

December 6, 2012

**Halifax Regional Municipality  
Energy and Environment**

PO Box 1749  
Halifax, Nova Scotia  
B3J 3A5

**Attention: Mr. Cameron Deacoff**

Dear Mr. Deacoff:

**RE: Final Report: Water Quality Monitoring within Bedford West, Bedford, Nova Scotia – October 2012 Sampling Event**

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**1. INTRODUCTION**

SNC-Lavalin Inc., Environment Division (SLE) was retained by the Halifax Regional Municipality (HRM) to conduct water quality monitoring within Bedford West. The Paper Mill Lake watershed is the primary watershed within the area. The water sampling program consisted of collecting surface water samples from eleven (11) specified locations as part of the October 2012 sampling event. The purpose of the program is to determine water quality for watersheds impacted by the development in the Bedford West area. The overall purpose of the monitoring program is to conduct water quality testing prior to construction activities (establish baseline conditions) in order to detect any impacts on and/or changes to water quality during and after construction of the development project.

This report presents water quality data from Kearney Lake, Kearney Lake Run, Highway 102, Lakeshore Drive, Larry Uteck Boulevard and Paper Mill Lake, collected on October 10 and October 11, 2012. The water quality test locations are presented on Figure 1.



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## **2. METHODOLOGY**

The October 2012 monitoring event methodology consisted of the sampling and analyses of general chemistry (RCap), total metals, total phosphorous, total suspended solids, E. coli bacteria, TKN and chlorophyll-a from eleven (11) specified surface water sampling locations. Standard field measurements (pH, water temperature, dissolved oxygen, conductivity, secchi depth, air temperature, cloud cover, and wildlife sightings) were to be measured at the eleven (11) specified sampling locations for the October 2012 monitoring event. The field measurements were collected using an AM100 Aqua Meter and AP800 Aqua Probe. For 2009 SLE sampling events, Oakton Portable Waterproof Meters were used for collecting field measurements (Dissolved Oxygen Meter – 35601-Series; pH and Conductivity – 35630-00 and 35630-02, respectively), and for 2010-2011 SLE sampling events, Hach intelliCAL probes for pH, conductivity and dissolved oxygen (Product Numbers pHC30101, CDC40101 and LDO10101, respectively) were used. The samples and field parameter readings were collected from a 1.0 metre depth whenever possible.

The field parameters and site conditions for each sampling location were recorded on a field report. The field reports are provided in Attachment 1. Photographs of each sampling location are attached in Attachment 2.

A new pair of latex gloves was used at each sample location. Surface water samples were collected and placed in clean laboratory-supplied jars and stored in a chilled container together with a chain of custody record for transport to the laboratory. All surface water samples collected were submitted to AGAT Laboratories, located in Dartmouth, Nova Scotia.

Secchi depth measurements were taken from the shady side of the boat at two sample locations. The secchi disk was lowered in the water until no longer visible. The depth was measured to the nearest tenth of a metre. The disk was raised until visible in the water and the depth was measured. The secchi depth is the midpoint between the two measured depths.



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### **3. ASSESSMENT STANDARDS**

The Canadian Council of Ministers of the Environment (CCME) guidelines for water are broken down based on water use including Freshwater Aquatic Life, Marine Water Aquatic Life, Irrigation, Livestock Watering and Aesthetics and Drinking Water. The surface water quality results were compared to the CCME Freshwater Aquatic Life (FWAL) guidelines since the specified sampling locations are located at and/or near adjacent freshwater bodies.

Analytical data for total suspended solids (TSS) and turbidity are compared to the CCME for the Protection of Aquatic Life (CCME Narrative Total Particulate Matter – Table 1 Suspended Sediments and Turbidity, High Flow Conditions, 1999, updated 2002).

For TSS, the guideline value is equal to a maximum increase of 25 mg/L from background levels at any time when background levels are between 25 and 250 mg/L. When background is greater than 250 mg/L, the concentration should not increase more than 10% of background levels.

The Health Canada guidelines for Canadian Recreational Water Quality (2012, Third Edition) were used as reference guidelines. The Canadian Recreational Water Quality guidelines indicate that the clarity of the water should be sufficiently clear such that a Secchi disk is visible at a minimum of 1.2 metres. For turbidity, a limit of 50 Nephelometric Turbidity Units (NTU) is suggested.

### **4. RESULTS OF THE INVESTIGATION**

One surface water sample location associated with Paper Mill Lake, PML2, was not collected as part of the October 2012 sampling program since recent draining of the lake made access to this area unsafe. Photographs of the area are provided in Attachment 2 (Photo 10).



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## **4.1. FIELD MEASUREMENTS**

Field parameters were measured at ten (10) of the eleven (11) sampling locations during the October 2012 monitoring event. Field measurements of dissolved oxygen, pH, conductivity and temperature are presented in Table 1. Dissolved oxygen readings of 3.83 mg/L and 3.28 mg/L were recorded at sample locations HWY102-1 and HWY102-2, respectively, which are outside the CCME FWAL guideline range of 5.5-9.5 mg/L. All other dissolved oxygen readings for the remaining three sample locations were within the applied CCME FWAL guideline range.

## **4.2. LABORATORY ANALYTICAL RESULTS**

### **4.2.1. GENERAL CHEMISTRY**

The analytical results reported pH levels within the acceptable range of 6.5-9.0 for all sample locations. During previous sampling rounds, it has not been uncommon to encounter pH levels slightly below the acceptable CCME FWAL range.

All other general chemistry parameters analyzed were also within their respective applicable guidelines.

### **4.2.2. METALS**

Analytical results reported total aluminum concentrations of above the CCME FWAL guideline of 5-100 µg/L at KL1, KL2, KL3, KL4, KL5, HWY102-1, HWY102-2, LSD, LU and PML1 (total aluminum: 168 µg/L, 338 µg/L, 153 µg/L, 149 µg/L, 154 µg/L, 146 µg/L, 259 µg/L, 186 µg/L, 252 µg/L, and 306 µg/L, respectively).

The analytical results reported total cadmium concentrations of above the CCME FWAL guideline of 0.017 µg/L at KL1, KL3, KL4, KL5, HWY102-2, LSD, LU and PML1 (total cadmium: 0.021 µg/L, 0.027 µg/L, 0.027 µg/L, 0.029 µg/L, 0.032 µg/L, 0.023 µg/L, 0.168 µg/L and 0.066 µg/L, respectively).

Total iron exceeded the CCME FWAL guideline of 300 µg/L at sample locations KL2, HWY102-2, LSD, LU and PML1 (813 µg/L, 1550 µg/L, 312 µg/L, 500 µg/L, and 742 µg/L, respectively).



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Total zinc exceeded the CCME FWAL guideline of 30 µg/L at three sample locations, KL4, KL5 and LU (68 µg/L, 64 µg/L and 39 µg/L, respectively).

All other metals parameters were reported to be within the applied CCME FWAL guidelines. Surface water metals results have been provided in Table 1. Laboratory certificates have been provided in Attachment 3.

#### **4.2.3. MICROBIOLOGICAL**

The laboratory analytical results reported E. Coli concentrations were reported to be within the referenced Health Canada Recreational Water Quality guidelines of 400 MPN/100 mL for all sample locations.

Surface water microbiological results have been provided in Table 1. Laboratory certificates have been provided in Attachment 3.

### **5. CONCLUSIONS**

Water quality monitoring within Bedford West was conducted on October 10 and 11, 2012, and included the collection of field parameters (pH, water temperature, dissolved oxygen, conductivity, secchi depth, air temperature, cloud cover, and wildlife sightings) and the collection of surface water samples for the analysis of RCAP, total metals, total phosphorous, total suspended solids, E. Coli, total coliforms and chlorophyll-a.

Dissolved oxygen readings outside of the CCME FWAL guideline range were recorded at two (2) sample locations: HWY102-1 and HWY102-2.

Analytical results reported total aluminum concentrations of above the CCME FWAL guideline at all ten (10) sample locations: KL1, KL2, KL3, KL4, KL5, HWY102-1, HWY102-2, LSD, LU and PML1. The analytical results reported total cadmium concentrations of above the CCME FWAL guideline at eight (8) sample locations: KL1, KL3, KL4, KL5, HWY102-2, LSD, LU and PML1. Total iron exceeded the applicable guideline at five (5) locations: KL2, HWY102-2, LSD, LU and PML1. Analytical results showed that total zinc exceeded the CCME FWAL guideline at three (3) locations: KL4, KL5 and LU.



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The laboratory analytical results reported E. Coli concentrations to be within the referenced Health Canada Recreational Water Quality guidelines of 400 MPN/100 mL for all sample locations.

If you have any questions or require anything further, please contact the undersigned at (902) 492-4544.

