Paragon Analytics

INORGANICS CASE NARRATIVE

Kent & Sullivan Inc.

Ross Adams

Order Number - 0405095

1. This report consists of 10 water samples.
2. The samples were received intact on 05/11/04. The temperature of the samples upon receipt ranged from 10 to 15° Celsius.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were prepared for analysis based on Methods for the Chemical Analysis of Waters and Wastes (MCAWW), May 1994 procedures.
5. The samples were analyzed following MCAWW procedures for the following method:

Analyte	Method	SOP #
Alkalinity	310.1	1106 Rev 4
Bicarbonate	310.1	1106 Rev 4
Carbonate	310.1	1106 Rev 4

6. All standards and solutions were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times for all analyses.

All in house quality control procedures were followed, as described below.

8. General quality control procedures.
   - A preparation (method) blank and laboratory control sample (LCS) were prepared and analyzed with the samples in this preparation batch. There were not more than 20 samples in this preparation batch.
   - The method blank associated with this batch was below the reporting limit for the requested analytes. This indicates that no contaminants were introduced to the samples during preparation and analysis.
   - The LCS was within the acceptance limits for these analyses.

- All initial and continuing calibration blanks (ICB/CCB) associated with this analytical batch were below the reporting limit for the requested analytes.
- All initial and continuing calibration verifications (ICV/CCV) associated with this analytical batch were within the acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.

9. Matrix specific quality control procedures.

   PA sample ID 0405095-1 was designated as the quality control sample for these analyses.

   - A sample duplicate was prepared and analyzed with this batch. All guidance criteria for precision were met.

10. Sample dilutions were not required for the requested analyses.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Eric A. Lintner Inorganic Analyst	6-9-04 Date
Reviewer's Initials	6/9/04 Date

Paragon Analytics

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0405095
Client Name: Kent & Sullivan Inc.
Client Project Name: Ross Adams
Client Project Number:
Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
SW-01	0405095-1		WATER	05-May-04	16:40
SW-02	0405095-2		WATER	05-May-04	15:50
SW-04	0405095-3		WATER	04-May-04	17:52
SW-05	0405095-4		WATER	06-May-04	11:45
SW-06	0405095-5		WATER	06-May-04	8:50
SW-07	0405095-6		WATER	03-May-04	16:03
SW-08	0405095-7		WATER	03-May-04	16:59
SW-09	0405095-8		WATER	05-May-04	12:30
SW-10	0405095-9		WATER	05-May-04	14:57
SW-11	0405095-10		WATER	06-May-04	17:00
FR-01	0405095-11		WATER	06-May-04	8:00
FR-02	0405095-12		WATER	06-May-04	8:10

Chain of Custody

Paragon Analytics, Inc.

2&5 Commerce Drive Fort Collins, CO 80524
800-443-1511 or (970) 490-1511 (970) 490-1522 Fax

Accession Number (LAB ID) 0405095

Chain-of-Custody

Date _____ Page 1 of 9

Project Name / No.: Ross Adams Sampler(s): _____ (circle one) Turnaround: Standard or Rush (Due _____) Dispose or Return to Client

Report To: SUE KENT
Phone: 907 283-0949
Fax: 907 283 0947
Company: KENT & SULLIVAN INC
Address: 53495 THUNDER RD
KENAI AK 99611

circle method or specify under comments

Sample ID	Date	Time *	Lab ID	Matrix	No. of Containers	VOCs SW8260B E624 E524.2 OLMO__	BTEX (only) SW8021B	SVOCs SW8270C E625 E525 OLMO__	OC Pesticides SW8081A E608 E508 OLMO__	PCBs SW8082 E608 E508 OLMO__	OP Pesticides SW8141A E614	Herbicides SW8151A E615	TCLP Organics SW1311 8260B 8270C 8081A 8151A	TCLP Metals SW 1311 6010B 7471	Total Metals SW6010B 7470 7471 E200 ILMO__	Dissolved Metals SW6010B 7470 E200 ILMO__	Reactive CN / S SW846 Chapter 7	Hexavalent Chromium SW7196A Alkaline Digest? Y / N	Inorganic Anions ** SW9056 E300.0	pH SW9040B 9045C	Oil & Grease SW9071A E413.2	TPH GRO DRO SW8015B (both)	TOX SW9020B	Gross Alpha / Beta SW9310 E900.0	Actinides by PAI SOP (circle) Pu / U / Am / Th / Cm	Total Uranium by KPA D5174-91	Tritium E906.0	Total Alpha-Emitting Radium SW9315 E903.0	Radium 226 SW9315 E903.0 Radium 228 SW9320 E904.0	Strontium 89 D5811-95 Strontium 90 D5811-95	Gamma Isotopes ** E901.1	Th-isotopic	Pb 210	Dissolved Hardness
[illegible]	5/5/04	1640	1	SW	5										(B)									X					X					X
[illegible]	5/5/04	1530	2		5										(B)									X					X					X
[illegible]	5/4/04	1752	3		5										(B)									X					X					X
[illegible]	5/6/04	1145	4		5										X									X					X			X	X	X
[illegible]	5/6/04	0850	5		5										(B)									X					(*)					X
[illegible]	5/5/04	1603	6		8										X									X					X			X	X	X
[illegible]	5/5/04	1659	7		5										(B)									X					(*)					X
[illegible]	5/5/04	1235	8		5										(B)									X					(*)					X
[illegible]	5/5/04	1457	9		5										(B)									X					(*)					X
[illegible]	5/6/04	1100	10	✓	5										(B)									X					(*)					X

Comments:

(*) [illegible]

(B) [illegible]

000005

Relinquished By: (1)
Signature Gerald Warrick
Printed Name Gerald Warrick
Date 5-10-04 Time 10:00
Company Kent & Sullivan

Relinquished By: (2)
Signature _____
Printed Name _____
Date _____ Time _____
Company _____

Received By: (1)
Signature [signature]
Printed Name Amy Wolf
Date 5/11/04 Time 1645
Company Paragon Analytics

Received By: (2)
Signature _____
Printed Name _____
Date _____ Time _____
Company _____

Form 202r4.xls (1/3/01)

* Time Zone (circle one): EST CST MST PST

** Indicate specific analytes under comments.

Distribution: white / yellow (Paragon); pink retained by originator.

