

ACCUTEST®
Laboratories

formerly Evergreen Analytical, Inc.

Report page total including this page:

Document # 1944899

027

August 26, 2009

Bob Chesson
Colorado Oil & Gas Conservation Comm.
1120 Lincoln St #801
Denver, CO 80203

Lab Work Order: 09-6049
Client Project ID:

Dear Bob Chesson:

Enclosed are the analytical results for the samples shown in the Laboratory Work Order Summary.

THE INVOICE WILL BE MAILED FROM OUR NEW JERSEY OFFICE UNDER SEPARATE COVER.

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

Accutest will dispose of all samples 44 days from the sample receipt date. 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 Accutest Laboratories. If you have any questions concerning the analytical data, please contact me. Please direct other questions to Client Services.

Sincerely,

Joseph J Egry IV/ Tiffany Pham
Quality Assurance

WORK ORDER Summary**Evergreen Analytical, Inc.****09-6049****Rpt To:** Bob Chesson**Email To:** Robert.Chesson@state.co.usColorado Oil & Gas Conservation
Comm.

8/13/2009 8:16:19 AM

1120 Lincoln St #801

Client Project ID:

Denver, CO 80203

QC Level: LEVEL I+

(303) 894-2100

Comments: EDD COGCC format. Purchase Order OE PHA 10000000009.

| Sample ID | Client Sample ID | Matrix | Collection Date | Date Received | Test Code | Test Name | Hold | MS | Date Due | Hold Time |
|-------------|------------------|----------------|-----------------|---------------|---------------|------------------------------|--------------------------|--------------------------|----------|-----------|
| 09-6049-01A | Anderson | Drinking Water | 8/11/09 1245 | 8/11/09 | 8021_W * | 8021: BTEX | <input type="checkbox"/> | <input type="checkbox"/> | 8/25/09 | 8/25/09 |
| 09-6049-01B | Anderson | Drinking Water | 8/11/09 1245 | 8/11/09 | 200.7_T * | 200.7: Total Metals | <input type="checkbox"/> | <input type="checkbox"/> | 8/25/09 | 2/07/10 |
| 09-6049-01C | Anderson | Drinking Water | 8/11/09 1245 | 8/11/09 | 200.7_D * | 200.7: Dissolved Metals | <input type="checkbox"/> | <input type="checkbox"/> | 8/25/09 | 2/07/10 |
| 09-6049-01D | Anderson | Drinking Water | 8/11/09 1245 | 8/11/09 | ANIONS_W * | 300.0: DW Anions by IC | <input type="checkbox"/> | <input type="checkbox"/> | 8/25/09 | 8/13/09 |
| 09-6049-01E | Anderson | Drinking Water | 8/11/09 1245 | 8/11/09 | MEEP_W * | RSK175M: Methane | <input type="checkbox"/> | <input type="checkbox"/> | 8/25/09 | 8/25/09 |
| 09-6049-01F | Anderson | Drinking Water | 8/11/09 1245 | 8/11/09 | PH_DW | E150.1 pH | <input type="checkbox"/> | <input type="checkbox"/> | 8/25/09 | 8/12/09 |
| 09-6049-01F | Anderson | Drinking Water | 8/11/09 1245 | 8/11/09 | TDS_W | Total Dissolved Solids (TDS) | <input type="checkbox"/> | <input type="checkbox"/> | 8/25/09 | 8/18/09 |
| 09-6049-01G | Anderson | Drinking Water | 8/11/09 1245 | 8/11/09 | COND_W | Specific Conductance @ 25°C | <input type="checkbox"/> | <input type="checkbox"/> | 8/25/09 | 9/08/09 |
| 09-6049-01H | Anderson | Drinking Water | 8/11/09 1245 | 8/11/09 | CARB/BICARB_W | Carbonate and Bicarbonate | <input type="checkbox"/> | <input type="checkbox"/> | 8/25/09 | 8/25/09 |
| 09-6049-01I | Anderson | Drinking Water | 8/11/09 1245 | 8/11/09 | F_W | Fluoride | <input type="checkbox"/> | <input type="checkbox"/> | 8/25/09 | 9/08/09 |

Evergreen Analytical, Inc.

Date: 26-Aug-09

Lab Order: 09-6049

Client Project ID

CASE NARRATIVE

SAMPLE RECEIVING

Sample(s) were hand delivered to the laboratory by the client.

Custody seals were not present.

The temperature of the sample(s) upon arrival was 4.1°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. NJO

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 drinking water samples meet the requirements of the EPA Manual for the Certification of Laboratories Analyzing Drinking Water, unless otherwise explained. JE

CLIENT SERVICES

There are no anomalies to report. PM

The MtBE was removed at the request of the client. AE 8/12/09

GENERAL CHEMISTRY

Method 300.0: Sample Anderson (09-6049-01) has a high conductivity level and a high Chloride level, which required dilution of the sample to avoid saturating the detector and to separate the Nitrite-N peak from the Chloride peak. This raised the reporting limits for Nitrate-N, Sulfate, Nitrite-N and Nitrite+Nitrate-N. There are no other anomalies to report. JML/MM/JE

METALS ANALYSIS

Method E200.7: Matrix spike and matrix spike duplicate (MS/MSD, on another clients sample) recoveries for Sodium are outside the QC limits due to the high concentration of Sodium in the sample versus the low concentration of the spike. The laboratory control spike (LCS) recovery of Sodium is within QC limits, proving the analysis is in control. The dissolved Potassium and Sodium results were slightly higher than the total Potassium and Sodium result. This is within sample reproducibility limits and the dissolved result is essentially the same as the total result. There are no other anomalies to report. MB/JE

Evergreen Analytical, Inc.

Date: 26-Aug-09

Lab Order: 09-6049

Client Project ID

CASE NARRATIVE

GAS CHROMATOGRAPHY

Method RSK175: There are no anomalies to report. AS/JM

Method 8021_W: There are no anomalies to report. JCC

Evergreen Analytical, Inc.
 4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
 (303) 425-6021

Client Sample ID: Anderson
 Client Project ID:
 Date Collected: 8/11/2009
 Date Received: 8/11/2009

Lab Work Order: 09-6049
 Lab Sample ID: 09-6049-01A
 Sample Matrix: Drinking Water

AROMATIC VOLATILE ORGANICS

Method: SW8021B

Prep Method: SW5030B

Date Prepared: 8/13/2009


Lab File ID: I\DATA\081309

Dilution Factor: 1

Date Analyzed: 8/13/2009

Method Blank: MB2081309-2

| Analytes | CAS Number | Result | LQL | Units |
|----------------------------------|------------|--------|-------------------|-------|
| Benzene | 71-43-2 | U | 1.0 | µg/L |
| Toluene | 108-88-3 | 12 | 2.0 | µg/L |
| Ethylbenzene | 100-41-4 | U | 2.0 | µg/L |
| m,p-Xylene | 1330-20-7 | U | 2.0 | µg/L |
| o-Xylene | 95-47-6 | U | 2.0 | µg/L |
| Surr: 1,2,4-Trichlorobenzene (S) | 120-82-1 | 98 | 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
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 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: 8/14/2009

