



12065 Lebanon Rd.
Mt. Juliet, TN 37122
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ken Kreie
Olsson Associates - GJ, CO
826 21 1/2 Road
Grand Junction, CO 81505

Report Summary

Tuesday June 22, 2010

Report Number: L463344

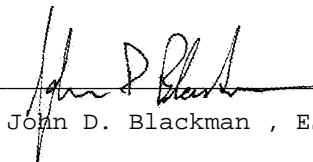
Samples Received: 06/09/10

Client Project:

Description: Delta Bogue Gulch PL

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:


John D. Blackman , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A

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REPORT OF ANALYSIS

Ken Kreie
Olsson Associates - GJ, CO
826 21 1/2 Road
Grand Junction, CO 81505

June 22, 2010

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL
Sample ID : DELTA IRR DITCH UG
Collected By : Stuart Hall
Collection Date : 06/08/10 11:10

ESC Sample # : L463344-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	26.	1.0	mg/l	9056	06/12/10	1
Sulfate	100	10.	mg/l	9056	06/12/10	2
pH	8.4		su	9040C	06/12/10	1
Specific Conductance	790		umhos/cm	9050A	06/10/10	1
Dissolved Solids	500	10.	mg/l	2540C	06/14/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/22/10 12:37 Printed: 06/22/10 12:38
L463344-01 (PH) - 8.4@20.3c



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REPORT OF ANALYSIS

June 22, 2010

Ken Kreie
Olsson Associates - GJ, CO
826 21 1/2 Road
Grand Junction, CO 81505

ESC Sample # : L463344-02

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL

Site ID :

Sample ID : DELTA IRR DITCH DG

Project # :

Collected By : Stuart Hall
Collection Date : 06/08/10 11:20

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	26.	1.0	mg/l	9056	06/12/10	1
Sulfate	100	10.	mg/l	9056	06/12/10	2
pH	8.4		su	9040C	06/12/10	1
Specific Conductance	780		umhos/cm	9050A	06/10/10	1
Dissolved Solids	500	10.	mg/l	2540C	06/15/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L463344-02 (PH) - 8.4@20.2c



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REPORT OF ANALYSIS

June 22, 2010

Ken Kreie
Olsson Associates - GJ, CO
826 21 1/2 Road
Grand Junction, CO 81505

ESC Sample # : L463344-03

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL

Site ID :

Sample ID : DELTA IRR DITCH DG2

Project # :

Collected By : Stuart Hall
Collection Date : 06/08/10 11:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	26.	1.0	mg/l	9056	06/12/10	1
Sulfate	100	10.	mg/l	9056	06/12/10	2
pH	8.4		su	9040C	06/12/10	1
Specific Conductance	790		umhos/cm	9050A	06/10/10	1
Dissolved Solids	500	10.	mg/l	2540C	06/15/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Reported: 06/22/10 12:37 Printed: 06/22/10 12:38

L463344-03 (PH) - 8.4@20.3c



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Grand Junction, CO 81505

June 22, 2010

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL
Sample ID : BOGUE GULCH D6
Collected By : Stuart Hall
Collection Date : 06/08/10 11:40

ESC Sample # : L463344-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	24.	1.0	mg/l	9056	06/12/10	1
Sulfate	120	10.	mg/l	9056	06/12/10	2
pH	7.9		su	9040C	06/12/10	1
Specific Conductance	930		umhos/cm	9050A	06/10/10	1
Dissolved Solids	580	10.	mg/l	2540C	06/15/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L463344-04 (PH) - 7.9@20.3c



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826 21 1/2 Road
Grand Junction, CO 81505

June 22, 2010

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL
Sample ID : BOGUE GULCH U6
Collected By : Stuart Hall
Collection Date : 06/08/10 11:50

ESC Sample # : L463344-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	23.	1.0	mg/l	9056	06/12/10	1
Sulfate	120	10.	mg/l	9056	06/12/10	2
pH	7.9		su	9040C	06/12/10	1
Specific Conductance	940		umhos/cm	9050A	06/10/10	1
Dissolved Solids	600	10.	mg/l	2540C	06/15/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L463344-05 (PH) - 7.9@20.3c



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June 22, 2010

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL

Sample ID : SS1

Collected By : Stuart Hall
Collection Date : 06/08/10 12:30

ESC Sample # : L463344-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	06/11/10	1
Chromium, Trivalent	13.	0.50	mg/kg	Calc.	06/20/10	1
Sodium Adsorption Ratio	46.			Calc.	06/11/10	1
Specific Conductance	3000		umhos/cm	9050AMod	06/10/10	1
Mercury	0.029	0.020	mg/kg	7471	06/10/10	1
Arsenic	3.1	1.0	mg/kg	6010B	06/20/10	1
Barium	220	0.25	mg/kg	6010B	06/20/10	1
Cadmium	0.26	0.25	mg/kg	6010B	06/20/10	1
Chromium	13.	0.50	mg/kg	6010B	06/20/10	1
Copper	16.	1.0	mg/kg	6010B	06/20/10	1
Lead	9.0	0.25	mg/kg	6010B	06/20/10	1
Nickel	16.	1.0	mg/kg	6010B	06/20/10	1
Selenium	BDL	5.0	mg/kg	6010B	06/20/10	5
Silver	0.71	0.50	mg/kg	6010B	06/20/10	1
Zinc	47.	1.5	mg/kg	6010B	06/20/10	1
TPH (GC/FID) Low Fraction	290	10.	mg/kg	8015D/GRO	06/16/10	100
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	73.9		% Rec.	602/8015	06/16/10	100
Benzene	0.056	0.0050	mg/kg	8260B	06/18/10	5
Toluene	0.84	0.025	mg/kg	8260B	06/18/10	5
Ethylbenzene	0.090	0.0050	mg/kg	8260B	06/18/10	5
Total Xylenes	76.	1.5	mg/kg	8260B	06/21/10	500
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	06/18/10	5
Surrogate Recovery						
Toluene-d8	140.		% Rec.	8260B	06/18/10	5
Dibromofluoromethane	98.9		% Rec.	8260B	06/18/10	5
4-Bromofluorobenzene	127.		% Rec.	8260B	06/18/10	5
TPH (GC/FID) High Fraction	120	4.0	mg/kg	3546/DRO	06/10/10	1
Surrogate recovery(%)						
o-Terphenyl	64.9		% Rec.	3546/DRO	06/10/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.33	mg/kg	8270C	06/14/10	10
Acenaphthene	BDL	0.33	mg/kg	8270C	06/14/10	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	06/14/10	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	06/14/10	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)



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June 22, 2010

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL

Sample ID : SS1

Collected By : Stuart Hall
Collection Date : 06/08/10 12:30

ESC Sample # : L463344-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	06/14/10	10
Benzo(b)fluoranthene	BDL	0.33	mg/kg	8270C	06/14/10	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	06/14/10	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	06/14/10	10
Chrysene	BDL	0.33	mg/kg	8270C	06/14/10	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	06/14/10	10
Fluoranthene	BDL	0.33	mg/kg	8270C	06/14/10	10
Fluorene	BDL	0.33	mg/kg	8270C	06/14/10	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	06/14/10	10
Naphthalene	0.62	0.33	mg/kg	8270C	06/14/10	10
1-MethylNaphthalene	0.69	0.33	mg/kg	8270C	06/14/10	10
2-MethylNaphthalene	1.8	0.20	mg/kg	8270C	06/14/10	10
Phenanthrene	BDL	0.33	mg/kg	8270C	06/14/10	10
Pyrene	BDL	0.33	mg/kg	8270C	06/14/10	10
Surrogate Recovery						
Nitrobenzene-d5	111.		% Rec.	8270C	06/14/10	10
2-Fluorobiphenyl	88.5		% Rec.	8270C	06/14/10	10
p-Terphenyl-d14	90.5		% Rec.	8270C	06/14/10	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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June 22, 2010