Paragon Analytics, Inc.
225 Commerce Drive Fort Collins, CO 80524
800-443-1511 or (970) 490-1511 (970) 490-1522 Fax

Chain-of-Custody

Accession Number (LAB ID) 0405095

Date _____ Page 2 of 9

Project Name / No.: _____ Sampler(s): _____ (circle one) Turnaround: Standard or Rush (Due _____) Dispose or Return to Client

Report To:
Phone:
Fax:
Company:
Address:

See page 1

circle method or specify under comments

Sample ID	Date 2004	Time *	Lab ID	Matrix	No. of Containers	VOCs SW8260B E624 E524.2 OLMO__	BTEX (only) SW8021B	SVOCs SW8270C E625 E525 OLMO__	OC Pesticides SW8081A E608 E508 OLMO__	PCBs SW8082 E608 E508 OLMO__	OP Pesticides SW8141A E614	Herbicides SW8151A E615	TCLP Organics SW1311 8260B 8270C 8081A 8151A	TCLP Metals SW 1311 6010B 7471	Total Metals SW6010B 7470 7471 E200 ILMO__	Dissolved Metals SW6010B 7470 E200 ILMO__	Reactive CN / S SW846 Chapter 7	Hexavalent Chromium SW7196A Alkaline Digest? Y / N	Inorganic Anions ** SW9056 E300 0	pH SW9040B 9045C	Oil & Grease SW9071A E413 2	TPH GRO DRO SW8015B (both)	TOX SW9020B	Gross Alpha / Beta SW9310 E900 0	Actinides by PAI SOP (circle): Pu / U / Am / Th / Cm	~~Total~~ Uranium by ~~[illegible]~~ isotopic	Tritium E906.0	Total Alpha-Emitting Radium SW9315 E903.0	Radium 226 SW9315 E903.0 Radium 228 SW9320 E904.0	Strontium 89 D5811-95 Strontium 90 D5811-95	Gamma Isotopes ** E901.1	Th- isotopic	Ac 227 - Pa 231 - Pb 210
FR-01	5-6-04	0800	11	W	2										(B)									X									
FR-02	↓	0810	12	W	2										(B)									X									
MSED-01 (X)	5-6	1300		SED	2										(C)											X			X			X	
MSED-02	5-6	1340			3										(C)											X			X			X	
MSED-03	5-6	1400			2¼										(C)											X			X			X	
MSED-04	5-6	0910			3										(C)											X			X			X	X
MSED-05	5-6	0920			3										(C)											X			X			X	
MSED-06	5-7	0830			[illegible]										(C)											X			X			X	
MSED-07	5-7	0900		↓	3										(C)											X			X			X	

Comments:
(B) Hold analyses pending metals analyses from samples [illegible] and SW-07.
(C) Hold analyses pending metals results from samples OSA-01, 700-01, and 900-01.
(X) on WO# 0405096 on 5/12/04

Form 202r4.xls (1/3/01)

Relinquished By: (1)	Relinquished By: (2)
Signature: Gerald Warrick	Signature:
Printed Name: Gerald Warrick	Printed Name:
Date: 5-10-04 Time: 10:00	Date: Time:
Company: Kent + Sullivan	Company:

Received By: (1)	Received By: (2)
Signature: [signature]	Signature:
Printed Name: Amy Wolf	Printed Name:
Date: 5/11/04 Time: 11:45	Date: Time:
Company: Paragon Analytics	Company:

900009

* Time Zone (circle one): EST CST MST PST ** Indicate specific analytes under comments. Distribution: white / yellow (Paragon); pink retained by originator.

Paragon Analytics, Inc. -- Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: Kent & Sullivan WORKORDER NO: 0405095

PROJECT MANAGER: Debbie Fazio INITIALS: DW DATE: 5/12/04

1. Does this project require any special handling in addition to standard Paragon procedures?		Yes	No
IS PRE-SCREENING REQUIRED? (radiochemistry, DOE, etc.)		Yes	No
2. Are custody seals on shipping containers intact? How many custody seals are provided? 2 each	N/A	Yes	No
3. Are the custody seals on sample containers intact?	N/A	Yes	No
4. Is there a Chain-of-Custody (COC) or other representative documents, letters, or shipping memos?		Yes	No
5. Is the COC complete? Relinquished: Yes ✓ No___ Analyses Requested: Yes ✓ No___	N/A	Yes	No
6. Is the COC in agreement with the samples received? No. of Samples: Yes ✓ No___ Sample ID's: Yes ✓ No___ Matrix: Yes ✓ No___ No. of Containers: Yes ✓ No___	N/A	Yes	No
7. Were COC (if applicable) and sample labels legible?		Yes	No
8. Were airbills present and/or removable?	N/A	Yes	No
9. Are all aqueous samples requiring chemical preservation preserved correctly (excluding volatile organics)?	N/A	Yes	No
Are all aqueous **non-preserved** samples at the correct pH?		Yes	No
10. Is there enough sample for requested analyses? If so, were samples placed in the proper containers?		Yes	No
11. Are all samples within holding times for the requested analyses?		Yes	No
12. Were all sample containers received intact? (not broken or leaking, etc.)		Yes	No
13. Are samples requiring no headspace (volatiles, reactive cyanide/sulfide, radon), headspace free? **Size of bubble: ___ < green pea; ___ > green pea** (List sample IDs and affected containers on Page 2)	N/A	Yes	No
14. Were samples checked for and free from the presence of residual chlorine?	N/A	Yes	No
15. Were the sample(s) shipped on ice?	N/A	Yes	No
16. Were cooler temperatures measured at 0.1 - 6 °C ? **IR Gun Used*:** 1 2	N/A	Yes	No
17. Were all samples cooled that should have been cooled?	N/A	Yes	No