Yours truly,

**SNC◆LAVALIN ENVIRONMENT**

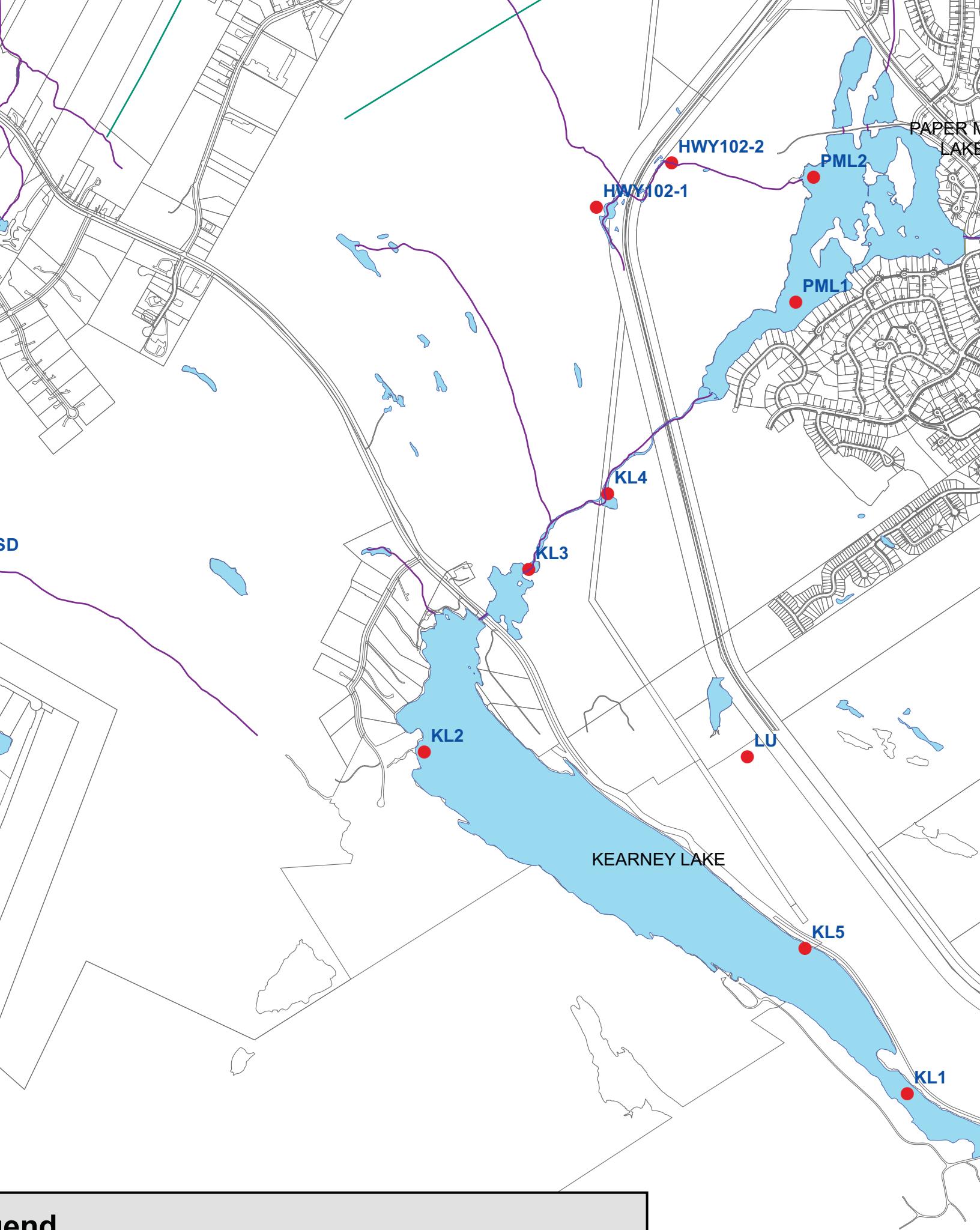
Original Signed

Derek Heath, P.Geo.

Project Manager

DH/ap

510192-0001-T-EN-REP-0003.docx, Revision C01













# **ATTACHMENT 1**

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## **Field Reports**

## FIELD REPORT

<b>Project:</b>	Water Quality Monitoring - Bedford West	<b>Sub-Area(s):</b> 2, 3, 4, 5		
<b>Client:</b>	Halifax Regional Municipality			
<b>Site:</b> Kearney Lake	<b>Location:</b> Kearney Lake Road			
<b>Watercourse:</b> Kearney Lake	<b>Site ID:</b> KL1			
Monitoring Well	<input type="checkbox"/> Pumping Well	<input checked="" type="checkbox"/> Surface Water	<input type="checkbox"/> Spring/Seep	<input type="checkbox"/> Discharge Pipe
<input type="checkbox"/> Other:				
<b>GPS Coordinates:</b>	20T 0445718E, 4948496N (UTM, NAD83)			
<b>SLE Field Personnel:</b>	Allain Thebeau			

### Site Conditions

Weather:	Rainy
Air Temperature:	12°C
Cloud Cover:	Yes
Wildlife Sightings:	N/A
Site Accessibility: Accessible	Off Kearney Lake Road

### Field Parameter Data

	<b>Remarks</b>
Date (d.m.y):	10.October.2012
Time (hh:mm):	09:50
Sample Depth (m):	1.0
pH:	6.32
Dissolved Oxygen (mg/L):	8.72
Secchi Depth (m):	
Water Temperature (degrees Celsius):	15.4
Conductivity ( $\mu\text{s}/\text{cm}$ ):	198.1

### Additional Comments / Notes


## FIELD REPORT

<b>Project:</b>	Water Quality Monitoring - Bedford West	<b>Sub-Area(s):</b> 2, 3, 4, 5		
<b>Client:</b>	Halifax Regional Municipality			
<b>Site:</b> Kearney Lake	<b>Location:</b> Kearney Lake Road			
<b>Watercourse:</b> Kearney Lake	<b>Site ID:</b> KL2			
Monitoring Well	<input type="checkbox"/> Pumping Well	<input checked="" type="checkbox"/> Surface Water	<input type="checkbox"/> Spring/Seep	<input type="checkbox"/> Discharge Pipe
<input type="checkbox"/> Other:				
<b>GPS Coordinates:</b>	20T 0443942E, 4949803N (UTM, NAD83)			
<b>SLE Field Personnel:</b>	Allain Thebeau			

### Site Conditions

Weather:	Rainy
Air Temperature:	12°C
Cloud Cover:	Yes
Wildlife Sightings:	N/A
Site Accessibility: Accessible	Collins Road, through wooded area

### Field Parameter Data

	<b>Remarks</b>
Date (d.m.y):	10.October.2012
Time (hh:mm):	10:20
Sample Depth (m):	1.0
pH:	6.29
Dissolved Oxygen (mg/L):	7.63
Secchi Depth (m):	N/A
Water Temperature (degrees Celsius):	12.3
Conductivity ( $\mu\text{s}/\text{cm}$ ):	61.1

### Additional Comments / Notes


## FIELD REPORT

<b>Project:</b>	Water Quality Monitoring - Bedford West	<b>Sub-Area(s):</b> 2, 3, 4, 5		
<b>Client:</b>	Halifax Regional Municipality			
<b>Site:</b> Kearney Lake Run	<b>Location:</b> Kearney Lake Road			
<b>Watercourse:</b> Kearney Lake Run	<b>Site ID:</b> KL3			
Monitoring Well	<input type="checkbox"/> Pumping Well	<input checked="" type="checkbox"/> Surface Water	<input type="checkbox"/> Spring/Seep	<input type="checkbox"/> Discharge Pipe
<input type="checkbox"/> Other:				
<b>GPS Coordinates:</b>	20T 0444390E, 4950406N (UTM, NAD83)			
<b>SLE Field Personnel:</b>	Allain Thebeau			

### Site Conditions

Weather:	Rainy
Air Temperature:	12°C
Cloud Cover:	Yes
Wildlife Sightings:	N/A
Site Accessibility: Accessible	Via walking path off Kearney Lake Road

### Field Parameter Data

	<b>Remarks</b>
Date (d.m.y):	10.October.2012
Time (hh:mm):	11:20
Sample Depth (m):	1.0
pH:	6.51
Dissolved Oxygen (mg/L):	7.72
Secchi Depth (m):	N/A
Water Temperature (degrees Celsius):	15.6
Conductivity ( $\mu\text{s}/\text{cm}$ ):	177.2

### Additional Comments / Notes


## FIELD REPORT

<b>Project:</b>	Water Quality Monitoring - Bedford West	<b>Sub-Area(s):</b> 2, 3, 4, 5		
<b>Client:</b>	Halifax Regional Municipality			
<b>Site:</b> Kearney Lake Run	<b>Location:</b> Kearney Lake Road			
<b>Watercourse:</b> Kearney Lake Run	<b>Site ID:</b> KL4			
Monitoring Well	<input type="checkbox"/> Pumping Well	<input checked="" type="checkbox"/> Surface Water	<input type="checkbox"/> Spring/Seep	<input type="checkbox"/> Discharge Pipe
<input type="checkbox"/> Other:				
<b>GPS Coordinates:</b>	20T 0444463E, 4950571N (UTM, NAD83)			
<b>SLE Field Personnel:</b>	Allain Thebeau			

### Site Conditions

Weather:	Rainy
Air Temperature:	12°C
Cloud Cover:	Yes
Wildlife Sightings:	N/A
Site Accessibility: Accessible	Via walking path off Kearney Lake Road

### Field Parameter Data

	<b>Remarks</b>
Date (d.m.y):	10.October.2012
Time (hh:mm):	11:40
Sample Depth (m):	1.0
pH:	6.77
Dissolved Oxygen (mg/L):	8.87
Secchi Depth (m):	N/A
Water Temperature (degrees Celsius):	15.7
Conductivity ( $\mu\text{s}/\text{cm}$ ):	185.9