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL

Sample ID : SS2

Collected By : Stuart Hall
Collection Date : 06/08/10 13:10

ESC Sample # : L463344-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	10.	mg/kg	3060A/7196A	06/11/10	5
Chromium, Trivalent	15.	0.50	mg/kg	Calc.	06/20/10	1
Sodium Adsorption Ratio	54.			Calc.	06/11/10	1
Specific Conductance	4000		umhos/cm	9050AMod	06/10/10	1
Mercury	BDL	0.020	mg/kg	7471	06/10/10	1
Arsenic	1.3	1.0	mg/kg	6010B	06/20/10	1
Barium	180	0.25	mg/kg	6010B	06/20/10	1
Cadmium	BDL	0.25	mg/kg	6010B	06/20/10	1
Chromium	15.	0.50	mg/kg	6010B	06/20/10	1
Copper	17.	1.0	mg/kg	6010B	06/20/10	1
Lead	9.9	0.25	mg/kg	6010B	06/20/10	1
Nickel	17.	1.0	mg/kg	6010B	06/20/10	1
Selenium	BDL	5.0	mg/kg	6010B	06/20/10	5
Silver	0.84	0.50	mg/kg	6010B	06/20/10	1
Zinc	52.	1.5	mg/kg	6010B	06/20/10	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/13/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	88.0		% Rec.	602/8015	06/13/10	5
Benzene	BDL	0.0050	mg/kg	8260B	06/19/10	5
Toluene	BDL	0.025	mg/kg	8260B	06/19/10	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	06/19/10	5
Total Xylenes	BDL	0.015	mg/kg	8260B	06/19/10	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	06/19/10	5
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	06/19/10	5
Dibromofluoromethane	97.0		% Rec.	8260B	06/19/10	5
4-Bromofluorobenzene	109.		% Rec.	8260B	06/19/10	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	06/10/10	1
Surrogate recovery(%) o-Terphenyl	68.2		% Rec.	3546/DRO	06/10/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.33	mg/kg	8270C	06/14/10	10
Acenaphthene	BDL	0.33	mg/kg	8270C	06/14/10	10
Acenaphthylene	BDL	0.33	mg/kg	8270C	06/14/10	10
Benzo(a)anthracene	BDL	0.33	mg/kg	8270C	06/14/10	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

L463344-07 (PAH BY GCMS) - Diluted due to matrix

L463344-07 (CR6) - reducer



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June 22, 2010

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL

Sample ID : SS2

Collected By : Stuart Hall
Collection Date : 06/08/10 13:10

ESC Sample # : L463344-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.33	mg/kg	8270C	06/14/10	10
Benzo(b)fluoranthene	BDL	0.33	mg/kg	8270C	06/14/10	10
Benzo(g,h,i)perylene	BDL	0.33	mg/kg	8270C	06/14/10	10
Benzo(k)fluoranthene	BDL	0.33	mg/kg	8270C	06/14/10	10
Chrysene	BDL	0.33	mg/kg	8270C	06/14/10	10
Dibenz(a,h)anthracene	BDL	0.33	mg/kg	8270C	06/14/10	10
Fluoranthene	BDL	0.33	mg/kg	8270C	06/14/10	10
Fluorene	BDL	0.33	mg/kg	8270C	06/14/10	10
Indeno(1,2,3-cd)pyrene	BDL	0.33	mg/kg	8270C	06/14/10	10
Naphthalene	BDL	0.33	mg/kg	8270C	06/14/10	10
1-MethylNaphthalene	BDL	0.33	mg/kg	8270C	06/14/10	10
2-MethylNaphthalene	BDL	0.20	mg/kg	8270C	06/14/10	10
Phenanthrene	BDL	0.33	mg/kg	8270C	06/14/10	10
Pyrene	BDL	0.33	mg/kg	8270C	06/14/10	10
Surrogate Recovery						
Nitrobenzene-d5	68.8		% Rec.	8270C	06/14/10	10
2-Fluorobiphenyl	75.6		% Rec.	8270C	06/14/10	10
p-Terphenyl-d14	61.5		% Rec.	8270C	06/14/10	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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L463344-07 (PAH BY GCMS) - Diluted due to matrix

L463344-07 (CR6) - reducer



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Date Received : June 09, 2010
Description : Delta Bogue Gulch PL

Sample ID : SS3

Collected By : Stuart Hall
Collection Date : 06/08/10 13:30

ESC Sample # : L463344-08

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	10.	mg/kg	3060A/7196A	06/11/10	5
Chromium, Trivalent	12.	0.50	mg/kg	Calc.	06/20/10	1
Sodium Adsorption Ratio	54.			Calc.	06/11/10	1
Specific Conductance	3400		umhos/cm	9050AMod	06/10/10	1
Mercury	BDL	0.020	mg/kg	7471	06/10/10	1
Arsenic	3.0	1.0	mg/kg	6010B	06/20/10	1
Barium	200	0.25	mg/kg	6010B	06/20/10	1
Cadmium	0.26	0.25	mg/kg	6010B	06/20/10	1
Chromium	12.	0.50	mg/kg	6010B	06/20/10	1
Copper	15.	1.0	mg/kg	6010B	06/20/10	1
Lead	8.8	0.25	mg/kg	6010B	06/20/10	1
Nickel	14.	1.0	mg/kg	6010B	06/20/10	1
Selenium	BDL	5.0	mg/kg	6010B	06/20/10	5
Silver	0.57	0.50	mg/kg	6010B	06/20/10	1
Zinc	45.	1.5	mg/kg	6010B	06/20/10	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/13/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	88.1		% Rec.	602/8015	06/13/10	5
Benzene	BDL	0.0050	mg/kg	8260B	06/18/10	5
Toluene	BDL	0.025	mg/kg	8260B	06/18/10	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	06/18/10	5
Total Xylenes	BDL	0.015	mg/kg	8260B	06/18/10	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	06/18/10	5
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	06/18/10	5
Dibromofluoromethane	108.		% Rec.	8260B	06/18/10	5
4-Bromofluorobenzene	101.		% Rec.	8260B	06/18/10	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	06/10/10	1
Surrogate recovery(%) o-Terphenyl	62.2		% Rec.	3546/DRO	06/10/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.033	mg/kg	8270C	06/14/10	1
Acenaphthene	BDL	0.033	mg/kg	8270C	06/14/10	1
Acenaphthylene	BDL	0.033	mg/kg	8270C	06/14/10	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	06/14/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

L463344-08 (CR6) - diluted after digestion due to dark color



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Olsson Associates - GJ, CO
826 21 1/2 Road
Grand Junction, CO 81505

