

# Certificate of Analysis

Report Date: 14-Oct-2009

Order Date: 5-Oct-2009

 Client: **INTERA Engineering Ltd.**

Client PO:

Project Description: 09-205

	Client ID:	SS1-b	SS1-c	SS1-d	SS1-e
	Sample Date:	30-Sep-09	30-Sep-09	30-Sep-09	30-Sep-09
	Sample ID:	0941033-01	0941033-02	0941033-03	0941033-04
	MDL/Units	Water	Water	Water	Water
Silver	0.1 ug/L	-	<0.1	<0.1	-
Sodium	200 ug/L	-	48800	49000	-
Strontium	10 ug/L	-	1090	1100	-
Thallium	0.1 ug/L	-	<0.1	<0.1	-
Tin	5 ug/L	-	<5	<5	-
Titanium	5 ug/L	-	8	6	-
Tungsten	10 ug/L	-	<10	<10	-
Uranium	0.1 ug/L	-	2.0	2.2	-
Vanadium	1 ug/L	-	4	6	-
Zinc	10 ug/L	-	<10	<10	-

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Order Date: 5-Oct-2009

 Client: **INTERA Engineering Ltd.**

Client PO:

Project Description: 09-205

## Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Anions</b>									
Bromide	ND	0.1	mg/L						
Chloride	ND	1	mg/L						
Fluoride	ND	0.1	mg/L						
Nitrate as N	ND	0.1	mg/L						
Nitrite as N	ND	0.05	mg/L						
Phosphate as P	ND	1	mg/L						
Sulphate	ND	1	mg/L						
<b>General Inorganics</b>									
Ammonia as N	ND	0.01	mg/L						
Phosphorus, total	ND	0.01	mg/L						
Total Kjeldahl Nitrogen	ND	0.1	mg/L						
<b>Metals</b>									
Aluminum	ND	1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	5	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10.0	ug/L						
Cadmium	ND	0.1	ug/L						
Calcium	ND	100	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Iron	ND	100	ug/L						
Lead	ND	0.1	ug/L						
Magnesium	ND	200	ug/L						
Manganese	ND	5	ug/L						
Molybdenum	ND	1	ug/L						
Nickel	ND	1	ug/L						
Potassium	ND	100	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Strontium	ND	10	ug/L						
Thallium	ND	0.1	ug/L						
Tin	ND	5	ug/L						
Titanium	ND	5	ug/L						
Tungsten	ND	10	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	1	ug/L						
Zinc	ND	10	ug/L						

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Order Date: 5-Oct-2009

Client: **INTERA Engineering Ltd.**

Client PO:

Project Description: 09-205

**Method Quality Control: Duplicate**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Anions</b>									
Bromide	ND	0.1	mg/L	ND				20	
Chloride	1.52	1	mg/L	1.51			0.8	10	
Fluoride	ND	0.1	mg/L	ND				10	
Nitrate as N	ND	0.1	mg/L	ND				20	
Nitrite as N	ND	0.05	mg/L	ND				20	
Phosphate as P	ND	1	mg/L	ND				20	
Sulphate	5.67	1	mg/L	5.61			1.1	10	
<b>General Inorganics</b>									
Ammonia as N	0.089	0.01	mg/L	0.084			5.6	8	
Phosphorus, total	ND	0.01	mg/L	ND				10	
Total Kjeldahl Nitrogen	0.35	0.1	mg/L	0.35			1.6	10	
<b>Metals</b>									
Aluminum	46.8	1	ug/L	54.7			15.5	27	
Antimony	1.22	0.5	ug/L	ND				26	QR-01
Arsenic	1.0	1	ug/L	ND				29	QR-01
Barium	20.0	5	ug/L	20.5			2.5	34	
Beryllium	ND	0.5	ug/L	ND				25	
Boron	16	10.0	ug/L	15			8.0	33	
Cadmium	ND	0.1	ug/L	ND				33	
Calcium	45100	100	ug/L	45000			0.2	30	
Chromium	4.5	1	ug/L	4.1			8.4	32	
Cobalt	ND	0.5	ug/L	ND				32	
Copper	0.92	0.5	ug/L	0.94			2.7	32	
Iron	ND	100	ug/L	ND				32	
Lead	ND	0.1	ug/L	ND				32	
Magnesium	7840	200	ug/L	7740			1.3	30	
Manganese	ND	5	ug/L	ND				29	
Molybdenum	3.4	1	ug/L	3.2			7.0	29	
Nickel	1.0	1	ug/L	ND				29	
Potassium	1370	100	ug/L	1420			3.4	28	
Selenium	1.5	1	ug/L	1.4			3.6	28	
Silver	ND	0.1	ug/L	ND				28	
Sodium	15400	200	ug/L	15000			2.5	27	
Strontium	170	10	ug/L	171			0.9	27	
Thallium	ND	0.1	ug/L	ND				27	
Tin	ND	5	ug/L	ND				27	
Titanium	ND	5	ug/L	ND				27	
Tungsten	ND	10	ug/L	ND				25	
Uranium	0.2	0.1	ug/L	0.2			1.6	27	
Vanadium	1.4	1	ug/L	1.3			8.6	27	
Zinc	ND	10	ug/L	ND				27	