Signal #1 : E:\HPCHEM\1\DATA\081309\TA1601.D\FID1A.CH Vial: 24
Signal #2 : E:\HPCHEM\1\DATA\081309\TA1601.D\FID2B.CH
Acq On : 13 Aug 2009 11:42 pm Operator: JENNC1
Sample : 09-6049-01A Inst : TVHBTEX2
Misc : ,SAMP,8021_W,TVH_W,1,|GC,GTA81,,,,,1 Multiplr: 1.00
IntFile Signal #1: TVH1.E IntFile Signal #2: FB2.E
Quant Time: Aug 14 9:27 2009 Quant Results File: TW20727.RES

Quant Method : C:\MSDCHEM\1\METHODS\TW20727.M (Chemstation Integrator)
Title : 8015B/8021B TVH/BTEX
Last Update : Tue Jul 28 11:43:18 2009
Response via : Multiple Level Calibration
DataAcq Meth : TVB2.M

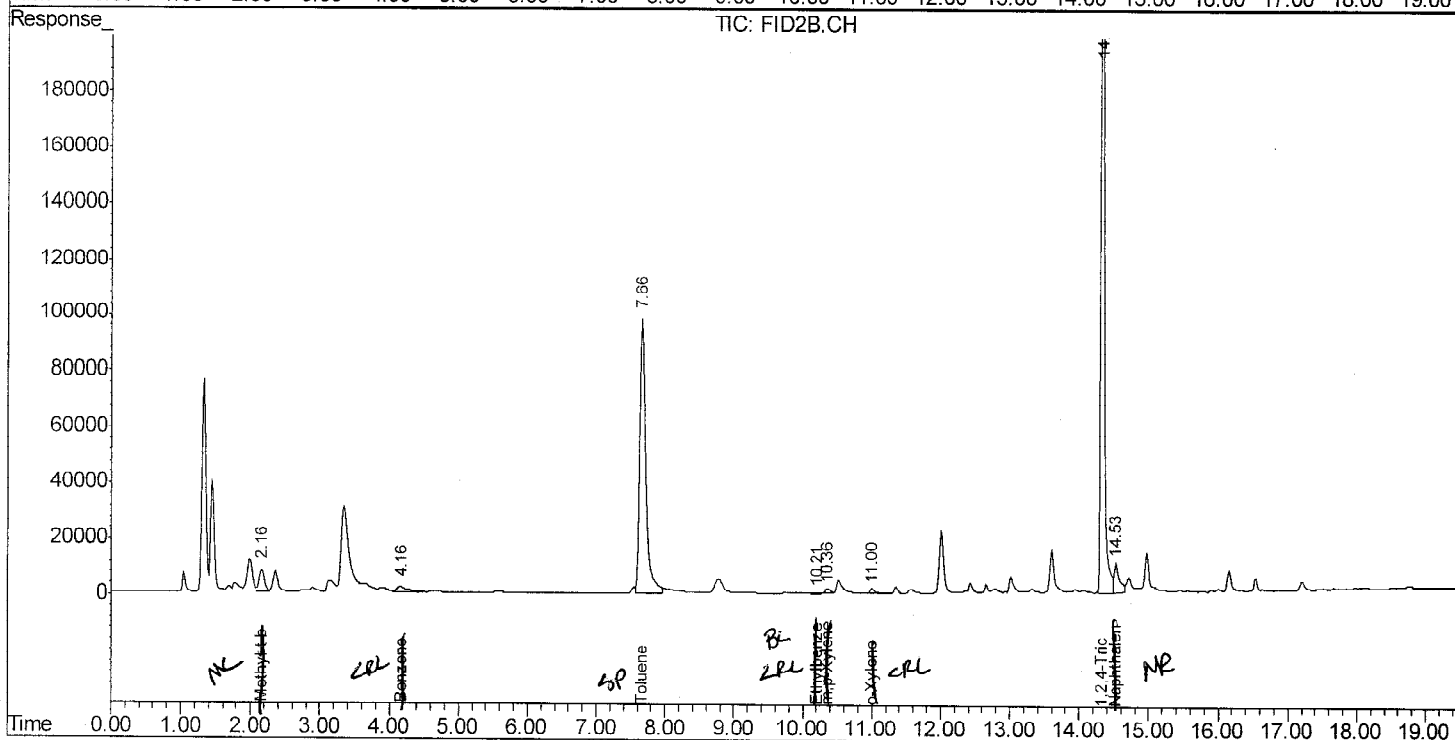
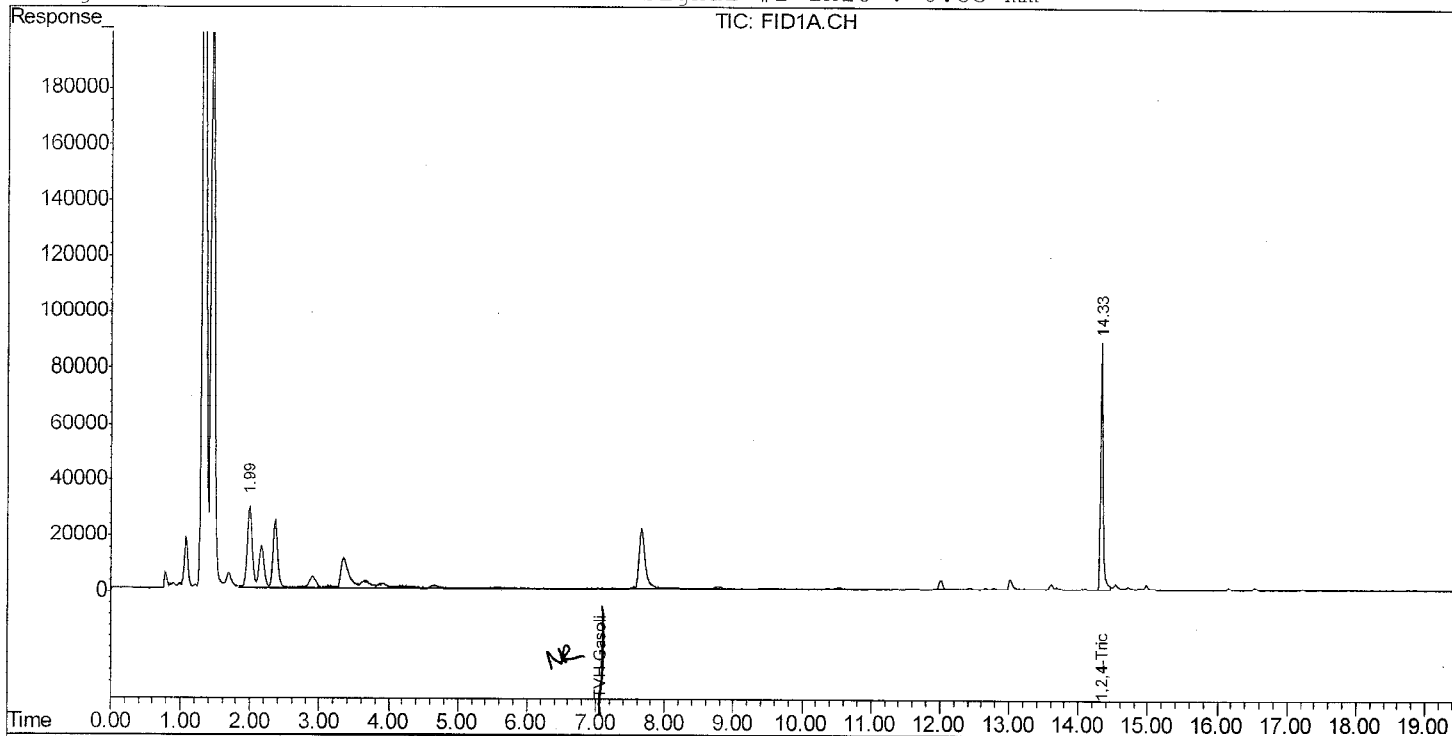
Volume Inj. :