June 22, 2010

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL

Sample ID : SS3

Collected By : Stuart Hall
Collection Date : 06/08/10 13:30

ESC Sample # : L463344-08

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	06/14/10	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	06/14/10	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	06/14/10	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	06/14/10	1
Chrysene	BDL	0.033	mg/kg	8270C	06/14/10	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	06/14/10	1
Fluoranthene	BDL	0.033	mg/kg	8270C	06/14/10	1
Fluorene	BDL	0.033	mg/kg	8270C	06/14/10	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	06/14/10	1
Naphthalene	BDL	0.033	mg/kg	8270C	06/14/10	1
1-MethylNaphthalene	BDL	0.033	mg/kg	8270C	06/14/10	1
2-MethylNaphthalene	BDL	0.020	mg/kg	8270C	06/14/10	1
Phenanthrene	BDL	0.033	mg/kg	8270C	06/14/10	1
Pyrene	BDL	0.033	mg/kg	8270C	06/14/10	1
Surrogate Recovery						
Nitrobenzene-d5	86.0		% Rec.	8270C	06/14/10	1
2-Fluorobiphenyl	90.9		% Rec.	8270C	06/14/10	1
p-Terphenyl-d14	76.8		% Rec.	8270C	06/14/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/22/10 12:37 Printed: 06/22/10 12:38

L463344-08 (CR6) - diluted after digestion due to dark color



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ken Kreie
Olsson Associates - GJ, CO
826 21 1/2 Road
Grand Junction, CO 81505

June 22, 2010

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL

Sample ID : SS4

Collected By : Stuart Hall
Collection Date : 06/08/10 14:00

ESC Sample # : L463344-09

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	06/11/10	1
Chromium, Trivalent	18.	0.50	mg/kg	Calc.	06/11/10	1
Sodium Adsorption Ratio	0.96			Calc.	06/11/10	1
Specific Conductance	120		umhos/cm	9050AMod	06/10/10	1
Mercury	BDL	0.020	mg/kg	7471	06/10/10	1
Arsenic	BDL	1.0	mg/kg	6010B	06/11/10	1
Barium	130	0.25	mg/kg	6010B	06/11/10	1
Cadmium	0.32	0.25	mg/kg	6010B	06/11/10	1
Chromium	18.	0.50	mg/kg	6010B	06/11/10	1
Copper	18.	1.0	mg/kg	6010B	06/11/10	1
Lead	12.	0.25	mg/kg	6010B	06/11/10	1
Nickel	12.	1.0	mg/kg	6010B	06/11/10	1
Selenium	5.0	1.0	mg/kg	6010B	06/11/10	1
Silver	BDL	0.50	mg/kg	6010B	06/11/10	1
Zinc	44.	1.5	mg/kg	6010B	06/11/10	1
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	06/14/10	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	88.9		% Rec.	602/8015	06/14/10	5
Benzene	BDL	0.0050	mg/kg	8260B	06/18/10	5
Toluene	BDL	0.025	mg/kg	8260B	06/18/10	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	06/18/10	5
Total Xylenes	BDL	0.015	mg/kg	8260B	06/18/10	5
Methyl tert-butyl ether	BDL	0.0050	mg/kg	8260B	06/18/10	5
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	06/18/10	5
Dibromofluoromethane	109.		% Rec.	8260B	06/18/10	5
4-Bromofluorobenzene	104.		% Rec.	8260B	06/18/10	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	06/10/10	1
Surrogate recovery(%) o-Terphenyl	78.0		% Rec.	3546/DRO	06/10/10	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.033	mg/kg	8270C	06/14/10	1
Acenaphthene	BDL	0.033	mg/kg	8270C	06/14/10	1
Acenaphthylene	BDL	0.033	mg/kg	8270C	06/14/10	1
Benzo(a)anthracene	BDL	0.033	mg/kg	8270C	06/14/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)



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REPORT OF ANALYSIS

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826 21 1/2 Road
Grand Junction, CO 81505

June 22, 2010

Date Received : June 09, 2010
Description : Delta Bogue Gulch PL

Sample ID : SS4

Collected By : Stuart Hall
Collection Date : 06/08/10 14:00

ESC Sample # : L463344-09

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(a)pyrene	BDL	0.033	mg/kg	8270C	06/14/10	1
Benzo(b)fluoranthene	BDL	0.033	mg/kg	8270C	06/14/10	1
Benzo(g,h,i)perylene	BDL	0.033	mg/kg	8270C	06/14/10	1
Benzo(k)fluoranthene	BDL	0.033	mg/kg	8270C	06/14/10	1
Chrysene	BDL	0.033	mg/kg	8270C	06/14/10	1
Dibenz(a,h)anthracene	BDL	0.033	mg/kg	8270C	06/14/10	1
Fluoranthene	BDL	0.033	mg/kg	8270C	06/14/10	1
Fluorene	BDL	0.033	mg/kg	8270C	06/14/10	1
Indeno(1,2,3-cd)pyrene	BDL	0.033	mg/kg	8270C	06/14/10	1
Naphthalene	BDL	0.033	mg/kg	8270C	06/14/10	1
1-MethylNaphthalene	BDL	0.033	mg/kg	8270C	06/14/10	1
2-MethylNaphthalene	BDL	0.020	mg/kg	8270C	06/14/10	1
Phenanthrene	BDL	0.033	mg/kg	8270C	06/14/10	1
Pyrene	BDL	0.033	mg/kg	8270C	06/14/10	1
Surrogate Recovery						
Nitrobenzene-d5	86.8		% Rec.	8270C	06/14/10	1
2-Fluorobiphenyl	97.3		% Rec.	8270C	06/14/10	1
p-Terphenyl-d14	110.		% Rec.	8270C	06/14/10	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/22/10 12:37 Printed: 06/22/10 12:38

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L463344-01	WG482817	SAMP	pH	R1251260	T8
L463344-02	WG482817	SAMP	pH	R1251260	T8
L463344-03	WG482817	SAMP	pH	R1251260	T8
L463344-04	WG482817	SAMP	pH	R1251260	T8
L463344-05	WG482817	SAMP	pH	R1251260	T8
L463344-06	WG484146	SAMP	Toluene-d8	R1255889	J1
	WG482821	SAMP	Mercury	R1249917	P1J5J6J3
	WG482820	SAMP	Selenium	R1259449	O
L463344-07	WG483024	SAMP	Anthracene	R1252389	O
	WG483024	SAMP	Acenaphthene	R1252389	O
	WG483024	SAMP	Acenaphthylene	R1252389	O
	WG483024	SAMP	Benzo(a)anthracene	R1252389	O
	WG483024	SAMP	Benzo(a)pyrene	R1252389	O
	WG483024	SAMP	Benzo(b)fluoranthene	R1252389	O
	WG483024	SAMP	Benzo(g,h,i)perylene	R1252389	O
	WG483024	SAMP	Benzo(k)fluoranthene	R1252389	O
	WG483024	SAMP	Chrysene	R1252389	O
	WG483024	SAMP	Dibenz(a,h)anthracene	R1252389	O
	WG483024	SAMP	Fluoranthene	R1252389	O
	WG483024	SAMP	Fluorene	R1252389	O
	WG483024	SAMP	Indeno(1,2,3-cd)pyrene	R1252389	O
	WG483024	SAMP	Naphthalene	R1252389	O
	WG483024	SAMP	1-MethylNaphthalene	R1252389	O
	WG483024	SAMP	2-MethylNaphthalene	R1252389	O
	WG483024	SAMP	Phenanthrene	R1252389	O
	WG483024	SAMP	Pyrene	R1252389	O
	WG482820	SAMP	Selenium	R1259449	O
	WG482815	SAMP	Chromium, Hexavalent	R1249389	J3J6O
L463344-08	WG482820	SAMP	Arsenic	R1259449	J3
	WG482820	SAMP	Selenium	R1259449	O
	WG482815	SAMP	Chromium, Hexavalent	R1249389	O

Attachment B Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Received 6/29/2010 Rifle COGCC