### Additional Comments / Notes


## FIELD REPORT

<b>Project:</b>	Water Quality Monitoring - Bedford West	<b>Sub-Area(s):</b> 9						
<b>Client:</b>	Halifax Regional Municipality							
<b>Site:</b> Kearney Lake	<b>Location:</b> Kearney Lake Road							
<b>Watercourse:</b> Kearney Lake	<b>Site ID:</b> KL5							
Monitoring Well	<input type="checkbox"/>	Pumping Well	<input checked="" type="checkbox"/>	Surface Water	<input type="checkbox"/>	Spring/Seep	<input type="checkbox"/>	Discharge Pipe
Other:	<input type="checkbox"/>							
<b>GPS Coordinates:</b>	20T 4949142E, 445280N (UTM, NAD83)							
<b>SLE Field Personnel:</b>	Allain Thebeau							

### Site Conditions

Weather:	Rainy
Air Temperature:	12°C
Cloud Cover:	Yes
Wildlife Sightings:	N/A
Site Accessibility: Accessible	Along Kearney Lake Road

### Field Parameter Data

	<b>Remarks</b>
Date (d.m.y):	10.October.2012
Time (hh:mm):	12:10
Sample Depth (m):	1.0
pH:	6.72
Dissolved Oxygen (mg/L):	8.16
Secchi Depth (m):	N/A
Water Temperature (degrees Celsius):	16.6
Conductivity ( $\mu\text{s}/\text{cm}$ ):	189.0

### Additional Comments / Notes


## FIELD REPORT

<b>Project:</b>	Water Quality Monitoring - Bedford West	<b>Sub-Area(s):</b> 2, 3, 4, 5		
<b>Client:</b>	Halifax Regional Municipality			
<b>Site:</b> Lake Shore Drive	<b>Location:</b> Kingswood Subdivision			
<b>Watercourse:</b> Marsh @ Lakeshore Dr.	<b>Site ID:</b> LSD			
Monitoring Well	<input type="checkbox"/> Pumping Well	<input checked="" type="checkbox"/> Surface Water	<input type="checkbox"/> Spring/Seep	<input type="checkbox"/> Discharge Pipe
<input type="checkbox"/> Other:				
<b>GPS Coordinates:</b>	20T 0442583E, 4950431N (UTM, NAD83)			
<b>SLE Field Personnel:</b>	Allain Thebeau			

### Site Conditions

Weather:	Sunny with Clouds
Air Temperature:	11°C
Cloud Cover:	Partial
Wildlife Sightings:	N/A
Site Accessibility: Accessible	Via Lakeshore Drive in Kingswood Subdivision

### Field Parameter Data

	<b>Remarks</b>
Date (d.m.y):	11.October.2012
Time (hh:mm):	09:10
Sample Depth (m):	1.0
pH:	6.92
Dissolved Oxygen (mg/L):	7.58
Secchi Depth (m):	N/A
Water Temperature (degrees Celsius):	13.4
Conductivity ( $\mu\text{s}/\text{cm}$ ):	116.7

### Additional Comments / Notes


## FIELD REPORT

<b>Project:</b>	Water Quality Monitoring - Bedford West	<b>Sub-Area(s):</b> 2, 3, 4, 5		
<b>Client:</b>	Halifax Regional Municipality			
<b>Site:</b> Highway 102	<b>Location:</b> Highway 102, south of exit 3			
<b>Watercourse:</b> Marsh area	<b>Site ID:</b> HWY 102-1			
Monitoring Well	<input type="checkbox"/> Pumping Well	<input checked="" type="checkbox"/> Surface Water	<input type="checkbox"/> Spring/Seep	<input type="checkbox"/> Discharge Pipe
<input type="checkbox"/> Other:				
<b>GPS Coordinates:</b>	20T 0444708E, 4951644N (UTM, NAD83)			
<b>SLE Field Personnel:</b>	Allain Thebeau			

### Site Conditions

Weather:	Sunny with Clouds
Air Temperature:	11°C
Cloud Cover:	Partial
Wildlife Sightings:	N/A
Site Accessibility: Accessible	Off Highway 102

### Field Parameter Data

	<b>Remarks</b>
Date (d.m.y):	11.October.2012
Time (hh:mm):	09:50
Sample Depth (m):	1.0
pH:	6.38
Dissolved Oxygen (mg/L):	3.83
Secchi Depth (m):	N/A
Water Temperature (degrees Celsius):	13.6
Conductivity ( $\mu\text{s}/\text{cm}$ ):	155.5

### Additional Comments / Notes

Creosote odour present near water surface.

## FIELD REPORT

<b>Project:</b>	Water Quality Monitoring - Bedford West	<b>Sub-Area(s):</b> 2, 3, 4, 5		
<b>Client:</b>	Halifax Regional Municipality			
<b>Site:</b> Highway 102	<b>Location:</b> HWY 102, south of exit 3			
<b>Watercourse:</b> Marsh area	<b>Site ID:</b> HWY 102-2			
Monitoring Well	<input type="checkbox"/> Pumping Well	<input checked="" type="checkbox"/> Surface Water	<input type="checkbox"/> Spring/Seep	<input type="checkbox"/> Discharge Pipe
<input type="checkbox"/> Other:				
<b>GPS Coordinates:</b>	20T 0444829E, 4951778N (UTM, NAD83)			
<b>SLE Field Personnel:</b>	Allain Thebeau			

### Site Conditions

Weather:	Sunny with Clouds
Air Temperature:	11°C
Cloud Cover:	Partial
Wildlife Sightings:	N/A
Site Accessibility: Accessible	Off Kearney Lake Road

### Field Parameter Data

	<b>Remarks</b>
Date (d.m.y):	11.October.2012
Time (hh:mm):	10:35
Sample Depth (m):	1.0
pH:	6.72
Dissolved Oxygen (mg/L):	3.28
Secchi Depth (m):	N/A
Water Temperature (degrees Celsius):	14.3
Conductivity ( $\mu\text{s}/\text{cm}$ ):	159.1

### Additional Comments / Notes


## FIELD REPORT

<b>Project:</b>	Water Quality Monitoring - Bedford West	<b>Sub-Area(s):</b> 2, 3, 4, 5						
<b>Client:</b>	Halifax Regional Municipality							
<b>Site:</b> Paper Mill Lake	<b>Location:</b> Moirs Mill Subdivision							
<b>Watercourse:</b> Paper Mill Lake	<b>Site ID:</b> PML1							
Monitoring Well	<input type="checkbox"/>	Pumping Well	<input checked="" type="checkbox"/>	Surface Water	<input type="checkbox"/>	Spring/Seep	<input type="checkbox"/>	Discharge Pipe
<input type="checkbox"/>	Other:							
<b>GPS Coordinates:</b>	20T 0445129E, 4951154N (UTM, NAD83)							
<b>SLE Field Personnel:</b>	Allain Thebeau							

### Site Conditions

Weather:	Sunny with Clouds
Air Temperature:	11°C
Cloud Cover:	Partial
Wildlife Sightings:	N/A
Site Accessibility: Accessible	Via French Mast Lane in Moirs Mill Subdivision

### Field Parameter Data

	<b>Remarks</b>
Date (d.m.y):	11.October.2012
Time (hh:mm):	10:55
Sample Depth (m):	1.0
pH:	6.63
Dissolved Oxygen (mg/L):	8.60
Secchi Depth (m):	N/A
Water Temperature (degrees Celsius):	14.9
Conductivity ( $\mu\text{s}/\text{cm}$ ):	186.4

### Additional Comments / Notes


## FIELD REPORT

<b>Project:</b>	Water Quality Monitoring - Bedford West	<b>Sub-Area(s):</b> 2, 3, 4, 5		
<b>Client:</b>	Halifax Regional Municipality			
<b>Site:</b> Paper Mill Lake	<b>Location:</b> Moirs Mill Subdivision			
<b>Watercourse:</b> Paper Mill Lake	<b>Site ID:</b> PML2			
Monitoring Well	<input type="checkbox"/> Pumping Well	<input checked="" type="checkbox"/> Surface Water	<input type="checkbox"/> Spring/Seep	<input type="checkbox"/> Discharge Pipe
<input type="checkbox"/> Other:				
<b>GPS Coordinates:</b>	20T 0445363E, 4951740N (UTM, NAD83)			
<b>SLE Field Personnel:</b>	Allain Thebeau			

### Site Conditions

Weather:	Sunny with Clouds
Air Temperature:	11°C
Cloud Cover:	Partial
Wildlife Sightings:	N/A
Site Accessibility: Accessible	Via Lake Dr., off Hammonds Plains Rd.

### Field Parameter Data

	<b>Remarks</b>
Date (d.m.y):	11.October.2012
Time (hh:mm):	N/A
Sample Depth (m):	N/A
pH:	N/A
Dissolved Oxygen (mg/L):	N/A
Secchi Depth (m):	N/A
Water Temperature (degrees Celsius):	N/A
Conductivity ( $\mu\text{s}/\text{cm}$ ):	N/A

### Additional Comments / Notes

Lake water level has been reduced; shore line is approximately 10 meters from what is normal.
No sample was collected due to unstable ground hazards.

