                        |

COMMENTS

|  |  |                   |                     |
|--|--|-------------------|---------------------|
| Relinquished by (Signature) <i>[Signature]</i> | Received by (Signature) <i>[Signature]</i> | Time <i>10:51</i> | Date <i>5/29/08</i> |
| Relinquished by (Signature)                    | Received by (Signature)                    | Time              | Date                |
| Laboratory                                     | Received for Laboratory by                 | Time              | Date                |
| Method of Shipment                             | Dispatched by (Signature)                  | Time              | Date                |

**ATTACHMENT C**

**ATTACHMENT C - BIOLOGICAL ACTIVITY REACTION TEST RESULTS  
MARKHAM WATER WELL**



**Results after 8 Days:**

**Red Capped Vial – Test for Iron Related Bacteria – Present**

**Green Capped Vial – Test for Slime Forming Bacteria – Absent**

**Black Capped Vial – Test for Sulfate Reducing Bacteria - Present**

**ATTACHMENT D**