Summary of Remarks For Samples Printed
06/22/10 at 12:38:10

TSR Signing Reports: 151
R5 - Desired TAT

Sample: L463344-01 Account: CORCOMGCO Received: 06/09/10 09:00 Due Date: 06/16/10 00:00 RPT Date: 06/22/10 12:37
Sample: L463344-02 Account: CORCOMGCO Received: 06/09/10 09:00 Due Date: 06/16/10 00:00 RPT Date: 06/22/10 12:37
Sample: L463344-03 Account: CORCOMGCO Received: 06/09/10 09:00 Due Date: 06/16/10 00:00 RPT Date: 06/22/10 12:37
Sample: L463344-04 Account: CORCOMGCO Received: 06/09/10 09:00 Due Date: 06/16/10 00:00 RPT Date: 06/22/10 12:37
Sample: L463344-05 Account: CORCOMGCO Received: 06/09/10 09:00 Due Date: 06/16/10 00:00 RPT Date: 06/22/10 12:37
Sample: L463344-06 Account: CORCOMGCO Received: 06/09/10 09:00 Due Date: 06/17/10 00:00 RPT Date: 06/22/10 12:37
Sample: L463344-07 Account: CORCOMGCO Received: 06/09/10 09:00 Due Date: 06/16/10 00:00 RPT Date: 06/22/10 12:37
Sample: L463344-08 Account: CORCOMGCO Received: 06/09/10 09:00 Due Date: 06/16/10 00:00 RPT Date: 06/22/10 12:37
Sample: L463344-09 Account: CORCOMGCO Received: 06/09/10 09:00 Due Date: 06/16/10 00:00 RPT Date: 06/22/10 12:37



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Ken Kreie
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Quality Assurance Report
Level II

L463344

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(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

June 22, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) High Fraction	< 4	ppm			WG482689	06/10/10 09:38
o-Terphenyl		% Rec.	88.53	50-150	WG482689	06/10/10 09:38
Specific Conductance	2.40	umhos/cm			WG482777	06/10/10 16:56
Specific Conductance	1.20	umhos/cm			WG482778	06/10/10 16:43
Chromium, Hexavalent	< 2	mg/kg			WG482815	06/11/10 07:45
Mercury	< .02	mg/kg			WG482821	06/10/10 14:24
Arsenic	< 1	mg/kg			WG482909	06/11/10 15:34
Barium	< .25	mg/kg			WG482909	06/11/10 15:34
Cadmium	< .25	mg/kg			WG482909	06/11/10 15:34
Chromium	< .5	mg/kg			WG482909	06/11/10 15:34
Copper	< 1	mg/kg			WG482909	06/11/10 15:34
Lead	< .25	mg/kg			WG482909	06/11/10 15:34
Nickel	< 1	mg/kg			WG482909	06/11/10 15:34
Selenium	< 1	mg/kg			WG482909	06/11/10 15:34
Silver	< .5	mg/kg			WG482909	06/11/10 15:34
Zinc	< 1.5	mg/kg			WG482909	06/11/10 15:34
Chloride	< 1	mg/l			WG483128	06/11/10 19:47
pH	4.80	su			WG482817	06/12/10 08:04
Dissolved Solids	< 10	mg/l			WG483178	06/14/10 13:28
Sulfate	< 5	mg/l			WG483249	06/12/10 10:17
Sulfate	< 5	mg/l			WG483238	06/12/10 06:43
Dissolved Solids	< 10	mg/l			WG483316	06/15/10 11:09
1-MethylNaphthalene	< .033	mg/kg			WG483024	06/14/10 13:33
2-MethylNaphthalene	< .033	mg/kg			WG483024	06/14/10 13:33
Acenaphthene	< .033	mg/kg			WG483024	06/14/10 13:33
Acenaphthylene	< .033	mg/kg			WG483024	06/14/10 13:33
Anthracene	< .033	mg/kg			WG483024	06/14/10 13:33
Benzo(a)anthracene	< .033	mg/kg			WG483024	06/14/10 13:33
Benzo(a)pyrene	< .033	mg/kg			WG483024	06/14/10 13:33
Benzo(b)fluoranthene	< .033	mg/kg			WG483024	06/14/10 13:33
Benzo(g,h,i)perylene	< .033	mg/kg			WG483024	06/14/10 13:33
Benzo(k)fluoranthene	< .033	mg/kg			WG483024	06/14/10 13:33
Chrysene	< .033	mg/kg			WG483024	06/14/10 13:33
Dibenz(a,h)anthracene	< .033	mg/kg			WG483024	06/14/10 13:33
Fluoranthene	< .033	mg/kg			WG483024	06/14/10 13:33

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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June 22, 2010

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Fluorene	< .033	mg/kg			WG483024	06/14/10 13:33
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG483024	06/14/10 13:33
Naphthalene	< .033	mg/kg			WG483024	06/14/10 13:33
Phenanthrene	< .033	mg/kg			WG483024	06/14/10 13:33
Pyrene	< .033	mg/kg			WG483024	06/14/10 13:33
2-Fluorobiphenyl		% Rec.	96.75	37-123	WG483024	06/14/10 13:33
Nitrobenzene-d5		% Rec.	110.1	19-129	WG483024	06/14/10 13:33
p-Terphenyl-d14		% Rec.	117.9	34-149	WG483024	06/14/10 13:33
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG483110	06/13/10 17:45
a,a,a-Trifluorotoluene(FID)		% Rec.	91.05	59-128	WG483110	06/13/10 17:45
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG483697	06/16/10 10:45
a,a,a-Trifluorotoluene(FID)		% Rec.	90.58	59-128	WG483697	06/16/10 10:45
Benzene	< .001	mg/kg			WG484146	06/18/10 04:36
Ethylbenzene	< .001	mg/kg			WG484146	06/18/10 04:36
Methyl tert-butyl ether	< .001	mg/kg			WG484146	06/18/10 04:36
Toluene	< .005	mg/kg			WG484146	06/18/10 04:36
Total Xylenes	< .003	mg/kg			WG484146	06/18/10 04:36
4-Bromofluorobenzene		% Rec.	101.7	59-140	WG484146	06/18/10 04:36
Dibromofluoromethane		% Rec.	113.1	63-139	WG484146	06/18/10 04:36
Toluene-d8		% Rec.	104.7	84-116	WG484146	06/18/10 04:36
Benzene	< .001	mg/kg			WG484309	06/19/10 12:10
Ethylbenzene	< .001	mg/kg			WG484309	06/19/10 12:10
Methyl tert-butyl ether	< .001	mg/kg			WG484309	06/19/10 12:10
Toluene	< .005	mg/kg			WG484309	06/19/10 12:10
Total Xylenes	< .003	mg/kg			WG484309	06/19/10 12:10
4-Bromofluorobenzene		% Rec.	101.6	59-140	WG484309	06/19/10 12:10
Dibromofluoromethane		% Rec.	103.1	63-139	WG484309	06/19/10 12:10
Toluene-d8		% Rec.	102.8	84-116	WG484309	06/19/10 12:10
Arsenic	< 1	mg/kg			WG482820	06/20/10 10:38
Barium	< .25	mg/kg			WG482820	06/20/10 10:38
Cadmium	< .25	mg/kg			WG482820	06/20/10 10:38
Chromium	< .5	mg/kg			WG482820	06/20/10 10:38
Copper	< 1	mg/kg			WG482820	06/20/10 10:38
Nickel	< 1	mg/kg			WG482820	06/20/10 10:38
Selenium	< 1	mg/kg			WG482820	06/20/10 10:38
Silver	< .5	mg/kg			WG482820	06/20/10 10:38
Zinc	< 1.5	mg/kg			WG482820	06/20/10 10:38
Lead	< .25	mg/kg			WG482820	06/20/10 14:22
Total Xylenes	< .003	mg/kg			WG484557	06/21/10 12:39
4-Bromofluorobenzene		% Rec.	105.3	59-140	WG484557	06/21/10 12:39
Dibromofluoromethane		% Rec.	116.4	63-139	WG484557	06/21/10 12:39
Toluene-d8		% Rec.	104.2	84-116	WG484557	06/21/10 12:39