**Certificate of Analysis**

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Order Date: 5-Oct-2009

 Client: **INTERA Engineering Ltd.**

Client PO:

Project Description: 09-205

**Method Quality Control: Spike**

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Anions</b>									
Bromide	0.99	0.1	mg/L	ND	99.1	72-106			
Chloride	10.7	1	mg/L	ND	107	78-112			
Fluoride	0.98	0.1	mg/L	ND	98.1	73-113			
Nitrate as N	1.01	0.1	mg/L	ND	101	81-112			
Nitrite as N	1.00	0.05	mg/L	ND	100	76-107			
Phosphate as P	4.18	1	mg/L	ND	83.6	72-131			
Sulphate	10.2	1	mg/L	ND	102	75-111			
<b>General Inorganics</b>									
Ammonia as N	0.268	0.01	mg/L	ND	107	81-124			
Phosphorus, total	0.540	0.01	mg/L	ND	108	80-120			
Total Kjeldahl Nitrogen	2.00	0.1	mg/L	ND	99.8	81-126			
<b>Metals</b>									
Aluminum	39.1		ug/L	ND	78.2	74-130			
Antimony	41.5		ug/L	ND	82.9	78-126			
Arsenic	46.2		ug/L	ND	92.4	83-119			
Barium	44.9		ug/L	ND	89.8	83-116			
Beryllium	46.5		ug/L	ND	93.0	72-132			
Boron	48		ug/L	ND	95.7	71-128			
Cadmium	47.5		ug/L	ND	95.0	78-119			
Calcium	910		ug/L	ND	91.0	64-127			
Chromium	47.0		ug/L	ND	93.9	80-124			
Cobalt	46.1		ug/L	ND	92.1	78-125			
Copper	46.2		ug/L	ND	92.5	75-123			
Iron	893		ug/L	ND	89.3	66-119			
Lead	46.4		ug/L	ND	92.9	77-126			
Magnesium	939		ug/L	ND	93.9	75-131			
Manganese	44.5		ug/L	ND	88.9	79-123			
Molybdenum	47.3		ug/L	ND	94.6	82-119			
Nickel	46.0		ug/L	ND	91.9	78-119			
Potassium	870		ug/L	ND	87.0	70-129			
Selenium	47.1		ug/L	ND	94.1	81-125			
Silver	44.1		ug/L	ND	88.1	70-128			
Sodium	961		ug/L	ND	96.1	67-132			
Strontium	48		ug/L	ND	95.3	88-114			
Thallium	47.8		ug/L	ND	95.6	82-127			
Tin	47.2		ug/L	ND	94.5	75-123			
Titanium	48.8		ug/L	ND	97.6	84-118			
Tungsten	48.9		ug/L	ND	97.8	70-130			
Uranium	41.6		ug/L	ND	83.3	70-131			
Vanadium	46.8		ug/L	ND	93.6	82-123			
Zinc	41		ug/L	ND	82.0	78-130			

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Project Description: 09-205

**Sample and QC Qualifiers Notes**

1- QR-01 : Duplicate RPD is high, however, the sample result is less than 10x the MDL.

**Sample Data Revisions**

None

**Work Order Revisions/Comments:**

None

**Other Report Notes:**

n/a: not applicable

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.