## FIELD REPORT

<b>Project:</b>	Water Quality Monitoring - Bedford West	<b>Sub-Area(s):</b> 9		
<b>Client:</b>	Halifax Regional Municipality			
<b>Site:</b> Larry Uteck Blvd.	<b>Location:</b> Larry Uteck off-ramp			
<b>Watercourse:</b> Pond	<b>Site ID:</b> LU			
Monitoring Well	<input type="checkbox"/> Pumping Well	<input checked="" type="checkbox"/> Surface Water	<input type="checkbox"/> Spring/Seep	<input type="checkbox"/> Discharge Pipe
<input type="checkbox"/> Other:				
<b>GPS Coordinates:</b>	20T 4949816E, 445042N (UTM, NAD83)			
<b>SLE Field Personnel:</b>	Allain Thebeau			

### Site Conditions

Weather:	Sunny with Clouds
Air Temperature:	11°C
Cloud Cover:	Partial
Wildlife Sightings:	N/A
Site Accessibility: Accessible	From Larry Uteck Blvd. off-ramp, Halifax-bound

### Field Parameter Data

	<b>Remarks</b>
Date (d.m.y):	11.October.2012
Time (hh:mm):	10:10
Sample Depth (m):	1.0
pH:	6.78
Dissolved Oxygen (mg/L):	9.04
Secchi Depth (m):	N/A
Water Temperature (degrees Celsius):	14.6°C
Conductivity ( $\mu\text{s}/\text{cm}$ ):	262

### Additional Comments / Notes


# **ATTACHMENT 2**

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## **Site Photographs**

Attachment 2: Site Photographs  
Water Quality Monitoring within Bedford West – October 2012  
Bedford, Nova Scotia

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Photo 1: KL1, Kearney Lake sample location



Photo 2: KL2, Kearney Lake sample location

Attachment 2: Site Photographs  
Water Quality Monitoring within Bedford West – October 2012  
Bedford, Nova Scotia

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Photo 3: KL3, Kearney Lake sample location

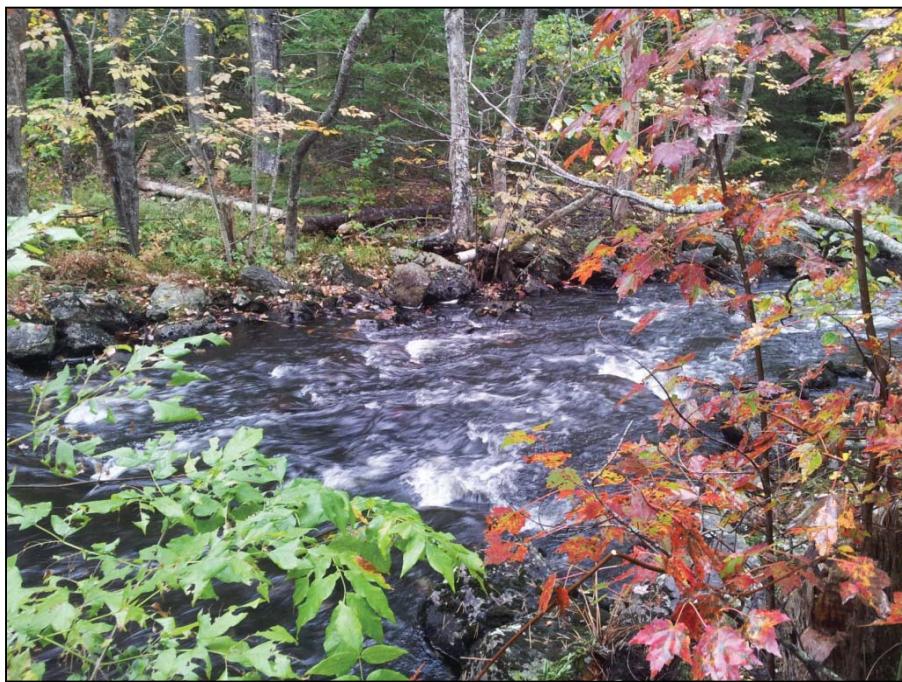


Photo 4: KL4, Kearney Lake sample location

Attachment 2: Site Photographs  
Water Quality Monitoring within Bedford West – October 2012  
Bedford, Nova Scotia

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Photo 5: KL5, Kearney Lake sample location



Photo 6: LSD, Lake Shore Drive sample location

Attachment 2: Site Photographs  
Water Quality Monitoring within Bedford West – October 2012  
Bedford, Nova Scotia

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Photo 7: Hwy102-1 sample location



Photo 8: Hwy102-2 sample location

Attachment 2: Site Photographs  
Water Quality Monitoring within Bedford West – October 2012  
Bedford, Nova Scotia

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Photo 9: PML1, Paper Mill Lake sample location



Photo 10: PML2, Paper Mill Lake sample location (sample not collected)

Attachment 2: Site Photographs  
Water Quality Monitoring within Bedford West – October 2012  
Bedford, Nova Scotia

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Photo 11: LU, Larry Uteck off-ramp sample location

# **ATTACHMENT 3**

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## **Laboratory Certificates of Analysis**

**CLIENT NAME: SNC-LAVALIN  
5657 SPRING GARDEN RD, SUITE 200  
HALIFAX , NS B3J3R4  
(902) 492-4544**

**ATTENTION TO: Derek Heath**

**PROJECT NO: 510192-0001**

**AGAT WORK ORDER: 12X650804**

**WATER ANALYSIS REVIEWED BY: Josette Landry, Organics Supervisor**

**DATE REPORTED: Oct 20, 2012**

**PAGES (INCLUDING COVER): 9**

**VERSION\*: 1**

Should you require any information regarding this analysis please contact your client services representative at (902) 468-8718

**\*NOTES**

**All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.**



**AGAT** Laboratories

**Certificate of Analysis**  
AGAT WORK ORDER: 12X650804  
PROJECT NO: 510192-0001

CLIENT NAME: SNC-LAVALIN

**SNC Lavalin Bedford West Various Inorganics Package**

ATTENTION TO: Derek Heath

DATE SAMPLED: Oct 10, 2012

DATE RECEIVED: Oct 10, 2012

DATE REPORTED: Oct 20, 2012

SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	KL1	KL2	KL3	KL4	KL5
Total Suspended Solids	mg/L	5	<5	<5	<5	<5	<5	<5
Total Kjeldahl Nitrogen as N	mg/L	0.4	<0.4	0.7	<0.4	0.7	1.0	1.0
Chlorophyll A - Acidification Method	ug/L	0.05	1.54	0.07	0.81	0.55	1.09	
Chlorophyll A - Weisbauer Method	ug/L	0.05	2.16	0.12	1.14	0.74	1.41	
E. Coli (MPN)	MPN/100 mL	1	17	3	3	4	6	
Total Coliforms (MPN)	MPN/100 mL	1	1120	>2420	178	921	93	

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Original Signed

Certified By:



**AGAT** Laboratories

**Certificate of Analysis**  
**AGAT WORK ORDER: 12X650804**  
**PROJECT NO: 510192-0001**

CLIENT NAME: SNC-LAVALIN

ATTENTION TO: Derek Heath

**Standard Water Analysis + Metals (Total)**

DATE SAMPLED: Oct 10, 2012				DATE RECEIVED: Oct 10, 2012				DATE REPORTED: Oct 20, 2012				SAMPLE TYPE: Water	
Parameter	Unit	G / S	RDL	KL1	KL2	KL3	KL4	KL5	3799383	3799392	3799404		
pH				6.9	6.5	6.9	6.9	6.9				6.5	
Reactive Silica as SiO <sub>2</sub>	mg/L	0.5	2.2	4.9	2.6	2.6	2.6	2.6				2.4	
Chloride	mg/L	1	50	12	46	46	46	46				48	
Fluoride	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	
Sulphate	mg/L	2	9	2	7	7	7	7				8	
Alkalinity	mg/L	5	<5	8	5	5	<5	<5				<5	
True Color	TCU	5	20	94	31	20	20	20				27	
Turbidity	NTU	0.1	1.3	1	1	1	0.8	0.8				0.9	
Electrical Conductivity	umho/cm	1	196	61	182	183	183	183				189	
Nitrate + Nitrite as N	mg/L	0.05	0.10	<0.05	0.09	0.09	0.09	0.09				0.83	
Nitrate as N	mg/L	0.05	0.10	<0.05	0.09	0.09	0.09	0.09				0.83	
Nitrite as N	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				<0.05	
Ammonia as N	mg/L	0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03				<0.03	
Total Organic Carbon	mg/L	0.5	5.2	10.9	4.9	4.9	4.8	4.8				4.7	
Ortho-Phosphate as P	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				<0.01	
Total Sodium	mg/L	0.1	29.8	9.5	26.37	26.37	25.2	25.2				27.7	
Total Potassium	mg/L	0.1	0.9	0.8	0.9	0.9	0.9	0.9				0.8	
Total Calcium	mg/L	0.1	6.3	2.9	6.0	6.0	5.8	5.8				5.9	
Total Magnesium	mg/L	0.1	1.5	1.0	1.3	1.3	1.2	1.2				1.2	
Total Phosphorous	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				<0.02	
Bicarb. Alkalinity (as CaCO <sub>3</sub> )	mg/L	5	<5	8	5	5	<5	<5				<5	
Carb. Alkalinity (as CaCO <sub>3</sub> )	mg/L	10	<10	<10	<10	<10	<10	<10				<10	
Hydroxide	mg/L	5	<5	<5	<5	<5	<5	<5				<5	
Calculated TDS	mg/L	1	98	34	91	87	87	87				96	
Hardness	mg/L	21.9	11.4	20.3	19.4	19.4	19.4	19.7					
Langelier Index (@20C)	NA	-3.19	-3.68	-3.21	-3.22	-3.22	-3.22	-3.62					
Langelier Index (@ 4C)	NA	-3.51	-4.00	-3.53	-3.54	-3.54	-3.54	-3.94					
Saturation pH (@ 20C)	NA	10.1	10.2	10.1	10.1	10.1	10.1	10.1				10.1	
Saturation pH (@ 4C)	NA	10.4	10.5	10.4	10.4	10.4	10.4	10.4				10.4	
Anion Sum	meL	1.60	0.54	1.55	1.45	1.45	1.45	1.58					
Cation sum	meL	1.79	0.73	1.60	1.53	1.53	1.53	1.64					
% Difference/Ion Balance (NS)	%	5.3	15.1	1.6	2.8	2.8	2.8	2.0					
Total Aluminum	ug/L	5	168	338	153	149	149	154					