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Specific Conductance	umhos/cm 3100		3000	4.05	20	L463344-06	WG482777
* Performance of this Analyte is outside of established criteria. For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'							



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Tax I.D. 62-0814289

Est. 1970

June 22, 2010

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Specific Conductance	umhos/cm	52.0	52.0		0.385	20	L463012-01	WG482778
Specific Conductance	umhos/cm	250.	250.		1.39	20	L463424-02	WG482778
Chromium, Hexavalent	mg/kg	0	0		0	20	L463344-06	WG482815
Mercury	mg/kg	0.0480	0.0290		48.4*	20	L463344-06	WG482821
Arsenic	mg/kg	1.90	1.30		39.5*	20	L463348-12	WG482909
Barium	mg/kg	62.0	55.0		12.6	20	L463348-12	WG482909
Cadmium	mg/kg	0.290	0.300		2.70	20	L463348-12	WG482909
Chromium	mg/kg	14.0	14.0		0	20	L463348-12	WG482909
Copper	mg/kg	13.0	14.7		13.8	20	L463348-12	WG482909
Lead	mg/kg	13.0	11.0		15.1	20	L463348-12	WG482909
Nickel	mg/kg	16.0	15.4		5.68	20	L463348-12	WG482909
Selenium	mg/kg	5.10	5.00		2.76	20	L463348-12	WG482909
Silver	mg/kg	0	0		0	20	L463348-12	WG482909
Zinc	mg/kg	44.0	38.2		13.9	20	L463348-12	WG482909
pH	su	8.40	8.40		0	1	L463344-01	WG482817
pH	su	9.30	7.60		20.1*	1	L463424-01	WG482817
Dissolved Solids	mg/l	50.0	50.0		0	5	L463125-07	WG483178
Sulfate	mg/l	120.	120.		3.39	20	L463344-05	WG483249
Sulfate	mg/l	1200	1200		0	20	L463744-02	WG483249
Sulfate	mg/l	100.	100.		3.92	20	L463344-02	WG483238
Dissolved Solids	mg/l	0	0		0	5	L464049-14	WG483316
Arsenic	mg/kg	2.00	3.00		37.6*	20	L463344-08	WG482820
Barium	mg/kg	170.	200.		18.0	20	L463344-08	WG482820
Cadmium	mg/kg	0.290	0.260		10.2	20	L463344-08	WG482820
Chromium	mg/kg	12.0	12.0		1.65	20	L463344-08	WG482820
Copper	mg/kg	14.0	15.0		4.08	20	L463344-08	WG482820
Lead	mg/kg	8.40	8.80		5.01	20	L463344-08	WG482820
Nickel	mg/kg	14.0	14.0		2.82	20	L463344-08	WG482820
Silver	mg/kg	0.590	0.570		3.96	20	L463344-08	WG482820
Zinc	mg/kg	45.0	45.0		0.664	20	L463344-08	WG482820
Selenium	mg/kg	0	0		0	20	L463344-08	WG482820

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	ppm	60	46.4	77.3	50-150	WG482689
o-Terphenyl				81.45	50-150	WG482689
Specific Conductance	umhos/cm	406	410.	101.	85-115	WG482777

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Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Specific Conductance	umhos/cm	406	410.	101.	85-115	WG482778
Chromium, Hexavalent	mg/kg	100	90.1	90.1	50-143	WG482815
Mercury	mg/kg	8.77	9.92	113.	71.6-127.7	WG482821
Arsenic	mg/kg	192	171.	89.1	78.6-120.8	WG482909
Barium	mg/kg	420	386.	91.9	78.8-121.4	WG482909
Cadmium	mg/kg	70.1	61.0	87.0	78.5-121.5	WG482909
Chromium	mg/kg	168	163.	97.0	80.4-120.2	WG482909
Copper	mg/kg	122	118.	96.7	81.6-119.7	WG482909
Lead	mg/kg	113	104.	92.0	77.3-122.1	WG482909
Nickel	mg/kg	74.1	70.6	95.3	78.8-121.2	WG482909
Selenium	mg/kg	176	170.	96.6	75.6-125.0	WG482909
Silver	mg/kg	115	106.	92.2	66-133.9	WG482909
Zinc	mg/kg	437	386.	88.3	78.5-121.7	WG482909
Chloride	mg/l	40	40.2	101.	90-110	WG483128
pH	su	9.36	9.30	99.4	98.9-102.0	WG482817
Dissolved Solids	mg/l	8800	8560	97.3	85-115	WG483178
Sulfate	mg/l	40	39.4	98.5	90-110	WG483249
Sulfate	mg/l	40	39.9	99.8	90-110	WG483238
Dissolved Solids	mg/l	8800	8740	99.4	85-115	WG483316
1-Methylnaphthalene	mg/kg	.167	0.157	94.0	38-115	WG483024
2-Methylnaphthalene	mg/kg	.167	0.172	103.	38-115	WG483024
Acenaphthene	mg/kg	.167	0.166	99.6	44-117	WG483024
Acenaphthylene	mg/kg	.167	0.163	97.7	43-118	WG483024
Anthracene	mg/kg	.167	0.159	95.2	42-127	WG483024
Benzo(a)anthracene	mg/kg	.167	0.159	95.4	45-127	WG483024
Benzo(a)pyrene	mg/kg	.167	0.152	91.1	46-123	WG483024
Benzo(b)fluoranthene	mg/kg	.167	0.149	89.1	43-126	WG483024
Benzo(g,h,i)perylene	mg/kg	.167	0.155	92.5	43-128	WG483024
Benzo(k)fluoranthene	mg/kg	.167	0.148	88.5	40-126	WG483024
Chrysene	mg/kg	.167	0.168	100.	44-129	WG483024
Dibenz(a,h)anthracene	mg/kg	.167	0.158	94.5	43-127	WG483024
Fluoranthene	mg/kg	.167	0.169	101.	44-125	WG483024
Fluorene	mg/kg	.167	0.168	100.	45-121	WG483024
Indeno(1,2,3-cd)pyrene	mg/kg	.167	0.166	99.2	43-127	WG483024
Naphthalene	mg/kg	.167	0.148	88.8	32-113	WG483024
Phenanthrene	mg/kg	.167	0.174	104.	43-124	WG483024
Pyrene	mg/kg	.167	0.158	94.7	47-128	WG483024
2-Fluorobiphenyl				101.6	37-123	WG483024