Cooler #'s	866	933	930	681	166	9	816	4	
Temperature	10°	10°	15°	10°	12°	12°	14°	11°	°C

Project Manager Signature / Date: Debbie Fazio 5/13/04

A NO RESPONSE TO ANY QUESTION EXCEPT # 1 REQUIRES THE COMPLETION OF PAGE 2 OF THIS FORM

* IR Gun #1 (original): Raytek, SN SC-PM3/T29403
IR Gun #2 (newer): Oakton, SN 2SCIR1201

Paragon Analytics, Inc. -- Fort Collins, Colorado

CONDITION OF SAMPLE UPON RECEIPT FORM

CLIENT: Kent + Sullivan WORKORDER NO: 0405095

PROJECT MANAGER: Debbie Fazio INITIALS: DW DATE: 5/12/04

X **Custody seals** broken (on outside of shipping container or on sample containers).
No Chain-of-Custody (**COC**) present.
Number of samples on the COC do not match the number of samples received.
Aqueous samples **not preserved correctly** (see pH discussion below).
SVOC samples contained **residual chlorine** (list sample IDs and affected containers below).
X Samples received at **inappropriate temperature.**
Insufficient sample to perform requested analyses.
Extraction or analytical **holding times** expired in transit.
Broken/leaking bottles and intact bottles received in same cooler (list affected sample IDs below).
No analyses requested.
Incorrect sample type received.
VOAs, reactive CN/S, radon not **headspace** free (list sample IDs and affected vials below).
Airbills not present and/or removable (record applicable shipper's tracking number below).
X Other (describe below).

Describe discrepancy:

- Sample #1 - #10: 500 ml poly bottles are labeled for alkalinity analysis and were received at pH 7. Labels list preservative as HNO_3.
- Cooler #930 received with rear outside custody seal intact. Front custody seal was present but was not intact. All strapping tape was intact.
- All samples received between 10° - 15°C. Insufficient ice packed with samples. Refer to page 1 for cooler temperatures and refer to DOT ~~page~~ Survey pages for cooler contents.

dw 5/12/04

Was the client contacted? ___ No; ✓ Yes: Name Sue Kent Date/Time 5/13/04

Was the pH of any sample adjusted by the laboratory? ___ No; ___ Yes (see Table below):

NOTE: No pH adjustments shall be made without prior consent of Project Manager. After pH adjustment, hold metals and radchem samples ≥ 16 hr before analysis.

Sample ID	*Initial pH*	*Final pH (wait 30 min)*	*Type of Reagent Used*	*Lot No. of Reagent Used*	*Initials / Date / Time*

Was the laboratory directed to proceed with the analysis of any samples yielding the presence of residual chlorine? ___ No; ___ Yes (see notes above).

Project Manager Signature / Date: 5/13/04

000008

SAMPLE LOGIN / DOT SURVEY

Client: Kent & Sullivan Workorder No: 0405095

Project Manager: Debbie Fazio Initials: AW Date: 5/12/04

COOLER #: 866 External Micro R Meter Reading (μ R/hr): 50

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405095-6-5	SW-07	< background
0405095-8-2	SW-09	< background
0405095-8-3	SW-09	< background
0405095-8-4	SW-09	< background
0405095-8-5	SW-09	< background
0405095-10-2	SW-11	< background
0405095-10-3	SW-11	< background
0405095-10-4	SW-11	< background

COOLER #: 933 External Micro R Meter Reading (μ R/hr): 150

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405095-4-1	SW-05	< background
0405095-4-4	SW-05	< background
0405095-4-6	SW-05	< background
0405095-4-7	SW-05	< background
0405095-4-8	SW-05	< background

COOLER #: 930 External Micro R Meter Reading (μ R/hr): 380

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405095-2-1	SW-02	< background
0405095-2-2	SW-02	< background
0405095-2-3	SW-02	< background
0405095-6-8	SW-07	< background
0405095-7-4	SW-08	< background
0405095-7-5	SW-08	< background
0405095-8-1	SW-09	< background
0405095-9-3	SW-10	< background
0405095-10-1	SW-11	< background

If applicable, was the client contacted? **YES / NO / NA** Client Rep. Name: S. Kent Date/Time: 5/12/04

Project Manager Signature/ Date: 5/12/04

SAMPLE LOGIN / DOT SURVEY

Client: Kent & Sullivan Workorder No: 0405095

Project Manager: Debbie Fazio Initials: AW Date: 5/12/04

COOLER #: 681 External Micro R Meter Reading (μ R/hr): 70

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405095-1-1	SW-01	< background
0405095-1-2	SW-01	< background
0405095-1-3	SW-01	< background
0405095-1-4	SW-01	< background
0405095-1-5	SW-01	< background
0405095-3-2	SW-04	< background
0405095-6-1	SW-07	< background
0405095-9-1	SW-10	< background
0405095-9-2	SW-10	< background
0405095-9-5	SW-10	< background