Original Signed

**Certified By:**



**AGAT** Laboratories

**Certificate of Analysis**  
AGAT WORK ORDER: 12X650804  
PROJECT NO: 510192-0001

CLIENT NAME: SNC-LAVALIN

**Standard Water Analysis + Metals (Total)**

DATE SAMPLED: Oct 10, 2012		DATE RECEIVED: Oct 10, 2012		DATE REPORTED: Oct 20, 2012		SAMPLE TYPE: Water	
Parameter	Unit	G / S	RDL	KL1	KL2	KL3	KL4
Total Antimony	ug/L	2	<2	<2	<2	<2	<2
Total Arsenic	ug/L	2	<2	<2	<2	<2	<2
Total Barium	ug/L	5	9	10	15	16	15
Total Beryllium	ug/L	2	<2	<2	<2	<2	<2
Total Bismuth	ug/L	2	<2	<2	<2	<2	<2
Total Boron	ug/L	5	33	22	17	16	15
Total Cadmium	ug/L	0.017	0.021	<0.017	0.027	0.027	0.029
Total Chromium	ug/L	1	<1	<1	<1	6	5
Total Cobalt	ug/L	1	<1	<1	<1	<1	<1
Total Copper	ug/L	2	<2	<2	<2	4	<2
Total Iron	ug/L	50	195	813	119	133	120
Total Lead	ug/L	0.5	1.9	1.1	0.7	0.8	0.6
Total Manganese	ug/L	2	68	114	46	38	37
Total Molybdenum	ug/L	2	<2	<2	<2	<2	<2
Total Nickel	ug/L	2	2	<2	<2	5	5
Total Selenium	ug/L	1	<1	1	<1	<1	<1
Total Silver	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Strontium	ug/L	5	32	15	29	28	29
Total Thallium	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Tin	ug/L	2	<2	3	<2	<2	<2
Total Titanium	ug/L	2	3	3	<2	<2	<2
Total Uranium	ug/L	0.1	0.1	<0.1	<0.1	<0.1	<0.1
Total Vanadium	ug/L	2	<2	<2	<2	<2	<2
Total Zinc	ug/L	5	11	7	8	68	64

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Original Signed

**Certified By:**



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 12X650804

PROJECT NO: 510192-0001

CLIENT NAME: SNC-LAVALIN

11 Morris Drive, Unit 122  
Dartmouth, Nova Scotia  
CANADA B3B 1M2  
TEL (902)468-8718  
FAX (902)468-8924  
<http://www.agatlabs.com>

ATTENTION TO: Derek Heath

TP (low) - water

DATE SAMPLED:		DATE RECEIVED:		DATE REPORTED:		SAMPLE TYPE:	
Parameter	Unit	G / S	RDL	KL1	KL2	KL3	KL4
Total Phosphorus	mg/L	0.006	0.007	3799366	3799376	3799383	3799392

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Original Signed

Certified By:



**AGAT**

Laboratories

11 Morris Drive, Unit 122  
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CANADA B3B 1M2  
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<http://www.agatlabs.com>

## Quality Assurance

CLIENT NAME: SNC-LAVALIN

PROJECT NO: 510192-0001

AGAT WORK ORDER: 12X650804

ATTENTION TO: Derek Heath

### Water Analysis

RPT Date: Oct 20, 2012			DUPLICATE			Method Blank	REFERENCE MATERIAL		METHOD BLANK SPIKE			MATRIX SPIKE				
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits		
								Lower	Upper			Lower		Lower	Upper	
<b>Standard Water Analysis + Metals (Total)</b>																
pH	1	3799936	7.1	6.7	5.8%	<	100%	80%	120%		80%	120%		80%	120%	
Reactive Silica as SiO2	1	3796678	10.4	10.6	1.9%	< 0.5	104%	80%	120%		80%	120%		102%	80% 120%	
Chloride	1	3799366	50	50	0.0%	< 1	98%	80%	120%		80%	120%		101%	80% 120%	
Fluoride	1	3799366	<0.1	<0.1	0.0%	< 0.1	98%	80%	120%		80%	120%		95%	80% 120%	
Sulphate	1	3799366	9	10	10.5%	< 2	97%	80%	120%		80%	120%		108%	80% 120%	
Alkalinity	1	3799936	81	80	1.2%	< 5	93%	80%	120%		80%	120%		96%	80% 120%	
True Color	1	3799403	27	26	3.8%	< 5	110%	80%	120%		80%	120%		80%	80% 120%	
Turbidity	1	3799025	10.1	9.9	2.0%	< 0.1	102%	80%	120%		80%	120%		80%	80% 120%	
Electrical Conductivity	1	3799936	180	162	10.5%	< 1	100%	80%	120%		80%	120%		80%	80% 120%	
Nitrate as N	1	3799366	0.10	0.10	0.0%	< 0.05	104%	80%	120%		80%	120%		107%	80% 120%	
Nitrite as N	1	3799366	<0.05	<0.05	0.0%	< 0.05	102%	80%	120%		80%	120%		100%	80% 120%	
Ammonia as N	1	3796841	0.14	0.13	7.4%	< 0.03	99%	80%	120%		80%	120%		103%	80% 120%	
Total Organic Carbon	1	3799936	< 0.5	< 0.5	0.0%	< 0.5	99%	80%	120%		80%	120%		97%	80% 120%	
Ortho-Phosphate as P	1	3796678	<0.01	<0.01	0.0%	< 0.01	99%	80%	120%		80%	120%		96%	80% 120%	
Total Sodium	10132	3799366	29.8	27.7	7.3%	< 0.1	107%	80%	120%	94%	80%	120%		101%	70% 130%	
Total Potassium	10132	3799366	0.9	0.9	0.0%	< 0.1	108%	80%	120%	103%	80%	120%		107%	70% 130%	
Total Calcium	10132	3799366	6.3	6.5	3.1%	< 0.1	108%	80%	120%	106%	80%	120%		88%	70% 130%	
Total Magnesium	10132	3799366	1.5	1.5	0.0%	< 0.1	109%	80%	120%	103%	80%	120%		96%	80% 120%	
Total Phosphorous	10132	3799366	< 0.02	< 0.02	0.0%	< 0.02	104%	80%	120%	86%	80%	120%		100%	70% 130%	
Total Aluminum	10132	3799366	168	182	8.0%	< 5	116%	80%	120%	103%	80%	120%		110%	70% 130%	
Total Antimony	10132	3799366	< 2	< 2	0.0%	< 2	102%	80%	120%	107%	80%	120%		100%	70% 130%	
Total Arsenic	10132	3799366	< 2	< 2	0.0%	< 2	100%	80%	120%	95%	80%	120%		91%	70% 130%	
Total Barium	10132	3799366	9	8	11.8%	< 5	99%	80%	120%	102%	80%	120%		100%	70% 130%	
Total Beryllium	10132	3799366	< 2	< 2	0.0%	< 2	103%	80%	120%	94%	80%	120%		113%	70% 130%	
Total Bismuth	10132	3799366	< 2	< 2	0.0%	< 2	116%	80%	120%	86%	80%	120%		110%	70% 130%	
Total Boron	10132	3799366	33	31	6.3%	< 5	99%	80%	120%	86%	80%	120%		95%	70% 130%	
Total Cadmium	10132	3799366	0.021	0.024	13.3%	< 0.017	101%	80%	120%	93%	80%	120%		100%	70% 130%	
Total Chromium	10132	3799366	< 1	< 1	0.0%	< 1	113%	80%	120%	102%	80%	120%		99%	70% 130%	
Total Cobalt	10132	3799366	< 1	< 1	0.0%	< 1	118%	80%	120%	107%	80%	120%		106%	70% 130%	
Total Copper	10132	3799366	< 2	< 2	0.0%	< 2	117%	80%	120%	107%	80%	120%		102%	70% 130%	
Total Iron	10132	3799366	195	196	0.5%	< 50	108%	80%	120%	104%	80%	120%		101%	70% 130%	
Total Lead	10132	3799366	1.9	1.9	0.0%	< 0.5	111%	80%	120%	107%	80%	120%		89%	70% 130%	
Total Manganese	10132	3799366	68	68	0.0%	< 2	115%	80%	120%	111%	80%	120%		88%	70% 130%	
Total Molybdenum	10132	3799366	< 2	< 2	0.0%	< 2	104%	80%	120%	96%	80%	120%		103%	70% 130%	
Total Nickel	10132	3799366	2	2	0.0%	< 2	115%	80%	120%	104%	80%	120%		106%	70% 130%	
Total Selenium	10132	3799366	< 1	< 1	0.0%	< 1	92%	80%	120%	88%	80%	120%		76%	70% 130%	
Total Silver	10132	3799366	< 0.1	< 0.1	0.0%	< 0.1	99%	80%	120%	94%	80%	120%		94%	70% 130%	
Total Strontium	10132	3799366	32	33	3.1%	< 5	98%	80%	120%	98%	80%	120%		92%	70% 130%	
Total Thallium	10132	3799366	< 0.1	< 0.1	0.0%	< 0.1	104%	80%	120%	102%	80%	120%		99%	70% 130%	

#### AGAT QUALITY ASSURANCE REPORT (V1)

Page 6 of 9

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from [www.cala.ca](http://www.cala.ca) and/or [www.scc.ca](http://www.scc.ca). The tests in this report may not necessarily be included in the scope of accreditation.