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Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known	Val	Result			
Nitrobenzene-d5					99.19	19-129	
p-Terphenyl-d14					108.2	34-149	
TPH (GC/FID) Low Fraction	mg/kg	5.5		6.40	116.	67-135	WG483110
a,a,a-Trifluorotoluene(FID)					104.4	59-128	WG483110
TPH (GC/FID) Low Fraction	mg/kg	5.5		4.32	78.6	67-135	WG483697
a,a,a-Trifluorotoluene(FID)					94.19	59-128	WG483697
Benzene	mg/kg	.025		0.0218	87.4	65-128	WG484146
Ethylbenzene	mg/kg	.025		0.0233	93.2	74-128	WG484146
Methyl tert-butyl ether	mg/kg	.025		0.0214	85.6	44-148	WG484146
Toluene	mg/kg	.025		0.0215	85.9	70-120	WG484146
Total Xylenes	mg/kg	.075		0.0687	91.7	74-127	WG484146
4-Bromofluorobenzene					103.9	59-140	WG484146
Dibromofluoromethane					103.8	63-139	WG484146
Toluene-d8					106.1	84-116	WG484146
Benzene	mg/kg	.025		0.0247	98.6	65-128	WG484309
Ethylbenzene	mg/kg	.025		0.0277	111.	74-128	WG484309
Methyl tert-butyl ether	mg/kg	.025		0.0233	93.3	44-148	WG484309
Toluene	mg/kg	.025		0.0246	98.6	70-120	WG484309
Total Xylenes	mg/kg	.075		0.0829	110.	74-127	WG484309
4-Bromofluorobenzene					120.9	59-140	WG484309
Dibromofluoromethane					101.2	63-139	WG484309
Toluene-d8					104.0	84-116	WG484309
Arsenic	mg/kg	192		190.	99.0	78.6-120.8	WG482820
Barium	mg/kg	420		435.	104.	78.8-121.4	WG482820
Cadmium	mg/kg	70.1		67.7	96.6	78.5-121.5	WG482820
Chromium	mg/kg	168		170.	101.	80.4-120.2	WG482820
Copper	mg/kg	122		127.	104.	81.6-119.7	WG482820
Lead	mg/kg	113		113.	100.	77.3-122.1	WG482820
Nickel	mg/kg	74.1		85.4	115.	78.8-121.2	WG482820
Selenium	mg/kg	176		173.	98.3	75.6-125.0	WG482820
Silver	mg/kg	115		116.	101.	66-133.9	WG482820
Zinc	mg/kg	437		436.	99.8	78.5-121.7	WG482820
Total Xylenes	mg/kg	.075		0.0692	92.3	74-127	WG484557
4-Bromofluorobenzene					105.8	59-140	WG484557
Dibromofluoromethane					119.4	63-139	WG484557
Toluene-d8					105.9	84-116	WG484557

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) High Fraction	ppm	43.2	46.4	72.0	50-150	7.18	25	WG482689
o-Terphenyl				73.43	50-150			WG482689
Specific Conductance	umhos/ 410.	410.	410.	101.	85-115	0	20	WG482777
Specific Conductance	umhos/ 410.	410.	410.	101.	85-115	0	20	WG482778

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Chromium, Hexavalent	mg/kg	88.4	90.1	88.0	50-143	1.90	20	WG482815
Chloride	mg/l	40.3	40.2	101.	90-110	0.248	20	WG483128
pH	su	9.30	9.30	99.0	98.9-102.0	0	20	WG482817
Dissolved Solids	mg/l	8640	8560	98.0	85-115	0.837	20	WG483178
Sulfate	mg/l	39.0	39.4	98.0	90-110	1.02	20	WG483249
Sulfate	mg/l	39.8	39.9	100.	90-110	0.251	20	WG483238
Dissolved Solids	mg/l	8710	8740	99.0	85-115	0.367	20	WG483316
1-Methylnaphthalene	mg/kg	0.159	0.157	95.0	38-115	1.48	22	WG483024
2-Methylnaphthalene	mg/kg	0.179	0.172	107.	38-115	4.00	23	WG483024
Acenaphthene	mg/kg	0.179	0.166	107.	44-117	7.17	21	WG483024
Acenaphthylene	mg/kg	0.172	0.163	103.	43-118	5.07	20	WG483024
Anthracene	mg/kg	0.167	0.159	100.	42-127	4.60	21	WG483024
Benzo(a)anthracene	mg/kg	0.167	0.159	100.	45-127	4.92	21	WG483024
Benzo(a)pyrene	mg/kg	0.162	0.152	97.0	46-123	6.30	20	WG483024
Benzo(b)fluoranthene	mg/kg	0.163	0.149	97.0	43-126	8.95	27	WG483024
Benzo(g,h,i)perylene	mg/kg	0.167	0.155	100.	43-128	7.59	20	WG483024
Benzo(k)fluoranthene	mg/kg	0.154	0.148	92.0	40-126	4.26	32	WG483024
Chrysene	mg/kg	0.169	0.168	101.	44-129	0.872	22	WG483024
Dibenz(a,h)anthracene	mg/kg	0.171	0.158	102.	43-127	7.89	20	WG483024
Fluoranthene	mg/kg	0.176	0.169	105.	44-125	4.35	22	WG483024
Fluorene	mg/kg	0.180	0.168	108.	45-121	7.10	20	WG483024
Indeno(1,2,3-cd)pyrene	mg/kg	0.176	0.166	105.	43-127	5.83	21	WG483024
Naphthalene	mg/kg	0.153	0.148	92.0	32-113	3.02	26	WG483024
Phenanthrene	mg/kg	0.177	0.174	106.	43-124	1.34	21	WG483024
Pyrene	mg/kg	0.165	0.158	99.0	47-128	4.55	20	WG483024
2-Fluorobiphenyl				108.4	37-123			WG483024
Nitrobenzene-d5				100.7	19-129			WG483024
p-Terphenyl-d14				113.3	34-149			WG483024
TPH (GC/FID) Low Fraction	mg/kg	5.29	6.40	96.0	67-135	19.0	20	WG483110
a,a,a-Trifluorotoluene(FID)				101.0	59-128			WG483110
TPH (GC/FID) Low Fraction	mg/kg	4.31	4.32	78.0	67-135	0.310	20	WG483697
a,a,a-Trifluorotoluene(FID)				94.21	59-128			WG483697
Benzene	mg/kg	0.0230	0.0218	92.0	65-128	5.23	20	WG484146
Ethylbenzene	mg/kg	0.0230	0.0233	92.0	74-128	1.52	20	WG484146
Methyl tert-butyl ether	mg/kg	0.0236	0.0214	94.0	44-148	9.64	20	WG484146
Toluene	mg/kg	0.0218	0.0215	87.0	70-120	1.41	20	WG484146
Total Xylenes	mg/kg	0.0678	0.0687	90.0	74-127	1.45	20	WG484146
4-Bromofluorobenzene				104.8	59-140			WG484146

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Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
Dibromofluoromethane				111.7	63-139			
Toluene-d8				107.8	84-116			
Benzene	mg/kg	0.0249	0.0247	100.	65-128	1.04	20	WG484309
Ethylbenzene	mg/kg	0.0272	0.0277	109.	74-128	1.91	20	WG484309
Methyl tert-butyl ether	mg/kg	0.0234	0.0233	94.0	44-148	0.210	20	WG484309
Toluene	mg/kg	0.0248	0.0246	99.0	70-120	0.620	20	WG484309
Total Xylenes	mg/kg	0.0830	0.0829	111.	74-127	0.170	20	WG484309
4-Bromofluorobenzene				108.5	59-140			WG484309
Dibromofluoromethane				100.5	63-139			WG484309
Toluene-d8				102.9	84-116			WG484309
Total Xylenes	mg/kg	0.0714	0.0692	95.0	74-127	3.05	20	WG484557
4-Bromofluorobenzene				105.7	59-140			WG484557
Dibromofluoromethane				88.75	63-139			WG484557
Toluene-d8				104.8	84-116			WG484557