COOLER #: 166 External Micro R Meter Reading (μ R/hr): 60

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405095-2-4	SW-02	< background
0405095-2-5	SW-02	< background
0405095-3-1	SW-04	< background
0405095-3-3	SW-04	< background
0405095-9-4	SW-10	< background
0405095-11-1	FR-01	< background
0405095-11-2	FR-01	< background
0405095-12-1	FR-02	< background
0405095-12-2	FR-02	< background

COOLER #: 9 External Micro R Meter Reading (μ R/hr): 80

Paragon Sample ID:	Client Sample ID:	Micro R Meter Reading (μ R/hr):
0405095-3-4	SW-04	< background
0405095-3-5	SW-04	< background
0405095-4-2	SW-05	< background
0405095-4-3	SW-05	< background
0405095-4-5	SW-05	< background
0405095-5-1	SW-06	< background
0405095-5-2	SW-06	< background
0405095-5-3	SW-06	< background
0405095-5-5	SW-06	< background

If applicable, was the client contacted? YES / NO / NA Client Rep. Name: S. Lent Date/Time: 5/13/04

Project Manager Signature/ Date: 5/13/04

SAMPLE LOGIN / DOT SURVEY

Client: Kent & Sullivan Workorder No: 0405095

Project Manager: Debbie Fazio Initials: AW Date: 5/12/04

COOLER #: **816** External Micro R Meter Reading (μ R/hr): **50**

Paragon Sample ID:	**Client Sample ID:**	**Micro R Meter Reading (μ R/hr):**
0405095-5-4	SW-06	< background

COOLER #: **4** External Micro R Meter Reading (μ R/hr): **100**

Paragon Sample ID:	**Client Sample ID:**	**Micro R Meter Reading (μ R/hr):**
0405095-6-2	SW-07	< background
0405095-6-3	SW-07	< background
0405095-6-4	SW-07	< background
0405095-6-6	SW-07	< background
0405095-6-7	SW-07	< background
0405095-7-1	SW-08	< background
0405095-7-2	SW-08	< background
0405095-7-3	SW-08	< background
0405095-10-5	SW-11	< background

If applicable, was the client contacted? **YES / NO / NA** Client Rep. Name: Stuart Date/Time: 5/13/04

Project Manager Signature/ Date: 5/13/04

0405095

Air Cargo
Alaska Airlines
1-800-2ALASKA

Airbill Number
027 KTN 5436-6152 Box No. 0017

Destination
DEN

Pieces	Total Weight	Date
17	865	10-MAY-04

14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS 50 2 seals
#869

ARTIC 0-0410-3-1635

Air Cargo
Alaska Airlines
1-800-2ALASKA

Airbill Number
027 KTN 5436-6152 Box No. 0003

Destination
DEN

Pieces	Total Weight	Date
17	865	10-MAY-04

14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS
2 seals 150
#933
10°C

ARTIC 0-0410-3-1635

1-800-2ALASKA

027 KTN 5436-6152 Box No. 0012

Destination
DEN

Pieces	Total Weight	Date
17	865	10-MAY-04

14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS 380
#930
Back intact
Front Not
15°C

ARTIC 0-0410-3-1635

1-800-2ALASKA

027 KTN 5436-6152 Box No. 0004

Destination
DEN

Pieces	Total Weight	Date
17	865	10-MAY-04

14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS 70
10°C
#684
2 Seals

ARTIC 0-0410-3-1635

0405095

Air Cargo
Alaska Airlines
1-800-2ALASKA
Airbill Number
027 KTN 5436-6152 Box No. 0013
Destination DEN
Pieces 17 | Total Weight 865 | Date 10-MAY-04
14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS
60 12.00
2 seals
ARTIC 0-0410-3-1635

Air Cargo
Alaska Airlines
1-800-2ALASKA
Airbill Number
027 KTN 5436-6152 Box No. 0016
Destination DEN
Pieces 17 | Total Weight 865 | Date 10-MAY-04
14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS
80 12.00
9 2 seals
ARTIC 0-0410-3-1635

1-800-2ALASKA
027 KTN 5436-6152 Box No. 0005
Destination DEN
Pieces 17 | Total Weight 865 | Date 10-MAY-04
14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS
100
2 seals
ARTIC 0-0410-3-1635

1-800-2ALASKA
027 KTN 5436-6152 Box No. 0014
Destination DEN
Pieces 17 | Total Weight 865 | Date 10-MAY-04
14 RAIDOACTIVE COOLERS COOL
3 MT COOLERS
50 14.00
2 seals
ARTIC 0-0410-3-1635

000013

Inorganic Qualifiers

Inorganic Data Reporting Qualifiers

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Concentration qualifier -- If the analyte was analyzed for but not detected a "U" is entered.

- QC qualifier -- Specified entries and their meanings are as follows:

  N - Spiked sample recovery not within control limits.

  * - Duplicate analysis (relative percent difference) not within control limits.

  B - The method blank for the analysis contained the analyte of interest above the reporting limit.

  Z - Calibration spike recovery not within control limits.

Sample Results

BICARBONATE AS CACO3

Method EPA310.1M

Sample Results

Lab Name: Paragon Analytics
Client Name: Kent & Sullivan Inc.
Client Project ID: Ross Adams
Work Order Number: 0405095
Reporting Basis: As Received

Final Volume: 100 ml
Matrix: WATER
Result Units: mg/l

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
SW-01	0405095-1	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-02	0405095-2	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-04	0405095-3	05/04/2004	05/17/2004	05/17/2004	N/A	1	8.1	5		100 ml
SW-05	0405095-4	05/06/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-06	0405095-5	05/06/2004	05/17/2004	05/17/2004	N/A	1	6.9	5		100 ml
SW-07	0405095-6	05/03/2004	05/17/2004	05/17/2004	N/A	1	8.5	5		100 ml
SW-08	0405095-7	05/03/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-09	0405095-8	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-10	0405095-9	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-11	0405095-10	05/06/2004	05/17/2004	05/17/2004	N/A	1	6.9	5		100 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0405095-1*