Signal #1 Phase : DB-624

Signal #2 Phase: DB-624

Signal #1 Info : 0.53 mm

Signal #2 Info : 0.53 mm



Evergreen Analytical, Inc.
 4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
 (303) 425-6021

Client Sample ID: Anderson
 Client Project ID:
 Date Collected: 8/11/09
 Date Received: 8/11/09

Lab Work Order: 09-6049
 Lab Sample ID: 09-6049-01
 Sample Matrix: Drinking Water

DISSOLVED METALS

Method: E200.7, Rev. 4.4

Prep Method: E200.7/SW3010A

Date Prepared: 8/13/09
 Date Analyzed: 8/19/09

Lab File ID: 081709PM
 Method Blank: MB-20322

Dilution Factor: 1
 Lab Fraction ID: 09-6049-01C

| Analytes | CAS Number | Result | LQL | Units |
|-----------|------------|---------|---------|-------|
| Calcium | 7440-70-2 | 4.05 | 0.387 | mg/L |
| Iron | 7439-89-6 | U | 0.0700 | mg/L |
| Magnesium | 7439-95-4 | 1.03 | 0.150 | mg/L |
| Manganese | 7439-96-5 | 0.00923 | 0.00500 | mg/L |
| Potassium | 7440-09-7 | 3.10 | 0.340 | mg/L |
| Selenium | 7782-49-2 | U | 0.100 | mg/L |

Date Prepared: 8/13/09
 Date Analyzed: 8/19/09

Lab File ID: 081909AM
 Method Blank: MB-20322

Dilution Factor: 1
 Lab Fraction ID: 09-6049-01C

| Analytes | CAS Number | Result | LQL | Units |
|----------|------------|--------|-------|-------|
| Sodium | 7440-23-5 | 417 | 0.400 | mg/L |

TOTAL METALS

Method: E200.7, Rev. 4.4

Prep Method: E200.7, Rev. 4.4


Date Prepared: 8/17/09
 Date Analyzed: 8/19/09

Lab File ID: 081909AM
 Method Blank: MB-20361

Dilution Factor: 1
 Lab Fraction ID: 09-6049-01B

| Analytes | CAS Number | Result | LQL | Units |
|-----------|------------|--------|---------|-------|
| Calcium | 7440-70-2 | 4.88 | 0.387 | mg/L |
| Iron | 7439-89-6 | 2.57 | 0.0700 | mg/L |
| Manganese | 7439-96-5 | 0.0308 | 0.00500 | mg/L |
| Potassium | 7440-09-7 | 2.91 | 0.340 | mg/L |
| Selenium | 7782-49-2 | U | 0.100 | mg/L |
| Sodium | 7440-23-5 | 393 | 0.400 | mg/L |


 Analyst


 Approved

Qualifiers: B - Analyte detected in the associated Method Blank, value not subtracted from result
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 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

Print Date: 8/25/2009

0000

Evergreen Analytical, Inc.
4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Sample ID: Anderson
Client Project ID:
Date Collected: 8/11/09
Date Received: 8/11/09

Lab Work Order: 09-6049
Lab Sample ID: 09-6049-01
Sample Matrix: Drinking Water

TOTAL METALS

Method: E200.7, Rev. 4.4

Prep Method: E200.7, Rev. 4.4

Date Prepared: 8/17/09
Date Analyzed: 8/22/09

Lab File ID: 082209PM
Method Blank: MB-20361

Dilution Factor: 1
Lab Fraction ID: 09-6049-01B

| Analytes | CAS Number | Result | LQL | Units |
|-----------|------------|--------|-------|-------|
| Magnesium | 7439-95-4 | 1.25 | 0.150 | mg/L |



Analyst



Approved

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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

Print Date: 8/25/2009

009

Evergreen Analytical, Inc.
4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

Client Sample ID: Anderson
Client Project ID:
Date Collected: 8/11/09 1245
Date Received: 8/11/09

Lab Work Order 09-6049
Lab Sample ID: 09-6049-01
Sample Matrix: Drinking Water

ANIONS BY IC

Method: E300.0

Prep Method:

Date Prepared: 8/12/09
Date Analyzed: 8/12/09 1135

Method Blank: MB 08/12/09

Dilution Factor: 2
Lab Fraction ID: 09-6049-01D

| Analytes | CAS Number | Result | LQL | Units |
|-----------|------------|--------|-------|-------|
| Bromide | 7647-15-6 | 2.4 | 0.10 | mg/L |
| Nitrate-N | | U | 0.020 | mg/L |
| Sulfate | 7778-80-2 | U | 1.0 | mg/L |

Date Prepared: 8/12/09
Date Analyzed: 8/12/09 1226

Method Blank: MB 08/12/09

Dilution Factor: 10
Lab Fraction ID: 09-6049-01D

| Analytes | CAS Number | Result | LQL | Units |
|-------------------|------------|--------|-------|-------|
| Chloride | 7647-14-5 | 256 | 5.0 | mg/L |
| Nitrite-N | | U | 0.040 | mg/L |
| Nitrite+Nitrate-N | | U | 0.10 | 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

Print Date: 8/13/09

Evergreen Analytical, Inc.
 4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
 (303) 425-6021

Client Project ID

 Lab Order: 09-6049
 Units: mg/L

RSKSOP-175M Headspace

Method: RSKSOP175M

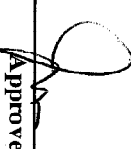
Methane

Prep Method: RSKSOP175M

| Lab ID | Client ID | Matrix | Date Received | Collection Date | Date Prepared | Date Analyzed | Results | LQL | DF |
|-------------|-----------|----------------|---------------|-----------------|---------------|---------------|---------|-------|----|
| 09-6049-01E | Anderson | Drinking Water | 8/11/09 | 8/11/09 | 8/12/09 | 8/12/09 | 17 | 0.040 | 50 |

Comments:

 Analyst 

 Approved 

Qualifiers: J - Indicates an estimated value when the compound is detected, but is below the LQL.
 H - Sample analysis exceeded analytical holding time
 U - Compound analyzed for but not detected
 X - See case narrative
 * - Value exceeds Maximum Contamination Level(MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL.

Definitions: DF - Dilution Factor
 LQL - Lower Quantitation Limit

Print Date: 08/12/09

Evergreen Analytical, Inc.