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
TPH (GC/FID) High Fraction	ppm	44.0	6.30	60	62.8	50-150	L463132-01	WG482689
o-Terphenyl					73.76	50-150		WG482689
Chromium, Hexavalent	mg/kg	15.0	0	20	15.0*	50-150	L463344-07	WG482815
Mercury	mg/kg	0.362	0.0290	.25	133.*	70-130	L463344-06	WG482821
Arsenic	mg/kg	43.5	1.30	50	84.4	75-125	L463348-12	WG482909
Barium	mg/kg	114.	55.0	50	118.	75-125	L463348-12	WG482909
Cadmium	mg/kg	41.2	0.300	50	81.8	75-125	L463348-12	WG482909
Chromium	mg/kg	60.9	14.0	50	93.8	75-125	L463348-12	WG482909
Copper	mg/kg	58.7	14.7	50	88.0	75-125	L463348-12	WG482909
Lead	mg/kg	56.5	11.0	50	91.0	75-125	L463348-12	WG482909
Nickel	mg/kg	60.4	15.4	50	90.0	75-125	L463348-12	WG482909
Selenium	mg/kg	46.6	5.00	50	83.2	75-125	L463348-12	WG482909
Silver	mg/kg	43.3	0	50	86.6	75-125	L463348-12	WG482909
Zinc	mg/kg	90.3	38.2	50	104.	75-125	L463348-12	WG482909
Sulfate	mg/l	73.5	23.0	50	101.	80-120	L463502-03	WG483249
1-MethylNaphthalene	mg/kg	0.357	0.200	.167	94.1	28-124	L463286-02	WG483024
2-MethylNaphthalene	mg/kg	0.725	0.500	.167	135.*	25-128	L463286-02	WG483024
Acenaphthene	mg/kg	0.166	0	.167	99.3	38-121	L463286-02	WG483024
Acenaphthylene	mg/kg	0.163	0	.167	97.9	39-120	L463286-02	WG483024
Anthracene	mg/kg	0.157	0	.167	93.9	35-133	L463286-02	WG483024
Benzo(a)anthracene	mg/kg	0.132	0	.167	78.8	35-136	L463286-02	WG483024
Benzo(a)pyrene	mg/kg	0.149	0	.167	89.0	37-131	L463286-02	WG483024
Benzo(b)fluoranthene	mg/kg	0.158	0	.167	94.6	29-145	L463286-02	WG483024
Benzo(g,h,i)perylene	mg/kg	0.0843	0	.167	50.5	10-139	L463286-02	WG483024
Benzo(k)fluoranthene	mg/kg	0.136	0	.167	81.5	31-140	L463286-02	WG483024
Chrysene	mg/kg	0.137	0	.167	81.8	34-137	L463286-02	WG483024
Dibenz(a,h)anthracene	mg/kg	0.0956	0	.167	57.2	21-132	L463286-02	WG483024
Fluoranthene	mg/kg	0.144	0	.167	86.2	34-132	L463286-02	WG483024
Fluorene	mg/kg	0.186	0	.167	112.	38-126	L463286-02	WG483024

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Indeno(1,2,3-cd)pyrene	mg/kg	0.102	0	.167	61.2	17-134	L463286-02	WG483024
Naphthalene	mg/kg	0.345	0.170	.167	105.	24-122	L463286-02	WG483024
Phenanthrene	mg/kg	0.169	0	.167	101.	38-128	L463286-02	WG483024
Pyrene	mg/kg	0.145	0	.167	86.8	35-141	L463286-02	WG483024
2-Fluorobiphenyl					93.14	37-123		WG483024
Nitrobenzene-d5					142.6*	19-129		WG483024
p-Terphenyl-d14					95.13	34-149		WG483024
TPH (GC/FID) Low Fraction	mg/kg	17.0	0	5.5	61.7	55-109	L463229-01	WG483110
a,a,a-Trifluorotoluene(FID)					93.09	59-128		WG483110
TPH (GC/FID) Low Fraction	mg/kg	203.	0	5.5	70.9	55-109	L463710-05	WG483697
a,a,a-Trifluorotoluene(FID)					92.73	59-128		WG483697
Benzene	mg/kg	0.0994	0	.025	79.6	16-143	L463134-10	WG484146
Ethylbenzene	mg/kg	0.0996	0	.025	79.6	12-137	L463134-10	WG484146
Methyl tert-butyl ether	mg/kg	0.108	0	.025	86.2	21-157	L463134-10	WG484146
Toluene	mg/kg	0.0939	0	.025	75.1	12-136	L463134-10	WG484146
Total Xylenes	mg/kg	0.292	0	.075	77.8	10-138	L463134-10	WG484146
4-Bromofluorobenzene					98.09	59-140		WG484146
Dibromofluoromethane					108.6	63-139		WG484146
Toluene-d8					104.8	84-116		WG484146
Benzene	mg/kg	0.105	0	.025	84.1	16-143	L463402-03	WG484309
Ethylbenzene	mg/kg	0.120	0	.025	95.7	12-137	L463402-03	WG484309
Methyl tert-butyl ether	mg/kg	0.115	0	.025	91.8	21-157	L463402-03	WG484309
Toluene	mg/kg	0.105	0	.025	84.1	12-136	L463402-03	WG484309
Total Xylenes	mg/kg	0.359	0	.075	95.7	10-138	L463402-03	WG484309
4-Bromofluorobenzene					108.6	59-140		WG484309
Dibromofluoromethane					101.6	63-139		WG484309
Toluene-d8					103.0	84-116		WG484309
Arsenic	mg/kg	48.5	3.00	50	91.0	75-125	L463344-08	WG482820
Barium	mg/kg	251.	200.	50	102.	75-125	L463344-08	WG482820
Cadmium	mg/kg	45.9	0.260	50	91.3	75-125	L463344-08	WG482820
Chromium	mg/kg	58.3	12.0	50	92.6	75-125	L463344-08	WG482820
Copper	mg/kg	62.5	15.0	50	95.0	75-125	L463344-08	WG482820
Lead	mg/kg	54.7	8.80	50	91.8	75-125	L463344-08	WG482820
Nickel	mg/kg	62.2	14.0	50	96.4	75-125	L463344-08	WG482820
Silver	mg/kg	44.4	0.570	50	87.7	75-125	L463344-08	WG482820
Zinc	mg/kg	90.9	45.0	50	91.8	75-125	L463344-08	WG482820
Selenium	mg/kg	43.3	0	50	17.3*	75-125	L463344-08	WG482820
Total Xylenes	mg/kg	0.352	0	.075	93.8	10-138	L463811-02	WG484557
4-Bromofluorobenzene					104.6	59-140		WG484557
Dibromofluoromethane					89.89	63-139		WG484557
Toluene-d8					105.6	84-116		WG484557

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) High Fraction	ppm	47.2	44.0	68.2	50-150	7.15	25	L463132-01	WG482689
o-Terphenyl				71.03	50-150				WG482689