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p: 1-800-749-1947  
e: paracel@paracellabs.com

www.paracellabs.com

Chain of Custody Record

№ 59914

Pg. 1 of 1

Company Name: Intra Engineering Ltd. Project Ref: 09-705  
 Contact Name: Sean Sterling PO# \_\_\_\_\_  
 Address: 1 Rampart St. Suite 200 Ottawa Quote # \_\_\_\_\_  Not Quoted  
 Tel: 437-232-2525 Cell: \_\_\_\_\_  
 Email: sssterling@intra.ca Preservative to be added by Paracel?  Yes  No

Date Required: \_\_\_\_\_  
 Turn Around Time:  1-day  2-day  Regular  
 Regulatory/Guideline Requirements

Matrix Types: S-Soil/Sed GW-Ground Water SW-Surface Water SS-Storm/Sanitary Sewer A-Air O-Other RDW-Regulated Drinking Water

Sample Information					Analysis Required														
Parcel Order #	Matrix	Air Volume	# Containers	Date Sampled dd/mm/yy	Nitrates	Metals	Trace												Hazardous? (Y/N)
0941033																			
Sample Identification																			
1	SS1-b	SW	125ml	1	30-Sep-09	X													
2	SS1-c	SW	125ml	1	30-Sep-09		X												
3	SS1-d	SW	125ml	1	30-Sep-09		X												
4	SS1-e	SW	100ml	1	30-Sep-09			X											
5																			
6																			
7																			
8																			
9																			
10																			

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

Relinquished By: Smurphy Received at Depot: \_\_\_\_\_  
 Date: 05-Oct-09 Time: 14:00 Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received at Lab: Ueol Verified By: Ueol  
 Date: 10/05/09 Time: 15:40 Date: 10/05/09 Time: 17:15

Please refer to the back page for Locations and Sample Preservation, Container and Hold Time Requirements. WHITE - Lab Copy, PINK - Client Copy

## Certificate of Analysis

### INTERA Engineering Ltd.

Suite 200, 1 Raymond St.

Ottawa, ON K1R 1A2

Attn: Sean Sterling

Phone: (613) 232-2525

Fax: (613) 232-7149

Client PO:

Project: 09-205

Custody: 61032

Report Date: 23-Oct-2009


Order Date: 15-Oct-2009

**Order #: 0942110**

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
0942110-01	MW5-SS

Approved By:



Mark Foto, M.Sc. For Dale Robertson, BSc  
Laboratory Director

Any use of these results implies your agreement that our total liability in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

## Certificate of Analysis

Report Date: 23-Oct-2009

Order Date: 15-Oct-2009

Client: **INTERA Engineering Ltd.**

Client PO:

Project Description: 09-205

### Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Alkalinity, total	EPA 310.1 - Titration	16-Oct-09	16-Oct-09
Ammonia, as N	EPA 351.2 - Auto Colour	17-Oct-09	17-Oct-09
Anions	EPA 300.1 - IC	15-Oct-09	20-Oct-09
Chlorine, total	HACH - DPD Colourimetric	16-Oct-09	16-Oct-09
Conductivity	EPA 120.1 - probe	15-Oct-09	15-Oct-09
Metals, low level	EPA 200.8 - ICP-MS	16-Oct-09	16-Oct-09
pH	EPA 150.1 - pH probe	15-Oct-09	15-Oct-09
Phosphorus, total	EPA 365.4 - Auto Colour, digestion	20-Oct-09	20-Oct-09
Solids, dissolved	EPA SM 2540C - gravimetric, filtration	21-Oct-09	23-Oct-09
Solids, total suspended	SM 2540D - Gravimetric	19-Oct-09	19-Oct-09
Total Kjeldahl Nitrogen	EPA 351.2 - Auto Colour, digestion	21-Oct-09	21-Oct-09
Turbidity	SM 2130B - Turbidity meter	16-Oct-09	16-Oct-09



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Order Date: 15-Oct-2009

 Client: **INTERA Engineering Ltd.**

Client PO:

Project Description: 09-205

<b>Client ID:</b>	MW5-SS	-	-	-
<b>Sample Date:</b>	09-Oct-09	-	-	-
<b>Sample ID:</b>	0942110-01	-	-	-
<b>MDL/Units</b>	Water	-	-	-

**General Inorganics**

Alkalinity, total	5 mg/L	316	-	-	-
Ammonia as N	0.01 mg/L	0.13	-	-	-
Chlorine, total	0.01 mg/L	0.01	-	-	-
Conductivity	5 uS/cm	978	-	-	-
pH	0.05 pH Units	7.50	-	-	-
Phosphorus, total	0.01 mg/L	<0.01	-	-	-
Total Dissolved Solids	10 mg/L	1090 [2]	-	-	-
Total Suspended Solids	2 mg/L	2	-	-	-
Total Kjeldahl Nitrogen	0.1 mg/L	0.2	-	-	-
Turbidity	0.1 NTU	0.3 [1]	-	-	-