Results relate only to the items tested and to all the items tested



## Quality Assurance

**CLIENT NAME: SNC-LAVALIN**

**PROJECT NO: 510192-0001**

**AGAT WORK ORDER: 12X650804**

**ATTENTION TO: Derek Heath**

### Water Analysis (Continued)

RPT Date: Oct 20, 2012			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
			Lower	Upper	Lower			Lower	Upper		Lower	Upper		Lower	Upper
Total Tin	10132	3799366	< 2	< 2	0.0%	< 2	99%	80%	120%	97%	80%	120%	100%	70%	130%
Total Titanium	10132	3799366	3	3	0.0%	< 2	97%	80%	120%	110%	80%	120%	101%	70%	130%
Total Uranium	10132	3799366	0.1	0.1	0.0%	< 0.1	107%	80%	120%	105%	80%	120%	103%	70%	130%
Total Vanadium	10132	3799366	< 2	< 2	0.0%	< 2	114%	80%	120%	110%	80%	120%	109%	70%	130%
Total Zinc	10132	3799366	11	10	9.5%	< 5	109%	80%	120%	111%	80%	120%	106%	70%	130%
<b>SNC Lavalin Bedford West Various Inorganics Package</b>															
Total Suspended Solids	1	3796255	< 5	< 5	0.0%	< 5	103%	80%	120%		120%	120%	101%	80%	120%
Total Kjeldahl Nitrogen as N	1	3799366	<0.4	<0.4	0.0%	< 0.4	88%	80%	120%		80%	120%	84%	80%	120%
E. Coli (MPN)	1	3799404	6	5	18.2%	< 1		0%	0%		0%	0%		0%	0%
Total Coliforms (MPN)	1	3799404	91	93	2.2%	< 1		0%	0%		0%	0%		0%	0%
<b>TP (low) - water</b>															
Total Phosphorus	1	3799366	0.007	0.007	0.0%	< 0.006	90%	90%	110%	97%	90%	110%	96%	80%	120%
<b>Standard Water Analysis + Metals (Total)</b>															
pH	1	3802355	6.9	6.9	0.0%	<	101%	80%	120%		80%	120%		80%	120%
Chloride	1	3799404	48	48	0.0%	< 1	98%	80%	120%		80%	120%	101%	80%	120%
Fluoride	1	3799404	<0.1	<0.1	0.0%	< 0.1	101%	80%	120%		80%	120%	99%	80%	120%
Sulphate	1	3799404	8	8	0.0%	< 2	80%	80%	120%		80%	120%	105%	80%	120%
Alkalinity	1	3802355	<5	<5	0.0%	< 5	88%	80%	120%		80%	120%	98%	80%	120%
Turbidity	1	3799925	49.5	49.3	0.4%	< 0.1	92%	80%	120%		80%	120%		80%	120%
Electrical Conductivity	1	3802355	119	119	0.0%	< 1	98%	80%	120%		80%	120%		80%	120%
Nitrate as N	1	3799404	0.83	0.83	0.0%	< 0.05	101%	80%	120%		80%	120%	104%	80%	120%
Nitrite as N	1	3799404	<0.05	<0.05	0.0%	< 0.05	98%	80%	120%		80%	120%	95%	80%	120%
<b>SNC Lavalin Bedford West Various Inorganics Package</b>															
Total Suspended Solids	1	3796647	5	< 5		< 5	98%	80%	120%		120%	120%	97%	80%	120%

Original Signed

Certified By: \_\_\_\_\_

## Method Summary

**CLIENT NAME:** SNC-LAVALIN

**PROJECT NO:** 510192-0001

**AGAT WORK ORDER:** 12X650804

**ATTENTION TO:** Derek Heath

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
<b>Water Analysis</b>			
Total Suspended Solids	INOR-121-6024, 6025	SM 2540C, D	GRAVIMETRIC
Total Kjeldahl Nitrogen as N	INOR-121-6020	SM 4500 NORG D	COLORIMETER
Chlorophyll A - Acidification Method	Subcontracted	Subcontracted	
Chlorophyll A - Welschmeyer Method	Subcontracted	Subcontracted	ICP-MS
E. Coli (MPN)	MIC-121-7000	Based on SM 9223B	INCUBATOR
Total Coliforms (MPN)	MIC-121-7000	Based on SM 9223B	INCUBATOR
pH	INOR-121-6001	SM 4500 H+B	PC-TITRATE
Reactive Silica as SiO2	INORG-121-6028	SM 4110 B	COLORIMETER
Chloride	INORG-121-6005	SM 4110 B	IC
Fluoride	INORG-121-6005	SM 4110 B	IC
Sulphate	INORG-121-6005	SM 4110 B	IC
Alkalinity	INORG-121-6001	SM 2320 B	PC-TITRATE
True Color	INORG-121-6014	EPA 110.2	NEPHELOMETER
Turbidity	INORG-121-6022	SM 2130 B	NEPHELOMETER
Electrical Conductivity	INOR-121-6001	SM 2510 B	PC-TITRATE
Nitrate + Nitrite as N	INORG-121-6005	SM 4110 B	CALCULATION
Nitrate as N	INORG-121-6005	SM 4110 B	IC
Nitrite as N	INORG-121-6005	SM 4110 B	IC
Ammonia as N	INORG-121-6003	SM 4500-NH3 G	COLORIMETER
Total Organic Carbon	INORG-121-6026	SM 5310 B	TOC ANALYZER
Ortho-Phosphate as P	INORG-121-6005	SM 4110 B	COLORIMETER
Total Sodium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Potassium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Calcium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Magnesium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Phosphorous	MET-121-6104 & MET-121-6105	SM 3125	ICP/MS
Bicarb. Alkalinity (as CaCO3)	INORG-121-6001	SM 2320 B	PC-TITRATE
Carb. Alkalinity (as CaCO3)	INORG-121-6001	SM 2320 B	PC-TITRATE
Hydroxide	INORG-121-6001	SM 2320 B	PC-TITRATE
Calculated TDS		SM 1030E	CALCULATION
Hardness		SM 2340B	CALCULATION
Langelier Index (@20C)			CALCULATION
Langelier Index (@ 4C)			CALCULATION
Saturation pH (@ 20C)			CALCULATION
Saturation pH (@ 4C)			CALCULATION
Anion Sum		SM 1030E	CALCULATION
Cation sum		SM 1030E	CALCULATION
% Difference/ Ion Balance (NS)		SM 1030E	CALCULATION
Total Aluminum	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Antimony	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Arsenic	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Barium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS

## Method Summary

**CLIENT NAME: SNC-LAVALIN**
**PROJECT NO: 510192-0001**
**AGAT WORK ORDER: 12X650804**
**ATTENTION TO: Derek Heath**

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Total Beryllium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Bismuth	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Boron	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Cadmium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Chromium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Cobalt	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Copper	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Iron	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Lead	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Manganese	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Molybdenum	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Nickel	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Selenium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Silver	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Strontium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Thallium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Tin	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Titanium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Uranium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Vanadium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Zinc	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Phosphorus	INOR-93-1022	SM 4500-P B & E	SPECTROPHOTOMETER



## Chain of Custody Record

### Report To

Company:	<u>5VC Lavalle</u>
Contact:	<u>Derek Heath</u>
Address:	<u>5657 50th Grade</u>
Phone:	<u>419-215414</u>
PO#:	<u></u>
AGAT Quotation:	<u></u>
Client Project Name/#:	<u>510192 - 0001</u>
Same:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Company:	
Contact:	
Address:	
Email:	
Phone:	
PO#/Credit Card #:	

### Report Information

1. Name:	<u>Derek Heath</u>			
2. Email:	<u>Derek.Heath@5vc.us</u>			
PIRI:	<input type="checkbox"/>			
Tier 1:	<input type="checkbox"/> Res <input type="checkbox"/> Pot <input type="checkbox"/> Coarse			
Tier 2:	<input type="checkbox"/> Com <input type="checkbox"/> N/Pot <input type="checkbox"/> Fine			
Gas:	<input type="checkbox"/> Gas <input type="checkbox"/> Lube			
CCME:	<input type="checkbox"/> CDWO <input type="checkbox"/> NSDFOSP			
Industrial:	<input type="checkbox"/>			
Commercial:	<input type="checkbox"/> HRM 101			
Res./Park:	<input type="checkbox"/> Storm Water			
Agricultural:	<input type="checkbox"/> Waste Water			
FWAL:	<input type="checkbox"/>			
Sediment:	<input type="checkbox"/> Other _____			
Comments - Site/Sample Info.				
Sample - Site/Sample Info.				
Sample Identification	Date/Time Sampled	Sample Matrix	# Containers	Comments - Site/Sample Info.
KL1	Oct 10/12 9:50	SW		Sample Containment
KL2	10:20	SW		
KL3	11:20	SW		
KL4	11:38	SW		
KL5	12:10	SW		