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

Client Sample ID: Anderson
Client Project ID:
Date Collected: 8/11/09 1245
Date Received: 8/11/09

Lab Work Order 09-6049
Lab Sample ID: 09-6049-01
Sample Matrix: Drinking Water

CARBONATE AND BICARBONATE

Method: SM2320 B

Prep Method:

Date Prepared: 8/19/09
Date Analyzed: 8/19/09

Lab File ID: 139
Method Blank: MBLK 8/19/09

Dilution Factor: 1
Lab Fraction ID: 09-6049-01H

| Analytes | CAS Number | Result | LQL | Units |
|-------------|------------|--------|-----|-------|
| Bicarbonate | | 105 | 5.0 | mg/L |
| Carbonate | | 28.3 | 5.0 | mg/L |

SPECIFIC CONDUCTANCE @ 25°C

Method: SM2510 B

Prep Method:

Date Prepared: 8/14/09
Date Analyzed: 8/14/09

Lab File ID: 2

Dilution Factor: 1
Lab Fraction ID: 09-6049-01G

| Analytes | CAS Number | Result | LQL | Units |
|----------------------|------------|--------|------|----------|
| Specific Conductance | | 1640 | 1.00 | µmhos/cm |

FLUORIDE

Method: SM 4500-F C

Prep Method:

Date Prepared: 8/13/09
Date Analyzed: 8/13/09

Lab File ID: 25
Method Blank: MBLK 08/13/09

Dilution Factor: 1
Lab Fraction ID: 09-6049-01I

| Analytes | CAS Number | Result | LQL | Units |
|----------|------------|--------|------|-------|
| Fluoride | 16984-48-8 | 2.8 | 0.20 | mg/L |

E150.1 PH

Method: E150.1

Prep Method:

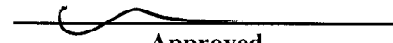
Date Prepared: 8/12/09
Date Analyzed: 8/12/09 0835

Dilution Factor: 1
Lab Fraction ID: 09-6049-01F

| Analytes | CAS Number | Result | LQL | Units |
|----------|------------|--------|------|----------|
| pH | | 9.00 | 1.00 | pH Units |



Analyst



Approved

Qualifiers: B - Analyte detected in the associated Method Blank, value not subtracted from result
E - Extrapolated value. Value exceeds calibration range
II - 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

Print Date: 8/19/2009

Evergreen Analytical, Inc.
4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862
(303) 425-6021

012

Client Sample ID: Anderson
Client Project ID:
Date Collected: 8/11/09 1245
Date Received: 8/11/09

Lab Work Order 09-6049
Lab Sample ID: 09-6049-01
Sample Matrix: Drinking Water

TOTAL DISSOLVED SOLIDS (TDS)

Method: SM 2540C

Prep Method:

Date Prepared: 8/13/09

Lab File ID: 9

Dilution Factor: 1

Date Analyzed: 8/13/09


Method Blank: MBLK 081309

Lab Fraction ID: 09-6049-01F

| Analytes | CAS Number | Result | LQL | Units |
|------------------------|------------|--------|------|-------|
| Total Dissolved Solids | | 1050 | 10.0 | 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

Print Date: 8/19/2009

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.**

Evergreen Analytical, Inc.

Date: 14-Aug-09

Work Order: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8021_W

| | | | | | | | | | | | |
|----------------------------------|--------|--------------------|------------------|-------------|--------------------------|----------|--------------------------|-------------|---------------|----------|------|
| Sample ID: MB2081309-2 | | SampType: MBLK | TestCode: 8021_W | | Run ID: TVHBTEX2_090813A | | Prep Date: 8/13/2009 | | Units: µg/L | | |
| | | Batch ID: R49248-2 | TestNo: SW8021B | | FileID: 1\DATA\081309 | | Analysis Date: 8/13/2009 | | SeqNo: 891824 | | |
| 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) | 91.15 | 0 | 100 | 0 | 91.1 | 60 | 140 | 0 | 0 | | |

| | | | | | | | | | | | |
|----------------------------------|--------|--------------------|------------------|-------------|--------------------------|----------|--------------------------|-------------|---------------|----------|------|
| Sample ID: MEB081209 | | SampType: MBLK | TestCode: 8021_W | | Run ID: TVHBTEX2_090813A | | Prep Date: 8/12/2009 | | Units: µg/L | | |
| | | Batch ID: R49248-2 | TestNo: SW8021B | | FileID: 1\DATA\081309 | | Analysis Date: 8/14/2009 | | SeqNo: 891830 | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Benzene | U | 100 | | | | | | | | | |
| Toluene | U | 200 | | | | | | | | | |
| Ethylbenzene | U | 200 | | | | | | | | | |
| m,p-Xylene | U | 200 | | | | | | | | | |
| o-Xylene | U | 200 | | | | | | | | | |
| Surr: 1,2,4-Trichlorobenzene (S) | 9881 | 0 | 10000 | 0 | 98.8 | 60 | 140 | 0 | 0 | | |

| | | | | | | | | | | | |
|----------------------------------|--------|--------------------|------------------|-------------|--------------------------|----------|--------------------------|-------------|---------------|----------|------|
| Sample ID: LCS2081309-2 | | SampType: LCS | TestCode: 8021_W | | Run ID: TVHBTEX2_090813A | | Prep Date: 8/13/2009 | | Units: µg/L | | |
| | | Batch ID: R49248-2 | TestNo: SW8021B | | FileID: 1\DATA\081309 | | Analysis Date: 8/13/2009 | | SeqNo: 891825 | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Benzene | 28.25 | 1.0 | 27.2 | 0 | 104 | 70 | 130 | 0 | 0 | | |
| Toluene | 193.2 | 2.0 | 211.6 | 0 | 91.3 | 70 | 130 | 0 | 0 | | |
| Ethylbenzene | 45.08 | 2.0 | 57.2 | 0 | 78.8 | 70 | 130 | 0 | 0 | | |
| m,p-Xylene | 145.7 | 2.0 | 166 | 0 | 87.8 | 70 | 130 | 0 | 0 | | |
| o-Xylene | 65.43 | 2.0 | 80 | 0 | 81.8 | 70 | 130 | 0 | 0 | | |
| Surr: 1,2,4-Trichlorobenzene (S) | 110.8 | 0 | 100 | 0 | 111 | 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: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

TestCode: 8021_W

| Sample ID: 09-6070-01AMS | | SampType: MS | | TestCode: 8021_W | | Run ID: TVHBTEX2_090813A | | Prep Date: 8/13/2009 | | Units: µg/L | |
|----------------------------------|--------|-----------------|-----------|-----------------------|------|--------------------------|-----------|----------------------|------|-------------|------|
| Batch ID: R49248-2 | | TestNo: SW8021B | | FileID: 1\DATA\081309 | | Analysis Date: 8/13/2009 | | SeqNo: 891827 | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Benzene | 30.72 | 1.0 | 27.2 | 2.82 | 103 | 70 | 130 | 0 | 0 | | |
| Toluene | 193.1 | 2.0 | 211.6 | 0 | 91.2 | 70 | 130 | 0 | 0 | | |
| Ethylbenzene | 45.86 | 2.0 | 57.2 | 0 | 80.2 | 62 | 130 | 0 | 0 | | |
| m,p-Xylene | 152.7 | 2.0 | 166 | 7.752 | 87.3 | 70 | 134 | 0 | 0 | | |
| o-Xylene | 65.94 | 2.0 | 80 | 0 | 82.4 | 63 | 130 | 0 | 0 | | |
| Surr: 1,2,4-Trichlorobenzene (S) | 112.7 | 0 | 100 | 0 | 113 | 60 | 140 | 0 | 0 | | |