CARBONATE AS CACO3

Method EPA310.1C

Sample Results

Lab Name: Paragon Analytics
Client Name: Kent & Sullivan Inc.
Client Project ID: Ross Adams
Work Order Number: 0405095
Reporting Basis: As Received

Final Volume: 100 ml
Matrix: WATER
Result Units: mg/l

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
SW-01	0405095-1	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-02	0405095-2	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-04	0405095-3	05/04/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-05	0405095-4	05/06/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-06	0405095-5	05/06/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-07	0405095-6	05/03/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-08	0405095-7	05/03/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-09	0405095-8	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-10	0405095-9	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-11	0405095-10	05/06/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0405095-1*

TOTAL ALKALINITY As CaCO3

Method EPA310.1

Sample Results

Lab Name: Paragon Analytics
Client Name: Kent & Sullivan Inc.
Client Project ID: Ross Adams
Work Order Number: 0405095
Reporting Basis: As Received

Final Volume: 100 ml
Matrix: WATER
Result Units: mg/l

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
SW-01	0405095-1	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-02	0405095-2	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-04	0405095-3	05/04/2004	05/17/2004	05/17/2004	N/A	1	8.1	5		100 ml
SW-05	0405095-4	05/06/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-06	0405095-5	05/06/2004	05/17/2004	05/17/2004	N/A	1	6.9	5		100 ml
SW-07	0405095-6	05/03/2004	05/17/2004	05/17/2004	N/A	1	8.5	5		100 ml
SW-08	0405095-7	05/03/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-09	0405095-8	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-10	0405095-9	05/05/2004	05/17/2004	05/17/2004	N/A	1	5	5	U	100 ml
SW-11	0405095-10	05/06/2004	05/17/2004	05/17/2004	N/A	1	6.9	5		100 ml

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0405095-1*

QC and Summary Report Forms

BICARBONATE AS CACO3

Method EPA310.1M

Method Blank

Lab Name: Paragon Analytics
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: AK040517-2MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: AK040517-1
QCBatchID: AK040517-1-2
Run ID: AK040517-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: mg/l

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
AK040517-2MB	5/17/04	05/17/2004	N/A	1	5	5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0405095-1*

CARBONATE AS CACO3

Method EPA310.1C

Method Blank

Lab Name: Paragon Analytics
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: AK040517-2MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: AK040517-1
QCBatchID: AK040517-1-2
Run ID: AK040517-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: mg/l

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
AK040517-2MB	5/17/04	05/17/2004	N/A	1	5	5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0405095-1*

TOTAL ALKALINITY As CaCO3

Method EPA310.1

Method Blank

Lab Name: Paragon Analytics
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: AK040517-2MB

Sample Matrix: WATER
% Moisture: N/A

Prep Batch: AK040517-1
QCBatchID: AK040517-1-2
Run ID: AK040517-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: mg/l

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
AK040517-2MB	5/17/04	05/17/2004	N/A	1	5	5	U

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0405095-1*

BICARBONATE AS CACO3

Method EPA310.1M

Laboratory Control Sample

Lab Name: Paragon Analytics
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: AK040517-2LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 05/17/2004
Date Analyzed: 05/17/2004

Prep Batch: AK040517-1
QCBatchID: AK040517-1-2
Run ID: AK040517-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: mg/l

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
10-13-9	BICARBONATE AS CACO3	100	101	5		101	85 - 115

Data Package ID: *AK0405095-1*

CARBONATE AS CACO3

Method EPA310.1C

Laboratory Control Sample

Lab Name: Paragon Analytics
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: AK040517-2LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 05/17/2004
Date Analyzed: 05/17/2004

Prep Batch: AK040517-1
QCBatchID: AK040517-1-2
Run ID: AK040517-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: mg/l

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
3812-32-6	CARBONATE AS CACO3	100	101	5		101	85 - 115

Data Package ID: *AK0405095-1*

TOTAL ALKALINITY As CaCO3

Method EPA310.1

Laboratory Control Sample

Lab Name: Paragon Analytics
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Lab ID: AK040517-2LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 05/17/2004
Date Analyzed: 05/17/2004

Prep Batch: AK040517-1
QCBatchID: AK040517-1-2
Run ID: AK040517-1A
Cleanup: NONE
Basis: N/A

Sample Aliquot: 100 ml
Final Volume: 100 ml
Result Units: mg/l

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
11-43-8	TOTAL ALKALINITY As CaCO3	100	101	5		101	85 - 115

Data Package ID: *AK0405095-1*

BICARBONATE AS CACO3

Method EPA310.1M

Duplicate Sample Results

Lab Name: **Paragon Analytics**
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Reporting Basis: As Received
Sample Aliquot: 100 ml
Final Volume: 100ml
Matrix: WATER
Result Units mg/l

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
SW-01	0405095-1D	05/17/2004	05/17/2004	1	5	U	5	U	5		15

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0405095-1*

CARBONATE AS CACO3

Method EPA310.1C

Duplicate Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Reporting Basis: As Received
Sample Aliquot: 100 ml
Final Volume: 100ml
Matrix: WATER
Result Units mg/l

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
SW-01	0405095-1D	05/17/2004	05/17/2004	1	5	U	5	U	5		15

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0405095-1*

TOTAL ALKALINITY As CaCO3

Method EPA310.1

Duplicate Sample Results

Lab Name: **Paragon Analytics**
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Reporting Basis: As Received
Sample Aliquot: 100 ml
Final Volume: 100ml
Matrix: WATER
Result Units mg/l

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
SW-01	0405095-1D	05/17/2004	05/17/2004	1	5	U	5	U	5		15