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chromium, Hexavalent	mg/kg	11.7	15.0	11.7*	50-150	24.7*	20	L463344-07	WG482815
Mercury	mg/kg	0.200	0.362	68.4*	70-130	57.7*	20	L463344-06	WG482821
Arsenic	mg/kg	44.7	43.5	86.8	75-125	2.72	20	L463348-12	WG482909
Barium	mg/kg	112.	114.	114.	75-125	1.77	20	L463348-12	WG482909
Cadmium	mg/kg	42.3	41.2	84.0	75-125	2.63	20	L463348-12	WG482909
Chromium	mg/kg	63.0	60.9	98.0	75-125	3.39	20	L463348-12	WG482909
Copper	mg/kg	58.8	58.7	88.2	75-125	0.170	20	L463348-12	WG482909
Lead	mg/kg	56.4	56.5	90.8	75-125	0.177	20	L463348-12	WG482909
Nickel	mg/kg	61.4	60.4	92.0	75-125	1.64	20	L463348-12	WG482909
Selenium	mg/kg	48.1	46.6	86.2	75-125	3.17	20	L463348-12	WG482909
Silver	mg/kg	44.4	43.3	88.8	75-125	2.51	20	L463348-12	WG482909
Zinc	mg/kg	88.4	90.3	100.	75-125	2.13	20	L463348-12	WG482909
Sulfate	mg/l	72.0	73.5	98.0	80-120	2.06	20	L463502-03	WG483249
1-Methylnaphthalene	mg/kg	0.252	0.357	31.2	28-124	34.5*	26	L463286-02	WG483024
2-Methylnaphthalene	mg/kg	0.512	0.725	7.05*	25-128	34.5*	27	L463286-02	WG483024
Acenaphthene	mg/kg	0.146	0.166	87.4	38-121	12.7	23	L463286-02	WG483024
Acenaphthylene	mg/kg	0.136	0.163	81.3	39-120	18.5	22	L463286-02	WG483024
Anthracene	mg/kg	0.130	0.157	77.8	35-133	18.8	23	L463286-02	WG483024
Benzo(a)anthracene	mg/kg	0.115	0.132	69.0	35-136	13.3	23	L463286-02	WG483024
Benzo(a)pyrene	mg/kg	0.119	0.149	71.5	37-131	21.8	22	L463286-02	WG483024
Benzo(b)fluoranthene	mg/kg	0.142	0.158	85.0	29-145	10.7	33	L463286-02	WG483024
Benzo(g,h,i)perylene	mg/kg	0.0637	0.0843	38.1	10-139	27.9*	26	L463286-02	WG483024
Benzo(k)fluoranthene	mg/kg	0.118	0.136	70.6	31-140	14.3	34	L463286-02	WG483024
Chrysene	mg/kg	0.109	0.137	65.3	34-137	22.4	23	L463286-02	WG483024
Dibenz(a,h)anthracene	mg/kg	0.0722	0.0956	43.2	21-132	27.9*	25	L463286-02	WG483024
Fluoranthene	mg/kg	0.125	0.144	75.1	34-132	13.8	24	L463286-02	WG483024
Fluorene	mg/kg	0.156	0.186	93.3	38-126	17.9	23	L463286-02	WG483024
Indeno(1,2,3-cd)pyrene	mg/kg	0.0757	0.102	45.4	17-134	29.7*	25	L463286-02	WG483024
Naphthalene	mg/kg	0.292	0.345	72.9	24-122	16.8	29	L463286-02	WG483024
Phenanthrene	mg/kg	0.142	0.169	85.0	38-128	17.2	25	L463286-02	WG483024
Pyrene	mg/kg	0.108	0.145	64.7	35-141	29.1*	25	L463286-02	WG483024
2-Fluorobiphenyl				73.53	37-123				WG483024
Nitrobenzene-d5				116.5	19-129				WG483024
p-Terphenyl-d14				71.13	34-149				WG483024
TPH (GC/FID) Low Fraction	mg/kg	16.5	17.0	59.9	55-109	3.03	20	L463229-01	WG483110
a,a,a-Trifluorotoluene(FID)				93.43	59-128				WG483110
TPH (GC/FID) Low Fraction	mg/kg	231.	203.	80.8	55-109	13.1	20	L463710-05	WG483697
a,a,a-Trifluorotoluene(FID)				95.22	59-128				WG483697
Benzene	mg/kg	0.119	0.0994	95.5	16-143	18.2	31	L463134-10	WG484146
Ethylbenzene	mg/kg	0.120	0.0996	96.2	12-137	18.9	36	L463134-10	WG484146
Methyl tert-butyl ether	mg/kg	0.119	0.108	95.0	21-157	9.81	31	L463134-10	WG484146
Toluene	mg/kg	0.113	0.0939	90.5	12-136	18.6	32	L463134-10	WG484146
Total Xylenes	mg/kg	0.369	0.292	98.4	10-138	23.4	36	L463134-10	WG484146
4-Bromofluorobenzene				103.9	59-140				WG484146
Dibromofluoromethane				111.4	63-139				WG484146

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Toluene-d8				105.7	84-116					
Benzene	mg/kg	0.120	0.105	95.9	16-143	13.1	31	L463402-03		WG484309
Ethylbenzene	mg/kg	0.135	0.120	108.	12-137	12.1	36	L463402-03		WG484309
Methyl tert-butyl ether	mg/kg	0.129	0.115	103.	21-157	11.8	31	L463402-03		WG484309
Toluene	mg/kg	0.121	0.105	96.7	12-136	14.0	32	L463402-03		WG484309
Total Xylenes	mg/kg	0.394	0.359	105.	10-138	9.25	36	L463402-03		WG484309
4-Bromofluorobenzene				101.0	59-140					WG484309
Dibromofluoromethane				98.76	63-139					WG484309
Toluene-d8				103.8	84-116					WG484309
Arsenic	mg/kg	47.8	48.5	89.6	75-125	1.45	20	L463344-08		WG482820
Barium	mg/kg	233.	251.	66.0*	75-125	7.44	20	L463344-08		WG482820
Cadmium	mg/kg	44.7	45.9	88.9	75-125	2.65	20	L463344-08		WG482820
Chromium	mg/kg	57.9	58.3	91.8	75-125	0.688	20	L463344-08		WG482820
Copper	mg/kg	60.6	62.5	91.2	75-125	3.09	20	L463344-08		WG482820
Lead	mg/kg	54.3	54.7	91.0	75-125	0.734	20	L463344-08		WG482820
Nickel	mg/kg	61.3	62.2	94.6	75-125	1.46	20	L463344-08		WG482820
Silver	mg/kg	45.2	44.4	89.3	75-125	1.79	20	L463344-08		WG482820
Zinc	mg/kg	87.5	90.9	85.0	75-125	3.81	20	L463344-08		WG482820
Selenium	mg/kg	46.6	43.3	18.6*	75-125	7.34	20	L463344-08		WG482820
Total Xylenes	mg/kg	0.362	0.352	96.4	10-138	2.71	36	L463811-02		WG484557
4-Bromofluorobenzene				105.8	59-140					WG484557
Dibromofluoromethane				88.72	63-139					WG484557
Toluene-d8				104.6	84-116					WG484557

Batch number /Run number / Sample number cross reference

WG482689: R1249173: L463344-06 07 08 09
 WG482777: R1249230: L463344-06 07 08 09
 WG482778: R1249233: L463344-01 02 03 04 05
 WG482815: R1249389: L463344-06 07 08 09
 WG482821: R1249917: L463344-06 07 08 09
 WG482909: R1250069: L463344-09
 WG482907: R1250089: L463344-06 07 08 09
 WG483128: R1250388: L463344-01 02 03 04 05
 WG482817: R1251260: L463344-01 02 03 04 05
 WG483178: R1251492: L463344-01
 WG483249: R1252111: L463344-05
 WG483238: R1252148: L463344-01 02 03 04
 WG483316: R1252348: L463344-02 03 04 05
 WG483024: R1252389: L463344-06 07 08 09
 WG483110: R1252416: L463344-07 08 09
 WG483697: R1254429: L463344-06
 WG484146: R1255889: L463344-06 08 09
 WG484309: R1258308: L463344-07
 WG482820: R1259449: L463344-06 07 08
 WG484557: R1261388: L463344-06

* * Calculations are performed prior to rounding of reported values .
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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.