| Sample ID: 09-6070-01AMSD | | SampType: MSD | | TestCode: 8021_W | | Run ID: TVHBTEX2_090813A | | Prep Date: 8/13/2009 | | Units: µg/L | |
|----------------------------------|--------|-----------------|-----------|-----------------------|------|--------------------------|-----------|----------------------|------|-------------|------|
| Batch ID: R49248-2 | | TestNo: SW8021B | | FileID: 1\DATA\081309 | | Analysis Date: 8/13/2009 | | SeqNo: 891828 | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Benzene | 31.12 | 1.0 | 27.2 | 2.82 | 104 | 70 | 130 | 30.72 | 1.31 | 30 | |
| Toluene | 195.9 | 2.0 | 211.6 | 0 | 92.6 | 70 | 130 | 193.1 | 1.45 | 30 | |
| Ethylbenzene | 46.5 | 2.0 | 57.2 | 0 | 81.3 | 62 | 130 | 45.86 | 1.38 | 30 | |
| m,p-Xylene | 154.8 | 2.0 | 166 | 7.752 | 88.6 | 70 | 134 | 152.7 | 1.36 | 30 | |
| o-Xylene | 67.01 | 2.0 | 80 | 0 | 83.8 | 63 | 130 | 65.94 | 1.60 | 30 | |
| Surr: 1,2,4-Trichlorobenzene (S) | 111.5 | 0 | 100 | 0 | 112 | 60 | 140 | 0 | 0 | 0 | |

Qualifiers:

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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: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

BatchID: 20322

| | | | | | | | | | | | |
|---------------------|-----------------|----------------------|------------------------------------|--------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MB-20322 | SampType: MBLK | TestCode: 200.7_D | Run ID: ICP-OPTIMA 5300 DV_090818A | Prep Date: 8/13/2009 | Units: mg/L | | | | | | |
| | Batch ID: 20322 | TestNo: E200.7, Rev. | FileID: 081709PM | Analysis Date: 8/19/2009 | SeqNo: 894703 | | | | | | |
| 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 | | | | | | | | | |
| Selenium | U | 0.100 | | | | | | | | | |

| | | | | | | | | | | | |
|---------------------|-----------------|----------------------|------------------------------------|--------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MB-20322 | SampType: MBLK | TestCode: 200.7_D | Run ID: ICP-OPTIMA 5300 DV_090819A | Prep Date: 8/13/2009 | Units: mg/L | | | | | | |
| | Batch ID: 20322 | TestNo: E200.7, Rev. | FileID: 081909AM | Analysis Date: 8/19/2009 | SeqNo: 895233 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Sodium | U | 0.400 | | | | | | | | | |

| | | | | | | | | | | | |
|--------|---|-------|--|--|--|--|--|--|--|--|--|
| Sodium | U | 0.400 | | | | | | | | | |
|--------|---|-------|--|--|--|--|--|--|--|--|--|

| | | | | | | | | | | | |
|----------------------|-----------------|----------------------|------------------------------------|--------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS-20322 | SampType: LCS | TestCode: 200.7_D | Run ID: ICP-OPTIMA 5300 DV_090818A | Prep Date: 8/13/2009 | Units: mg/L | | | | | | |
| | Batch ID: 20322 | TestNo: E200.7, Rev. | FileID: 081709PM | Analysis Date: 8/19/2009 | SeqNo: 894704 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|-----------|-------|---------|----|---|------|----|-----|---|---|--|--|
| Calcium | 10.14 | 0.387 | 10 | 0 | 101 | 85 | 115 | 0 | 0 | | |
| Iron | 5.126 | 0.0700 | 5 | 0 | 103 | 85 | 115 | 0 | 0 | | |
| Magnesium | 10.18 | 0.150 | 10 | 0 | 102 | 85 | 115 | 0 | 0 | | |
| Manganese | 1.929 | 0.00500 | 2 | 0 | 96.5 | 85 | 115 | 0 | 0 | | |
| Potassium | 10.23 | 0.340 | 10 | 0 | 102 | 85 | 115 | 0 | 0 | | |
| Selenium | 2.013 | 0.100 | 2 | 0 | 101 | 85 | 115 | 0 | 0 | | |

| | | | | | | | | | | | |
|----------------------|-----------------|----------------------|------------------------------------|--------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS-20322 | SampType: LCS | TestCode: 200.7_D | Run ID: ICP-OPTIMA 5300 DV_090819A | Prep Date: 8/13/2009 | Units: mg/L | | | | | | |
| | Batch ID: 20322 | TestNo: E200.7, Rev. | FileID: 081909AM | Analysis Date: 8/19/2009 | SeqNo: 895236 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|--------|-------|-------|----|---|-----|----|-----|---|---|--|--|
| Sodium | 10.31 | 0.400 | 10 | 0 | 103 | 85 | 115 | 0 | 0 | | |
|--------|-------|-------|----|---|-----|----|-----|---|---|--|--|

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 S - Spike Recovery outside acceptance limits
 E - Extrapolated value, value exceeds calibration range.
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 B - Analyte detected in the associated Method Blank
 H - Prep or analytical holding time exceeded
 X - See case narrative

Work Order: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

BatchID: 20322

| Sample ID: 09-6014-01EMS | | SampType: MS | TestCode: 200.7_D | | Run ID: ICP-OPTIMA 5300 DV_090818A | | | Prep Date: 8/13/2009 | | Units: mg/L | |
|--------------------------|--------|-----------------|----------------------|-------------|------------------------------------|----------|-----------|--------------------------|------|---------------|------|
| | | Batch ID: 20322 | TestNo: E200.7, Rev. | | FileID: 081709PM | | | Analysis Date: 8/19/2009 | | SeqNo: 894706 | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Calcium | 19.5 | 0.430 | 11.11 | 9.211 | 92.6 | 75 | 125 | 0 | 0 | | |
| Iron | 5.56 | 0.0778 | 5.556 | 0 | 100 | 75 | 125 | 0 | 0 | | |
| Magnesium | 13.23 | 0.167 | 11.11 | 2.327 | 98.1 | 75 | 125 | 0 | 0 | | |
| Manganese | 2.066 | 0.00556 | 2.222 | 0.02161 | 92 | 75 | 125 | 0 | 0 | | |
| Potassium | 12.96 | 0.378 | 11.11 | 1.914 | 99.4 | 75 | 125 | 0 | 0 | | |
| Selenium | 1.803 | 0.111 | 2.222 | 0 | 81.1 | 75 | 125 | 0 | 0 | | |

| Sample ID: 09-6014-01EMS | | SampType: MS | TestCode: 200.7_D | | Run ID: ICP-OPTIMA 5300 DV_090819A | | | Prep Date: 8/13/2009 | | Units: mg/L | |
|--------------------------|--------|-----------------|----------------------|-------------|------------------------------------|----------|-----------|--------------------------|------|---------------|------|
| | | Batch ID: 20322 | TestNo: E200.7, Rev. | | FileID: 081909AM | | | Analysis Date: 8/19/2009 | | SeqNo: 895238 | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Sodium | 212.2 | 0.444 | 11.11 | 220.9 | -78.2 | 75 | 125 | 0 | 0 | | S |