Ph.: 902.468.8718 • Fax: 902.468.8924

Unit 122 • 11 Morris Drive  
Dartmouth, Nova Scotia

B3B 1M2

Poor (see notes)

Good

Arrival Condition:

Arrival Temperature:

65°C

AGAT Job Number:  
10x 650804

Notes:

Report Format	<input type="checkbox"/> Single Sample per page
	<input type="checkbox"/> Multiple Samples per page
	<input type="checkbox"/> Excel Format Included
Turnaround Time Required (TAT)	<input checked="" type="checkbox"/> 5 to 7 working days
Regular TAT	<input type="checkbox"/> 1 day
Rush TAT	<input type="checkbox"/> 2 days
	<input type="checkbox"/> 3 - 4 days
Date Required:	

Regulatory Requirements (Check):	<input type="checkbox"/> List Guidelines on Report <input type="checkbox"/> Do not List Guidelines on Report
Field Filtered/Preserved	<input type="checkbox"/> TSS <input type="checkbox"/> TDS <input type="checkbox"/> VSS
Mercury	<input type="checkbox"/> BOD <input type="checkbox"/> COD
Standard Water Analysis + MS	<input type="checkbox"/> Metals: Total Diss Available
Field Filtered/Preserved	<input type="checkbox"/> Mercury
Metals: Total Diss Available	<input type="checkbox"/> Standard Water Analysis + MS
Phenolics	<input type="checkbox"/> TKN
Total Phosphorus	<input type="checkbox"/> TDP/BTEX
Phenols	<input type="checkbox"/> PCB
HAA	<input type="checkbox"/> VOC
Total Coliforms + E.Coli (MPN)	<input type="checkbox"/> TECB
fecal Coliform (MF)	<input type="checkbox"/> PCB
other	<input checked="" type="checkbox"/> B16/Fecal Coliform
Hazardous (Y/N)	<input type="checkbox"/> 8

Sample Received by (print name): <u>Original Signed</u>	Date: <u>Oct 10/12</u>	Special Instructions
Sample Received by (sign):	Time:	Page _____ of _____
Samples Received by (print name): <u>Original Signed</u>	Date: <u>Oct 10/12</u>	Page _____ of _____
Samples Received by (sign):	Time:	Page _____ of _____
NO. <b>033077</b>		

CLIENT NAME: SNC-LAVALIN  
5657 SPRING GARDEN RD, SUITE 200  
HALIFAX , NS B3J3R4  
(902) 492-4544

ATTENTION TO: Derek Heath

PROJECT NO: 510192-0001

AGAT WORK ORDER: 12X651214

WATER ANALYSIS REVIEWED BY: Josette Landry, Organics Supervisor

DATE REPORTED: Oct 23, 2012

PAGES (INCLUDING COVER): 8

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (902) 468-8718

\*NOTES

All samples will be disposed of within 30 days following analysis. Please contact the lab if you require additional sample storage time.



**AGAT** Laboratories

## Certificate of Analysis

AGAT WORK ORDER: 12X651214  
PROJECT NO: 510192-0001

CLIENT NAME: SNC-LAVALIN

SNC Lavalin Bedford West Package						
DATE SAMPLED: Oct 11, 2012			DATE RECEIVED: Oct 11, 2012			SAMPLE TYPE: Water
Parameter	Unit	G / S	LSD	HWY102-1	LU	HWY102-2
Total Suspended Solids	mg/L	5	19	< 5	< 5	< 5
Total Kjeldahl Nitrogen as N	mg/L	0.4	0.5	0.6	0.7	0.5
Chlorophyll A - Acidification Method	ug/L	0.05	0.13	0.81	1.80	0.33
Chlorophyll A - Weisbauer Method	ug/L	0.05	0.22	1.05	2.15	0.50
E. Coli (MPN)	MPN/100 mL	1	10	145	19	50
Total Coliforms (MPN)	MPN/100 mL	1	>2420	>2420	>2420	>2420

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

11 Morris Drive, Unit 122  
Dartmouth, Nova Scotia  
CANADA B3B 1M2  
TEL (902)468-8718  
FAX (902)468-8924  
<http://www.agatlabs.com>

Original Signed

Certified By:



**Certificate of Analysis**  
**AGAT** Laboratories  
 AGAT WORK ORDER: 12X651214  
 PROJECT NO: 510192-0001

CLIENT NAME: SNC-LAVALIN

Standard Water Analysis + Metals (Total)

DATE SAMPLED: Oct 11, 2012

DATE RECEIVED: Oct 11, 2012

SAMPLE TYPE: Water

Parameter	Unit	G / S	RDL	LSD	HWY102-1	LU	HWY102-2	PML1
pH				6.9	6.8	7.2	6.8	6.8
Reactive Silica as SiO2	mg/L	0.5	4.9	5.1	6.3	5.8	3.2	
Chloride	mg/L	1	23	28	52	45	45	
Fluoride	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L	2	5	9	23	10	10	
Alkalinity	mg/L	5	11	15	14	<5	<5	
True Color	TCU	5	40	40	18	70	29	
Turbidity	NTU	0.1	2.1	0.9	2.3	2	1	
Electrical Conductivity	umho/cm	1	110	143	255	179	179	
Nitrate + Nitrite as N	mg/L	0.05	<0.05	0.43	1.89	0.14	0.14	
Nitrate as N	mg/L	0.05	<0.05	0.43	1.89	0.14	0.14	
Nitrite as N	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia as N	mg/L	0.03	<0.03	0.04	<0.03	<0.03	<0.03	<0.03
Total Organic Carbon	mg/L	0.5	7.7	7.0	4.8	11.2	5.3	
Ortho-Phosphate as P	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Sodium	mg/L	0.1	15.2	14.6	32.3	20.4	29.8	
Total Potassium	mg/L	0.1	1.3	1.5	2.5	1.6	1.0	
Total Calcium	mg/L	0.1	5.1	7.5	14.5	5.6	6.0	
Total Magnesium	mg/L	0.1	1.4	1.4	2.2	1.2	1.1	
Total Phosphorous	mg/L	0.02	0.03	0.02	0.03	0.03	0.03	
Bicarb. Alkalinity (as CaCO3)	mg/L	5	11	15	14	<5	<5	
Carb. Alkalinity (as CaCO3)	mg/L	10	<10	<10	<10	<10	<10	
Hydroxide	mg/L	5	<5	<5	<5	<5	<5	
Calculated TDS	mg/L	1	58	73	144	86	95	
Hardness	mg/L	18.5	24.5	45.3	18.9	19.5		
Langelier Index (@20C)	NA	-2.91	-2.72	-2.10	-3.34	-3.31		
Langelier Index (@ 4C)	NA	-3.23	-3.04	-2.42	-3.66	-3.63		
Saturation pH (@ 20C)	NA	9.81	9.52	9.30	10.1	10.1		
Saturation pH (@ 4C)	NA	10.1	9.84	9.62	10.5	10.4		
Anion Sum	meL	0.97	1.31	2.36	1.49	1.49		
Cation sum	meL	1.10	1.19	2.43	1.40	1.78		
% Difference/ Ion Balance (NS)	%	6.1	4.6	1.4	3.1	9.0		
Total Aluminum	ug/L	5	186	146	252	259	306	

Original Signed

Certified By:



**AGAT** Laboratories

# Certificate of Analysis

AGAT WORK ORDER: 12X651214

PROJECT NO: 510192-0001

CLIENT NAME: SNC-LAVALIN

ATTENTION TO: Derek Heath

## Standard Water Analysis + Metals (Total)

DATE SAMPLED: Oct 11, 2012		DATE RECEIVED: Oct 11, 2012				DATE REPORTED: Oct 23, 2012				SAMPLE TYPE: Water	
Parameter	Unit	G / S	RDL	LSD	HWY102-1	LU	HWY102-2	3803606	PML1	3803620	
Total Antimony	ug/L	2	<2	<2	<2	<2	<2	<2	<2	<2	
Total Arsenic	ug/L	2	<2	<2	<2	<2	<2	<2	<2	<2	
Total Barium	ug/L	5	12	42	116	33	19				
Total Beryllium	ug/L	2	<2	<2	<2	<2	<2	<2	<2	<2	
Total Bismuth	ug/L	2	<2	<2	<2	<2	<2	<2	<2	<2	
Total Boron	ug/L	5	16	13	22	15	9				
Total Cadmium	ug/L	0.017	0.023	<0.017	0.168	0.032	0.066				
Total Chromium	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1	
Total Cobalt	ug/L	1	<1	<1	<1	<1	<1	1	1	2	
Total Copper	ug/L	2	2	3	16	3	3				
Total Iron	ug/L	50	312	255	500	1550	1550				
Total Lead	ug/L	0.5	<0.5	<0.5	1.0	2.1	2.1	0.9			
Total Manganese	ug/L	2	67	28	120	207	207				
Total Molybdenum	ug/L	2	<2	<2	<2	<2	<2	<2	<2	<2	
Total Nickel	ug/L	2	<2	<2	<2	<2	<2				
Total Selenium	ug/L	1	<1	<1	<1	<1	<1	<1	<1	<1	
Total Silver	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Total Strontium	ug/L	5	22	36	60	31	30				
Total Thallium	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Total Tin	ug/L	2	<2	<2	<2	<2	<2	<2	<2	<2	
Total Titanium	ug/L	2	4	<2	7	4	4				
Total Uranium	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Total Vanadium	ug/L	2	<2	<2	<2	<2	<2	<2	<2	<2	
Total Zinc	ug/L	5	7	<5	39	12	13				