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *AK0405095-1*

BICARBONATE AS CACO3

Method EPA310.1M

Calibration Verifications

Lab Name: **Paragon Analytics**
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Date Analyzed: 17-May-04
Run ID: AK040517-1A
Result Units: mg/l

Lab ID	Verification Type	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
CCV1	Continuing Calibration	100	101	5	N/A	101	85 - 115
ICV	Initial Calibration	100	99.2	5	N/A	99	85 - 115

Data Package ID: *AK0405095-1*

CARBONATE AS CACO3

Method EPA310.1C

Calibration Verifications

Lab Name: **Paragon Analytics**
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Date Analyzed: 17-May-04
Run ID: AK040517-1A
Result Units: mg/l

Lab ID	Verification Type	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
CCV1	Continuing Calibration	100	101	5	N/A	101	85 - 115
ICV	Initial Calibration	100	99.2	5	N/A	99	85 - 115

Data Package ID: *AK0405095-1*

TOTAL ALKALINITY As CaCO3

Method EPA310.1

Calibration Verifications

Lab Name: **Paragon Analytics**
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Date Analyzed: 17-May-04
Run ID: AK040517-1A
Result Units: mg/l

Lab ID	Verification Type	Spike Added	Result	Reporting Limit	Result Qualifier	% Rec.	Control Limits
CCV1	Continuing Calibration	100	101	5	N/A	101	85 - 115
ICV	Initial Calibration	100	99.2	5	N/A	99	85 - 115

Data Package ID: *AK0405095-1*

BICARBONATE AS CACO3

Method EPA310.1M

Calibration Blanks

Lab Name: **Paragon Analytics**
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Date Analyzed: 17-May-04
Run ID: AK040517-1A
Result Units: mg/l

Lab ID	Verification Type	Date Analyzed	Result	Reporting Limit	Flag
CCB1	Continuing Calibration	5/17/04	5	5	U
ICB	Initial Calibration	5/17/04	5	5	U

Data Package ID: *AK0405095-1*

CARBONATE AS CACO3

Method EPA310.1C

Calibration Blanks

Lab Name: **Paragon Analytics**
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Date Analyzed: 17-May-04
Run ID: AK040517-1A
Result Units: mg/l

Lab ID	Verification Type	Date Analyzed	Result	Reporting Limit	Flag
CCB1	Continuing Calibration	5/17/04	5	5	U
ICB	Initial Calibration	5/17/04	5	5	U

Data Package ID: *AK0405095-1*

TOTAL ALKALINITY As CaCO3

Method EPA310.1

Calibration Blanks

Lab Name: **Paragon Analytics**
Work Order Number: 0405095
Client Name: Kent & Sullivan Inc.
ClientProject ID: Ross Adams

Date Analyzed: 17-May-04
Run ID: AK040517-1A
Result Units: mg/l

Lab ID	Verification Type	Date Analyzed	Result	Reporting Limit	Flag
CCB1	Continuing Calibration	5/17/04	5	5	U
ICB	Initial Calibration	5/17/04	5	5	U

Data Package ID: *AK0405095-1*

Supporting Raw Data

Alkalinity Calculations and Quality Control Results

Prep and Analysis Date: 05/17/04
Prep and Analysis Time: 1200- 1345
Analyst: EAL

Standardization of titrant:

	Std THAM conc (N):	THAM vol (mL)	HCl vol	calc HCl conc (N):
rep 1	0.2000	1.00	10.49	#DIV/0!
rep 2	0.2000	1.00	10.46	#DIV/0!
rep 3	0.2000	1.00	10.53	#DIV/0!
			mean =	#DIV/0!

Reagent List:

0.020 N HCl Titrant:
RG040506-4
Phenolphthalein Indicator:
RG030610-4
Bromocresol Green Indicator:
RG040506-6
0.20 N Std. THAM:
ST031112-3
0.20 N NaCO3 (ICV, LCS, CCV's - 1.0 mL):
ST031112-4