| Sample ID: 09-6014-01EMSD | | SampType: MSD | TestCode: 200.7_D | | Run ID: ICP-OPTIMA 5300 DV_090818A | | | Prep Date: 8/13/2009 | | Units: mg/L | |
|---------------------------|--------|-----------------|----------------------|-------------|------------------------------------|----------|-----------|--------------------------|-------|---------------|------|
| | | Batch ID: 20322 | TestNo: E200.7, Rev. | | FileID: 081709PM | | | Analysis Date: 8/19/2009 | | SeqNo: 894707 | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Calcium | 19.58 | 0.430 | 11.11 | 9.211 | 93.3 | 75 | 125 | 19.5 | 0.398 | 20 | |
| Iron | 5.66 | 0.0778 | 5.556 | 0 | 102 | 75 | 125 | 5.56 | 1.79 | 20 | |
| Magnesium | 13.42 | 0.167 | 11.11 | 2.327 | 99.8 | 75 | 125 | 13.23 | 1.42 | 20 | |
| Manganese | 2.093 | 0.00556 | 2.222 | 0.02161 | 93.2 | 75 | 125 | 2.066 | 1.28 | 20 | |
| Potassium | 13.18 | 0.378 | 11.11 | 1.914 | 101 | 75 | 125 | 12.96 | 1.71 | 20 | |
| Selenium | 1.833 | 0.111 | 2.222 | 0 | 82.5 | 75 | 125 | 1.803 | 1.65 | 20 | |

| Sample ID: 09-6014-01EMSD | | SampType: MSD | TestCode: 200.7_D | | Run ID: ICP-OPTIMA 5300 DV_090819A | | | Prep Date: 8/13/2009 | | Units: mg/L | |
|---------------------------|--------|-----------------|----------------------|-------------|------------------------------------|----------|-----------|--------------------------|------|---------------|------|
| | | Batch ID: 20322 | TestNo: E200.7, Rev. | | FileID: 081909AM | | | Analysis Date: 8/19/2009 | | SeqNo: 895239 | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Sodium | 209.5 | 0.444 | 11.11 | 220.9 | -102 | 75 | 125 | 212.2 | 1.27 | 20 | S |

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R - RPD outside acceptance limits
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H - Prep or analytical holding time exceeded
X - See case narrative

Work Order: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

BatchID: 20361

| | | | | | | | | | | | |
|----------------------------|------------------------|-----------------------------|---|---------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MB-20361 | SampType: MBLK | TestCode: 200.7_T | Run ID: ICP-OPTIMA 5300 DV_090819A | Prep Date: 8/17/2009 | Units: mg/L | | | | | | |
| | Batch ID: 20361 | TestNo: E200.7, Rev. | FileID: 081909AM | Analysis Date: 8/19/2009 | SeqNo: 895408 | | | | | | |
| 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 | | | | | | | | | |
| Manganese | U | 0.00500 | | | | | | | | | |
| Potassium | U | 0.340 | | | | | | | | | |
| Selenium | U | 0.100 | | | | | | | | | |
| Sodium | U | 0.400 | | | | | | | | | |

| Sample ID: MB-20361 | SampType: MBLK | TestCode: 200.7_T | Run ID: ICP-OPTIMA 5300 DV_090822A | Prep Date: 8/17/2009 | Units: mg/L | | | | | | |
|----------------------------|------------------------|-----------------------------|---|---------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| | Batch ID: 20361 | TestNo: E200.7, Rev. | FileID: 082209PM | Analysis Date: 8/22/2009 | SeqNo: 896636 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Magnesium | U | 0.150 | | | | | | | | | |

| | | | | | | | | | | | |
|----------------------|-----------------|----------------------|------------------------------------|-------------|------|----------|--------------------------|---------------|------|----------|------|
| Sample ID: LCS-20361 | SampType: LCS | TestCode: 200.7_T | Run ID: ICP-OPTIMA 5300 DV_090819A | | | | Prep Date: 8/17/2009 | Units: mg/L | | | |
| | Batch ID: 20361 | TestNo: E200.7, Rev. | FileID: 081909AM | | | | Analysis Date: 8/19/2009 | SeqNo: 895409 | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Calcium | 9.765 | 0.387 | 10 | 0 | 97.6 | 85 | 115 | 0 | 0 | | |
| Iron | 4.972 | 0.0700 | 5 | 0 | 99.4 | 85 | 115 | 0 | 0 | | |
| Manganese | 1.83 | 0.00500 | 2 | 0 | 91.5 | 85 | 115 | 0 | 0 | | |
| Potassium | 10.22 | 0.340 | 10 | 0 | 102 | 85 | 115 | 0 | 0 | | |
| Selenium | 2.064 | 0.100 | 2 | 0 | 103 | 85 | 115 | 0 | 0 | | |
| Sodium | 10.33 | 0.400 | 10 | 0.1626 | 103 | 85 | 115 | 0 | 0 | | |

| Sample ID: LCS-20361 | SampType: LCS | TestCode: 200.7_T | Run ID: ICP-OPTIMA 5300 DV_090822A | Prep Date: 8/17/2009 | Units: mg/L | | | | | | |
|----------------------|-----------------|----------------------|------------------------------------|--------------------------|---------------|----------|-----------|-------------|------|----------|------|
| | Batch ID: 20361 | TestNo: E200.7, Rev. | FileID: 082209PM | Analysis Date: 8/22/2009 | SeqNo: 896637 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Magnesium | 9.256 | 0.150 | 10 | 0.08483 | 92.6 | 85 | 115 | 0 | 0 | | |

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- H - Prep or analytical holding time exceeded
- X - See case narrative

Work Order: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

BatchID: 20361

| | | | | | | | | | | | |
|--------------------------|-----------------|----------------------|------------------------------------|--------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID: 09-5868-01EMS | SampType: MS | TestCode: 200.7_T | Run ID: ICP-OPTIMA 5300 DV_090819A | Prep Date: 8/17/2009 | Units: mg/L | | | | | | |
| | Batch ID: 20361 | TestNo: E200.7, Rev. | FileID: 081909AM | Analysis Date: 8/19/2009 | SeqNo: 895411 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|-----------|-------|---------|----|--------|------|----|-----|---|---|--|--|
| Calcium | 29.42 | 0.387 | 10 | 20.43 | 89.8 | 75 | 125 | 0 | 0 | | |
| Iron | 5.344 | 0.0700 | 5 | 0 | 107 | 75 | 125 | 0 | 0 | | |
| Manganese | 1.972 | 0.00500 | 2 | 0.0435 | 96.4 | 75 | 125 | 0 | 0 | | |
| Potassium | 12.73 | 0.340 | 10 | 1.846 | 109 | 75 | 125 | 0 | 0 | | |
| Selenium | 2.125 | 0.100 | 2 | 0 | 106 | 75 | 125 | 0 | 0 | | |
| Sodium | 20.13 | 0.400 | 10 | 9.829 | 103 | 75 | 125 | 0 | 0 | | |

| | | | | | | | | | | | |
|--------------------------|-----------------|----------------------|------------------------------------|--------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID: 09-5868-01EMS | SampType: MS | TestCode: 200.7_T | Run ID: ICP-OPTIMA 5300 DV_090822A | Prep Date: 8/17/2009 | Units: mg/L | | | | | | |
| | Batch ID: 20361 | TestNo: E200.7, Rev. | FileID: 082209PM | Analysis Date: 8/22/2009 | SeqNo: 896639 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Magnesium | 13.31 | 0.150 | 10 | 3.863 | 94.5 | 75 | 125 | 0 | 0 | | |

| | | | | | | | | | | | |
|-----------|-------|-------|----|-------|------|----|-----|---|---|--|--|
| Magnesium | 13.31 | 0.150 | 10 | 3.863 | 94.5 | 75 | 125 | 0 | 0 | | |
|-----------|-------|-------|----|-------|------|----|-----|---|---|--|--|