**Anions**

Bromide	0.1 mg/L	<0.1	-	-	-
Chloride	1 mg/L	200	-	-	-
Fluoride	0.1 mg/L	<0.1	-	-	-
Nitrate as N	0.1 mg/L	<0.1	-	-	-
Nitrite as N	0.05 mg/L	<0.05	-	-	-
Phosphate as P	1 mg/L	<1	-	-	-
Sulphate	1 mg/L	54	-	-	-

**Metals**

Aluminum	1 ug/L	4	-	-	-
Antimony	0.5 ug/L	<0.5	-	-	-
Arsenic	1 ug/L	<1	-	-	-
Barium	5 ug/L	148	-	-	-
Beryllium	0.5 ug/L	<0.5	-	-	-
Boron	10.0 ug/L	<10.0	-	-	-
Cadmium	0.1 ug/L	<0.1	-	-	-
Calcium	100 ug/L	117000	-	-	-
Chromium	1 ug/L	5	-	-	-
Cobalt	0.5 ug/L	0.6	-	-	-
Copper	0.5 ug/L	2.0	-	-	-
Iron	100 ug/L	<100	-	-	-

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Order Date: 15-Oct-2009

 Client: **INTERA Engineering Ltd.**

Client PO:

Project Description: 09-205

	Client ID:	MW5-SS	-	-	-
	Sample Date:	09-Oct-09	-	-	-
	Sample ID:	0942110-01	-	-	-
	MDL/Units	Water	-	-	-
Lead	0.1 ug/L	<0.1	-	-	-
Magnesium	200 ug/L	32100	-	-	-
Manganese	5 ug/L	26	-	-	-
Molybdenum	1 ug/L	<1	-	-	-
Nickel	1 ug/L	5	-	-	-
Potassium	100 ug/L	2290	-	-	-
Selenium	1 ug/L	<1	-	-	-
Silver	0.1 ug/L	<0.1	-	-	-
Sodium	200 ug/L	52100	-	-	-
Strontium	10 ug/L	294	-	-	-
Thallium	0.1 ug/L	<0.1	-	-	-
Tin	5 ug/L	<5	-	-	-
Titanium	5 ug/L	<5	-	-	-
Tungsten	10 ug/L	<10	-	-	-
Uranium	0.1 ug/L	0.6	-	-	-
Vanadium	1 ug/L	3	-	-	-
Zinc	10 ug/L	11	-	-	-

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 Client: **INTERA Engineering Ltd.**

Client PO:

Project Description: 09-205

## Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Anions</b>									
Bromide	ND	0.1	mg/L						
Chloride	ND	1	mg/L						
Fluoride	ND	0.1	mg/L						
Nitrate as N	ND	0.1	mg/L						
Nitrite as N	ND	0.05	mg/L						
Phosphate as P	ND	1	mg/L						
Sulphate	ND	1	mg/L						
<b>General Inorganics</b>									
Alkalinity, total	ND	5	mg/L						
Ammonia as N	ND	0.01	mg/L						
Chlorine, total	ND	0.01	mg/L						
Conductivity	ND	5	uS/cm						
Phosphorus, total	ND	0.01	mg/L						
Total Dissolved Solids	ND	10	mg/L						
Total Suspended Solids	ND	2	mg/L						
Total Kjeldahl Nitrogen	ND	0.1	mg/L						
Turbidity	ND	0.1	NTU						
<b>Metals</b>									
Aluminum	ND	1	ug/L						
Antimony	ND	0.5	ug/L						
Arsenic	ND	1	ug/L						
Barium	ND	5	ug/L						
Beryllium	ND	0.5	ug/L						
Boron	ND	10.0	ug/L						
Cadmium	ND	0.1	ug/L						
Calcium	ND	100	ug/L						
Chromium	ND	1	ug/L						
Cobalt	ND	0.5	ug/L						
Copper	ND	0.5	ug/L						
Iron	ND	100	ug/L						
Lead	ND	0.1	ug/L						
Magnesium	ND	200	ug/L						
Manganese	ND	5	ug/L						
Molybdenum	ND	1	ug/L						
Nickel	ND	1	ug/L						
Potassium	ND	100	ug/L						
Selenium	ND	1	ug/L						
Silver	ND	0.1	ug/L						
Sodium	ND	200	ug/L						
Strontium	ND	10	ug/L						
Thallium	ND	0.1	ug/L						
Tin	ND	5	ug/L						
Titanium	ND	5	ug/L						
Tungsten	ND	10	ug/L						
Uranium	ND	0.1	ug/L						
Vanadium	ND	1	ug/L						
Zinc	ND	10	ug/L						