total alk*
HCO3*
CO3*
CO3*
OH*

ID	aliq titrated (mL)	titrant normality N	vol to pH 8.3 (mL)	vol to pH 4.5 (mL)	total vol (mL)	HCO3	CO3	OH
						mg/L as CaCO3		
ICV	100	#DIV/0!	5.11	5.30	0.00	#DIV/0!	0.00	#DIV/0!
ICB	100	#DIV/0!	0	0.14	0.00	#DIV/0!	0.00	#DIV/0!
AK040517-1MB	100	#DIV/0!	0	0.14	0.00	#DIV/0!	0.00	#DIV/0!
AK040517-1LCS	100	#DIV/0!	5.12	5.35	0.00	#DIV/0!	0.00	#DIV/0!
0405072-2	10.0	#DIV/0!	0	4.62	0.00	#DIV/0!	0.00	#DIV/0!
0405072-2DUP		#DIV/0!	0	4.62	0.00	#DIV/0!	0.00	#DIV/0!
0405072-4		#DIV/0!	0	2.48	0.00	#DIV/0!	0.00	#DIV/0!
0405072-6		#DIV/0!	0	5.93	0.00	#DIV/0!	0.00	#DIV/0!
0405072-7		#DIV/0!	0	9.39	0.00	#DIV/0!	0.00	#DIV/0!
0405037-2	10.0	#DIV/0!	0	3.87	0.00	#DIV/0!	0.00	#DIV/0!
0405046-2	10.0	#DIV/0!	0	6.05	0.00	#DIV/0!	0.00	#DIV/0!
0405046-3		#DIV/0!	0	5.50	0.00	#DIV/0!	0.00	#DIV/0!
0405062-2	10.0	#DIV/0!	0	3.42	0.00	#DIV/0!	0.00	#DIV/0!
0405062-3	100	#DIV/0!	0	2.33	0.00	#DIV/0!	0.00	#DIV/0!
0405062-5	10.0	#DIV/0!	0	3.04	0.00	#DIV/0!	0.00	#DIV/0!
0405062-6		#DIV/0!	0	3.07	0.00	#DIV/0!	0.00	#DIV/0!
0405073-2	10.0	#DIV/0!	0	3.90	0.00	#DIV/0!	0.00	#DIV/0!
0405112-1	10.0	#DIV/0!	0	16.18	0.00	#DIV/0!	0.00	#DIV/0!
0405112-2	10.0	#DIV/0!	0.20	3.25	0.00	#DIV/0!	0.00	#DIV/0!
0405112-3	5.0	#DIV/0!	0.33	11.09	0.00	#DIV/0!	0.00	#DIV/0!
0405112-4	5.0	#DIV/0!	0	13.29	0.00	#DIV/0!	0.00	#DIV/0!
0405112-5		#DIV/0!	0	3.37	0.00	#DIV/0!	0.00	#DIV/0!
CCV	100	#DIV/0!	5.21	5.38	0.00	#DIV/0!	0.00	#DIV/0!
CCB	100	#DIV/0!	0	0.22	0.00	#DIV/0!	0.00	#DIV/0!
0405112-6	5.0	#DIV/0!	0	4.70	0.00	#DIV/0!	0.00	#DIV/0!
0405112-7	5.0	#DIV/0!	0	4.69	0.00	#DIV/0!	0.00	#DIV/0!
0405112-8	5.0	#DIV/0!	0.15	12.76	0.00	#DIV/0!	0.00	#DIV/0!
AK040517-1MB	100	#DIV/0!	0	0.23	0.00	#DIV/0!	0.00	#DIV/0!
AK040517-1LCS	100	#DIV/0!	5.22	5.38	0.00	#DIV/0!	0.00	#DIV/0!
0405095-1	100	#DIV/0!	0	0.27	0.00	#DIV/0!	0.00	#DIV/0!
0405095-1DUP		#DIV/0!	0	0.31	0.00	#DIV/0!	0.00	#DIV/0!
0405095-2		#DIV/0!	0	0.31	0.00	#DIV/0!	0.00	#DIV/0!
0405095-3		#DIV/0!	0	0.85	0.00	#DIV/0!	0.00	#DIV/0!
0405095-4		#DIV/0!	0	0.25	0.00	#DIV/0!	0.00	#DIV/0!
0405095-5		#DIV/0!	0	0.72	0.00	#DIV/0!	0.00	#DIV/0!
0405095-6		#DIV/0!	0	0.89	0.00	#DIV/0!	0.00	#DIV/0!
0405095-7		#DIV/0!	0	0.41	0.00	#DIV/0!	0.00	#DIV/0!
0405095-8		#DIV/0!	0	0.29	0.00	#DIV/0!	0.00	#DIV/0!
0405095-9		#DIV/0!	0	0.31	0.00	#DIV/0!	0.00	#DIV/0!
0405095-10		#DIV/0!	0	0.72	0.00	#DIV/0!	0.00	#DIV/0!

ND = Not Detected
DNR = Do Not Report

5/17/04

SW 5/19/04 000037

0517alk.xls

Alkalinity Calculations and Quality Control Results

Prep and Analysis Date: 05/17/04
Prep and Analysis Time: 1200-1345
Analyst: EAL

Standardization of titrant:

	Std THAM conc (N):	THAM vol (mL)	HCl vol	calc HCl conc (N):
rep 1	0.2000	1.00	10.49	0.01907
rep 2	0.2000	1.00	10.46	0.01912
rep 3	0.2000	1.00	10.53	0.01899
			mean =	0.01906

Reagent List:

0.020 N HCl Titrant:
RG040506-4
Phenolphthalein Indicator:
RG030610-4
Bromocresol Green Indicator:
RG040506-6
0.20 N Std. THAM:
ST031112-3
0.20 N NaCO3 (ICV, LCS, CCV's - 1.0 mL):
ST031112-4

total alk* = T x N x 50000 / aliq titrated (mL)
HCO3* = (T-2P) x N x 50000 / aliq titrated (mL)
CO3* = 2P x N x 50000 / aliq titrated (mL), if P <= T/2
CO3* = 2(T-P) x N x 50000 / aliq titrated (mL), if P > T/2
OH* = (2P-T) x N x 50000 / aliq titrated (mL)
* units are mg/L as CaCO3

N = normality of standard HCl titrant
P = mL standard acid required to pH 8.3
T = total mL standard acid required to pH 4.6