| | | | | | | | | | | | |
|---------------------------|-----------------|----------------------|------------------------------------|--------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID: 09-5868-01EMSD | SampType: MSD | TestCode: 200.7_T | Run ID: ICP-OPTIMA 5300 DV_090819A | Prep Date: 8/17/2009 | Units: mg/L | | | | | | |
| | Batch ID: 20361 | TestNo: E200.7, Rev. | FileID: 081909AM | Analysis Date: 8/19/2009 | SeqNo: 895414 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|-----------|-------|---------|----|--------|------|----|-----|-------|------|----|--|
| Calcium | 28.63 | 0.387 | 10 | 20.43 | 81.9 | 75 | 125 | 29.42 | 2.72 | 20 | |
| Iron | 5.162 | 0.0700 | 5 | 0 | 103 | 75 | 125 | 5.344 | 3.46 | 20 | |
| Manganese | 1.915 | 0.00500 | 2 | 0.0435 | 93.6 | 75 | 125 | 1.972 | 2.92 | 20 | |
| Potassium | 12.36 | 0.340 | 10 | 1.846 | 105 | 75 | 125 | 12.73 | 2.89 | 20 | |
| Selenium | 2.053 | 0.100 | 2 | 0 | 103 | 75 | 125 | 2.125 | 3.45 | 20 | |
| Sodium | 19.54 | 0.400 | 10 | 9.829 | 97.1 | 75 | 125 | 20.13 | 2.96 | 20 | |

| | | | | | | | | | | | |
|---------------------------|--------|-----------------|----------------------|-------------|------------------------------------|----------|--------------------------|-------------|---------------|----------|------|
| Sample ID: 09-5868-01EMSD | | SampType: MSD | TestCode: 200.7_T | | Run ID: ICP-OPTIMA 5300 DV_090822A | | Prep Date: 8/17/2009 | | Units: mg/L | | |
| | | Batch ID: 20361 | TestNo: E200.7, Rev. | | FileID: 082209PM | | Analysis Date: 8/22/2009 | | SeqNo: 896640 | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|-----------|-------|-------|----|-------|------|----|-----|-------|------|----|--|
| Magnesium | 12.96 | 0.150 | 10 | 3.863 | 90.9 | 75 | 125 | 13.31 | 2.70 | 20 | |
|-----------|-------|-------|----|-------|------|----|-----|-------|------|----|--|

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 E - Extrapolated value, value exceeds calibration range.

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 X - See case narrative

Work Order: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

TestNo: E300.0

| | | | | | | | | | | | |
|------------------------|------------------|--------------------|--------------------------|------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MB 08/12/09 | SampType: MBLK | TestCode: ANIONS_W | Run ID: IC-DX120_090812A | Prep Date: 8/12/09 | Units: mg/L | | | | | | |
| | Batch ID: R49226 | TestNo: E300.0 | FileID: | Analysis Date: 8/12/09 | SeqNo: 891251 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|-------------------|---|--------|--|--|--|--|--|--|--|--|--|
| Chloride | U | 0.50 | | | | | | | | | |
| Nitrite-N | U | 0.0040 | | | | | | | | | |
| Bromide | U | 0.050 | | | | | | | | | |
| Nitrate-N | U | 0.010 | | | | | | | | | |
| Nitrite+Nitrate-N | U | 0.010 | | | | | | | | | |
| Sulfate | U | 0.50 | | | | | | | | | |

| | | | | | | | | | | | |
|---------------------------|------------------|--------------------|--------------------------|------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS ALLT218076 | SampType: LCS | TestCode: ANIONS_W | Run ID: IC-DX120_090812A | Prep Date: 8/12/09 | Units: mg/L | | | | | | |
| | Batch ID: R49226 | TestNo: E300.0 | FileID: | Analysis Date: 8/12/09 | SeqNo: 891250 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | | | |
|-------------------|-------|-------|-------|---|------|----|-----|---|---|--|--|
| Chloride | 18.97 | 2.5 | 20 | 0 | 94.9 | 90 | 110 | 0 | 0 | | |
| Nitrite-N | 6.041 | 0.020 | 6.09 | 0 | 99.2 | 90 | 110 | 0 | 0 | | |
| Bromide | 20.27 | 0.25 | 20 | 0 | 101 | 90 | 110 | 0 | 0 | | |
| Nitrate-N | 4.468 | 0.050 | 4.518 | 0 | 98.9 | 90 | 110 | 0 | 0 | | |
| Nitrite+Nitrate-N | 10.51 | 0.050 | 10.61 | 0 | 99.1 | 90 | 110 | 0 | 0 | | |
| Sulfate | 29.13 | 2.5 | 30 | 0 | 97.1 | 90 | 110 | 0 | 0 | | |

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

Evergreen Analytical, Inc.

Date: 12-Aug-09

Work Order: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

TestCode: MEEP_W

| | | | | | | | | | | | |
|----------------------------|----------------------------|--------------------------|-----------------------------|--------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: GB081209 | SampType: MBLK | TestCode: MEEP_W | Run ID: FID4_090812A | Prep Date: 08/12/09 | Units: mg/L | | | | | | |
| | Batch ID: GAS081209 | TestNo: RSKSOP175 | FileID: FB391 | Analysis Date: 08/12/09 | SeqNo: 890737 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Methane | U | 0.0080 | | | | | | | | | |

| | | | | | | | | | | | |
|-----------------------------|----------------------------|--------------------------|-----------------------------|--------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS081209 | SampType: LCS | TestCode: MEEP_W | Run ID: FID4_090812A | Prep Date: 08/12/09 | Units: mg/L | | | | | | |
| | Batch ID: GAS081209 | TestNo: RSKSOP175 | FileID: FB392 | Analysis Date: 08/12/09 | SeqNo: 890738 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Methane | 0.5203 | 0.0080 | 0.5094 | 0 | 102 | 70 | 130 | 0 | 0 | | |

| | | | | | | | | | | | |
|------------------------------|----------------------------|--------------------------|-----------------------------|--------------------------------|----------------------|----------|-----------|-------------|-------|----------|------|
| Sample ID: LCSD081209 | SampType: LCSD | TestCode: MEEP_W | Run ID: FID4_090812A | Prep Date: 08/12/09 | Units: mg/L | | | | | | |
| | Batch ID: GAS081209 | TestNo: RSKSOP175 | FileID: FB393 | Analysis Date: 08/12/09 | SeqNo: 890739 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Methane | 0.523 | 0.0080 | 0.5094 | 0 | 103 | 70 | 130 | 0.5203 | 0.512 | 30 | |

| | | | | | | | | | | | |
|---------------------------------|----------------------------|--------------------------|-----------------------------|--------------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: 09-6083-01BMS | SampType: MS | TestCode: MEEP_W | Run ID: FID4_090812A | Prep Date: 08/12/09 | Units: mg/L | | | | | | |
| | Batch ID: GAS081209 | TestNo: RSKSOP175 | FileID: FB410 | Analysis Date: 08/12/09 | SeqNo: 890734 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Methane | 0.7152 | 0.0080 | 0.5094 | 0.1933 | 102 | 70 | 130 | 0 | 0 | | |

| | | | | | | | | | | | |
|----------------------------------|----------------------------|--------------------------|-----------------------------|--------------------------------|----------------------|----------|-----------|-------------|-------|----------|------|
| Sample ID: 09-6083-01BMSD | SampType: MSD | TestCode: MEEP_W | Run ID: FID4_090812A | Prep Date: 08/12/09 | Units: mg/L | | | | | | |
| | Batch ID: GAS081209 | TestNo: RSKSOP175 | FileID: FB411 | Analysis Date: 08/12/09 | SeqNo: 890735 | | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Methane | 0.71 | 0.0080 | 0.5094 | 0.1933 | 101 | 70 | 130 | 0.7152 | 0.724 | 30 | |