ID	aliq titrated (mL)	titrant normality N	vol to pH 8.3 (mL)	vol to pH 4.5 (mL)	total vol (mL)	HCO3 (mg/L as CaCO3)	CO3 (mg/L as CaCO3)	OH (mg/L as CaCO3)	total alk (mg/L as CaCO3)	DL (mg/L)	recovery %	recovery limit
ICV	100	0.0191	5.11	5.30	10.41	1.811	97.40	0.000	99.207	5	99	85-115%
ICB	100	0.0191	0	0.14	0.14	1.334	0.00	0.000	ND	5		
AK040517-1MB	100	0.0191	0	0.14	0.14	1.334	0.00	0.000	ND	5		
AK040517-1LCS	100	0.0191	5.12	5.35	10.47	2.192	97.59	0.000	99.778	5	100	85-115%
0405072-2	10	0.0191	0	4.62	4.62	440.283	0.00	0.000	440.283	50		
0405072-2DUP	10	0.0191	0	4.62	4.62	440.283	0.00	0.000	440.283	50		
0405072-4	10	0.0191	0	2.48	2.48	236.342	0.00	0.000	236.342	50		
0405072-6	10	0.0191	0	5.93	5.93	565.125	0.00	0.000	565.125	50		
0405072-7	10	0.0191	0	9.39	9.39	894.861	0.00	0.000	894.861	50		
0405037-2	10	0.0191	0	3.87	3.87	368.808	0.00	0.000	368.808	50		
0405046-2	10	0.0191	0	6.05	6.05	576.561	0.00	0.000	576.561	50		
0405046-3	10	0.0191	0	5.50	5.50	524.146	0.00	0.000	524.146	50		
0405062-2	10	0.0191	0	3.42	3.42	325.924	0.00	0.000	325.924	50		
0405062-3	100	0.0191	0	2.33	2.33	22.205	0.00	0.000	22.205	5		
0405062-5	10	0.0191	0	3.04	3.04	289.710	0.00	0.000	289.710	50		
0405062-6	10	0.0191	0	3.07	3.07	292.569	0.00	0.000	292.569	50		
0405073-2	10	0.0191	0	3.90	3.90	371.667	0.00	0.000	371.667	50		
0405112-1	10	0.0191	0	16.18	16.18	1541.943	0.00	0.000	1541.943	50		
0405112-2	10	0.0191	0.2	3.25	3.45	290.663	38.12	0.000	328.783	50		
0405112-3	10	0.0191	0.33	11.09	11.42	1025.421	62.90	0.000	1088.318	50		
0405112-4	5	0.0191	0	13.29	13.29	2533.056	0.00	0.000	2533.056	100		
0405112-5	5	0.0191	0	3.37	3.37	642.317	0.00	0.000	642.317	100		
CCV	100	0.0191	5.21	5.38	10.59	1.620	99.30	0.000	100.922	5	101	85-115%
CCB	100	0.0191	0	0.22	0.22	2.097	0.00	0.000	ND	5		
0405112-6	5	0.0191	0	4.70	4.70	895.814	0.00	0.000	895.814	100		
0405112-7	5	0.0191	0	4.69	4.69	893.908	0.00	0.000	893.908	100		
0405112-8	5	0.0191	0.15	12.76	12.91	2403.449	57.18	0.000	2460.628	100		
AK040517-1MB	100	0.0191	0	0.23	0.23	2.192	0.00	0.000	ND	5		
AK040517-1LCS	100	0.0191	5.22	5.38	10.60	1.525	99.49	0.000	101.017	5	101	85-115%
0405095-1	100	0.0191	0	0.27	0.27	2.573	0.00	0.000	ND	5		
0405095-1DUP	100	0.0191	0	0.31	0.31	2.954	0.00	0.000	ND	5		
0405095-2	100	0.0191	0	0.31	0.31	2.954	0.00	0.000	ND	5		
0405095-3	100	0.0191	0	0.85	0.85	8.100	0.00	0.000	8.100	5		
0405095-4	100	0.0191	0	0.25	0.25	2.382	0.00	0.000	ND	5		
0405095-5	100	0.0191	0	0.72	0.72	6.862	0.00	0.000	6.862	5		
0405095-6	100	0.0191	0	0.89	0.89	8.482	0.00	0.000	8.482	5		
0405095-7	100	0.0191	0	0.41	0.41	3.907	0.00	0.000	ND	5		
0405095-8	100	0.0191	0	0.29	0.29	2.764	0.00	0.000	ND	5		
0405095-9	100	0.0191	0	0.31	0.31	2.954	0.00	0.000	ND	5		
0405095-10	100	0.0191	0	0.72	0.72	6.862	0.00	0.000	6.862	5		

ND = Not Detected
DNR = Do Not Report

Alkalinity Quality Control Results

(alkalinity conc. expressed as mg/L CaCO3)

BLANK SUMMARY

ID	blank alk conc (mg/L)	accept. limit (mg/L)
AK040517-1MB	ND	5
AK040517-1MB	ND	5

LCS SUMMARY

ID	expected alk conc (mg/L)	alk conc found (mg/L)	recovery %	recovery acceptance limit
AK040517-1LCS	100.0	99.8	100	85-115%
AK040517-1LCS	100.0	101.0	101	85-115%

DUPLICATE SUMMARY (ALK)

ID	native alk conc (mg/L)	duplic alk conc (mg/L)	RPD %	accept. limits
0405072-2	440.3	440.3	0	0-15%
0405095-1	ND	ND	NA	0-15%

DUPLICATE SUMMARY (CO3)

ID	native alk conc (mg/L)	duplic alk conc (mg/L)	RPD %	accept. limits
0405072-2	0.0	0.0	NA	0-15%
0405095-1	0.0	0.0	NA	0-15%

DUPLICATE SUMMARY (HCO3)

ID	native alk conc (mg/L)	duplic alk conc (mg/L)	RPD %	accept. limits
0405072-2	440.3	440.3	0	0-15%
0405095-1	ND	ND	NA	0-15%

DUPLICATE SUMMARY (OH)

ID	native alk conc (mg/L)	duplic alk conc (mg/L)	RPD %	accept. limits
0405072-2	0.0	0.0	NA	0-15%
0405095-1	0.0	0.0	NA	0-15%

ND = Not Detected
NA = Not Applicable

Bicarbonate, Carbonate, Hydroxide and Total Alkalinity by Titration
Method SM2320B/EPA310.1 - SOP 1106

Instrument : Meter : Fisher Scientific pH / mV meter model 50 (SN C0000643)
Electrode : Orion - Ross Sure-Flow Electrode Model 81-72BN

Matrix:	Water	Soil
	MDL	MDL
	mg/L	mg/Kg
	NA	NA

Expiration Dates :

SW
5/19/04