Qualifiers:

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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: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

TestCode: CARB/BICARB_W

| | | | | | | | | | | | | |
|-------------|--------------|------------------|----------------------|---------------------|--------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID | MBLK 8/19/09 | SampType: MBLK | TestCode: CARB/BICAR | Run ID: ALK_090819A | Prep Date: 8/19/2009 | Units: mg/L | | | | | | |
| | | Batch ID: R49356 | TestNo: SM2320 B | FileID: 137 | Analysis Date: 8/19/2009 | SeqNo: 894429 | | | | | | |
| Analyte | | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Bicarbonate | | U | 5.0 | | | | | | | | | |
| Carbonate | | U | 5.0 | | | | | | | | | |

| | | | | | | | | | | | | |
|-------------|-----|------------------|----------------------|---------------------|--------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID | LCS | SampType: LCS | TestCode: CARB/BICAR | Run ID: ALK_090819A | Prep Date: 8/19/2009 | Units: mg/L | | | | | | |
| | | Batch ID: R49356 | TestNo: SM2320 B | FileID: 138 | Analysis Date: 8/19/2009 | SeqNo: 894430 | | | | | | |
| Analyte | | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Bicarbonate | | 100 | 5.0 | 100 | 0 | 100 | 90 | 110 | 0 | 0 | | |

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X - See case narrative

Work Order: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

TestCode: COND_W

| | | | | | | | | | | | |
|----------------------|--------|------------------|------------------|----------------------|--------------------------|-----------------|-----------|-------------|------|----------|------|
| Sample ID | LCS | SampType: LCS | TestCode: COND_W | Run ID: COND_090814A | Prep Date: 8/14/2009 | Units: μmhos/cm | | | | | |
| | | Batch ID: R49266 | TestNo: SM2510 B | FileID: 1 | Analysis Date: 8/14/2009 | SeqNo: 892312 | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Specific Conductance | 93.7 | 1.00 | 99.7 | 0 | 94 | 90 | 110 | 0 | 0 | | |

| | | | | | | | | | | | |
|----------------------|--------|------------------|------------------|----------------------|--------------------------|-----------------|-----------|-------------|------|----------|------|
| Sample ID | LCS | SampType: LCS | TestCode: COND_W | Run ID: COND_090814A | Prep Date: 8/14/2009 | Units: μmhos/cm | | | | | |
| | | Batch ID: R49266 | TestNo: SM2510 B | FileID: 1 | Analysis Date: 8/14/2009 | SeqNo: 892340 | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Specific Conductance | 94.2 | 1.00 | 99.7 | 0 | 94.5 | 90 | 110 | 0 | 0 | | |

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X - See case narrative

Work Order: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

TestCode: F_W

| | | | | | | | | | | | |
|-----------|---------------|------------------|---------------------|-------------------|--------------------------|---------------|-----------|-------------|------|----------|------|
| Sample ID | MBLK 08/13/09 | SampType: MBLK | TestCode: F_W | Run ID: F_090813A | Prep Date: 8/13/2009 | Units: mg/L | | | | | |
| | | Batch ID: R49240 | TestNo: SM 4500-F C | FileID: 1 | Analysis Date: 8/13/2009 | SeqNo: 891408 | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Fluoride U 0.20

| | | | | | | | | | | | |
|-----------|---------------|------------------|---------------------|-------------------|--------------------------|---------------|-----------|-------------|------|----------|------|
| Sample ID | MBLK 08/13/09 | SampType: MBLK | TestCode: F_W | Run ID: F_090813A | Prep Date: 8/13/2009 | Units: mg/L | | | | | |
| | | Batch ID: R49240 | TestNo: SM 4500-F C | FileID: 1 | Analysis Date: 8/13/2009 | SeqNo: 891433 | | | | | |
| 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_090813A | Prep Date: 8/13/2009 | Units: mg/L | | | | | |
| | | Batch ID: R49240 | TestNo: SM 4500-F C | FileID: 2 | Analysis Date: 8/13/2009 | SeqNo: 891409 | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Fluoride 9.688 0.20 10 0 96.9 95 105 0 0

| | | | | | | | | | | | | |
|-----------|-----|------------------|---------------------|-------------------|--------------------------|---------------|----------|-----------|-------------|------|----------|------|
| Sample ID | LCS | SampType: LCS | TestCode: F_W | Run ID: F_090813A | Prep Date: 8/13/2009 | Units: mg/L | | | | | | |
| | | Batch ID: R49240 | TestNo: SM 4500-F C | FileID: 2 | Analysis Date: 8/13/2009 | SeqNo: 891434 | | | | | | |
| Analyte | | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

Fluoride 10.04 0.20 10 0 100 95 105 0 0

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 X - See case narrative

Work Order: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

TestCode: PH_DW

| | | | | | | | | | | | |
|-----------|------------|------------------|-----------------|--------------------|--------------------------|-----------------|-----------|-------------|------|----------|------|
| Sample ID | LCS-R49190 | SampType: LCS | TestCode: PH_DW | Run ID: PH_090812A | Prep Date: 8/12/2009 | Units: pH Units | | | | | |
| | | Batch ID: R49190 | TestNo: E150.1 | FileID: | Analysis Date: 8/12/2009 | SeqNo: 890275 | | | | | |
| Analyte | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| pH | 7.99 | 1.00 | 8 | 0 | 99.9 | 99.3 | 100.7 | 0 | 0 | | |

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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: 09-6049

Client Project ID:

ANALYTICAL QC SUMMARY REPORT

TestCode: TDS_W

| | | | | | | | | | | | | | |
|-----------|-------------|-----------|--------|-----------|-----------|-------------|----------------------------|----------|-----------|----------------|-----------|----------|--------|
| Sample ID | MBLK 081309 | SampType: | MBLK | TestCode: | TDS_W | Run ID: | ANALYTICAL BALANCE_190813A | | | Prep Date: | 8/13/2009 | Units: | mg/L |
| | | Batch ID: | R49267 | TestNo: | SM 2540C | FileID: | 47 | | | Analysis Date: | 8/13/2009 | SeqNo: | 892351 |
| 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_190813A | Prep Date: 8/13/2009 | Units: mg/L | | | | | | |
| | | Batch ID: R49267 | TestNo: SM 2540C | FileID: 48 | Analysis Date: 8/13/2009 | SeqNo: 892352 | | | | | | |
| Analyte | | Result | LQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |

| | | | | | | | | | |
|------------------------|-----|------|-----|---|------|----|-----|---|---|
| Total Dissolved Solids | 398 | 10.0 | 400 | 0 | 99.5 | 90 | 110 | 0 | 0 |
|------------------------|-----|------|-----|---|------|----|-----|---|---|

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