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

Original Signed

Certified By:





## Quality Assurance

CLIENT NAME: SNC-LAVALIN

PROJECT NO: 510192-0001

AGAT WORK ORDER: 12X651214

ATTENTION TO: Derek Heath

### Water Analysis (Continued)

RPT Date: Oct 23, 2012			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE			MATRIX SPIKE			
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits		
								Lower	Upper		Lower	Upper		Lower	Upper	
Total Tin	10122	3802871	< 2	< 2	0.0%	< 2	98%	80%	120%	98%	80%	120%	103%	70%	130%	
Total Titanium	10122	3802871	3	3	0.0%	< 2	102%	80%	120%	106%	80%	120%	88%	70%	130%	
Total Uranium	10122	3802871	< 0.1	< 0.1	0.0%	< 0.1	104%	80%	120%	94%	80%	120%	92%	70%	130%	
Total Vanadium	10122	3802871	< 2	< 2	0.0%	< 2	109%	80%	120%	104%	80%	120%	91%	70%	130%	
Total Zinc	10122	3802871	51	49	4.0%	< 5	111%	80%	120%	116%	80%	120%	96%	70%	130%	
SNC Lavalin Bedford West Package																
Total Suspended Solids	1	3805997	6	< 5		< 5	101%	80%	120%		120%	120%	111%	80%	120%	
Total Kjeldahl Nitrogen as N	1	3803571	0.5	0.6	18.2%	< 0.4	87%	80%	120%		80%	120%	94%	80%	120%	
E. Coli (MPN)	1	3803620	16	20	22.2%	< 1		0%	0%		0%	0%		0%	0%	
Total Coliforms (MPN)	1	3803620	1733	2420	33.1%	< 1		0%	0%		0%	0%		0%	0%	

Original Signed

Certified By: \_\_\_\_\_

## Method Summary

CLIENT NAME: SNC-LAVALIN

PROJECT NO: 510192-0001

AGAT WORK ORDER: 12X651214

ATTENTION TO: Derek Heath

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
<b>Water Analysis</b>			
Total Suspended Solids	INOR-121-6024, 6025	SM 2540C, D	GRAVIMETRIC
Total Kjeldahl Nitrogen as N	INOR-121-6020	SM 4500 NORG D	COLORIMETER
Chlorophyll A - Acidification Method	Subcontracted	Subcontracted	
Chlorophyll A - Welschmeyer Method	Subcontracted	Subcontracted	ICP-MS
E. Coli (MPN)	MIC-121-7000	Based on SM 9223B	INCUBATOR
Total Coliforms (MPN)	MIC-121-7000	Based on SM 9223B	INCUBATOR
pH	INOR-121-6001	SM 4500 H+B	PC-TITRATE
Reactive Silica as SiO2	INORG-121-6028	SM 4110 B	COLORIMETER
Chloride	INORG-121-6005	SM 4110 B	IC
Fluoride	INORG-121-6005	SM 4110 B	IC
Sulphate	INORG-121-6005	SM 4110 B	IC
Alkalinity	INORG-121-6001	SM 2320 B	PC-TITRATE
True Color	INORG-121-6014	EPA 110.2	NEPHELOMETER
Turbidity	INORG-121-6022	SM 2130 B	NEPHELOMETER
Electrical Conductivity	INOR-121-6001	SM 2510 B	PC-TITRATE
Nitrate + Nitrite as N	INORG-121-6005	SM 4110 B	CALCULATION
Nitrate as N	INORG-121-6005	SM 4110 B	IC
Nitrite as N	INORG-121-6005	SM 4110 B	IC
Ammonia as N	INORG-121-6003	SM 4500-NH3 G	COLORIMETER
Total Organic Carbon	INORG-121-6026	SM 5310 B	TOC ANALYZER
Ortho-Phosphate as P	INORG-121-6005	SM 4110 B	COLORIMETER
Total Sodium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Potassium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Calcium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Magnesium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Phosphorous	MET-121-6104 & MET-121-6105	SM 3125	ICP/MS
Bicarb. Alkalinity (as CaCO3)	INORG-121-6001	SM 2320 B	PC-TITRATE
Carb. Alkalinity (as CaCO3)	INORG-121-6001	SM 2320 B	PC-TITRATE
Hydroxide	INORG-121-6001	SM 2320 B	PC-TITRATE
Calculated TDS		SM 1030E	CALCULATION
Hardness		SM 2340B	CALCULATION
Langelier Index (@20C)			CALCULATION
Langelier Index (@ 4C)			CALCULATION
Saturation pH (@ 20C)			CALCULATION
Saturation pH (@ 4C)			CALCULATION
Anion Sum		SM 1030E	CALCULATION
Cation sum		SM 1030E	CALCULATION
% Difference/ Ion Balance (NS)		SM 1030E	CALCULATION
Total Aluminum	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Antimony	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Arsenic	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Barium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS

## Method Summary

CLIENT NAME: SNC-LAVALIN

PROJECT NO: 510192-0001

AGAT WORK ORDER: 12X651214

ATTENTION TO: Derek Heath

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Total Beryllium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Bismuth	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Boron	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Cadmium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Chromium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Cobalt	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Copper	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Iron	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Lead	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Manganese	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Molybdenum	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Nickel	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Selenium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Silver	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Strontium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Thallium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Tin	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Titanium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Uranium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Vanadium	MET121-6104 & MET-121-6105	SM 3125	ICP/MS
Total Zinc	MET121-6104 & MET-121-6105	SM 3125	ICP/MS



## Chain of Custody Record

Report To	
Company:	SNC-Lavalin
Contact:	Derek Heath
Address:	Halifax
Phone:	492-4544
PO#:	
Client Project Name/#:	510192-0001
Invoice To	
Company:	
Contact:	
Address:	
Email:	
Phone:	
PO#/Credit Card #:	

Ph.: 902.468.8718 • Fax: 902.468.8924

Unit 122 • 11 Morris Drive  
Dartmouth, Nova Scotia  
B3B 1M2

[www.agatlabs.com](http://www.agatlabs.com) • [www.agatlabs.com](http://www.agatlabs.com)

Just taken

Notes:

## Laboratory Use Only

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Poor (see notes)
Arrival Condition:	16°C
Arrival Temperature:	16°C
AGAT Job Number:	12X65/214

## Report Format

Single Sample per page	<input type="checkbox"/>
Multiple Samples per page	<input type="checkbox"/>
Excel Format Included	<input checked="" type="checkbox"/>

## Regulatory Requirements (Check):

<input type="checkbox"/> List Guidelines on Report	<input type="checkbox"/> Do not List Guidelines on Report
<input type="checkbox"/> PIRI	<input type="checkbox"/> Res
<input type="checkbox"/> Tier 1	<input type="checkbox"/> Coarse
<input type="checkbox"/> Tier 2	<input type="checkbox"/> N/Pot
<input type="checkbox"/> Gas	<input type="checkbox"/> Fine
<input type="checkbox"/> Gas	<input type="checkbox"/> Lubricant
<input type="checkbox"/> ccME	<input type="checkbox"/> CDWQ
<input type="checkbox"/> Industrial	<input type="checkbox"/> NSDFOSP
<input type="checkbox"/> Commercial	<input type="checkbox"/> HRM 101
<input type="checkbox"/> Res./Park	<input type="checkbox"/> Storm Water
<input type="checkbox"/> Agricultural	<input type="checkbox"/> Waste Water
<input type="checkbox"/> FWAL	
<input type="checkbox"/> Sediment	<input type="checkbox"/> Other _____
Field Filtered/Preserved	
Standard Water Analysis + MS	
Mercury	
<input type="checkbox"/> BOD <input type="checkbox"/> CBOD	
<input type="checkbox"/> TKN	
<input type="checkbox"/> TSS <input type="checkbox"/> TDS <input type="checkbox"/> VSS	
<input type="checkbox"/> pH	
<input type="checkbox"/> VOC	
<input type="checkbox"/> HAA	
<input type="checkbox"/> PAH	
<input type="checkbox"/> PCB	
<input type="checkbox"/> Other _____	
Ecocertification (MF)	
Total Coliforms + E.Coli (Presence/Absence)	
TCME-CWS TPH/BTEX	
Tier 1: TPH/BTEX (PbR1)	
Tier 2: TPH/BTEX Fractionation	
Phenols	
Total Phosphorus	
<input type="checkbox"/> TKN	
<input type="checkbox"/> TSS <input type="checkbox"/> TDS <input type="checkbox"/> VSS	
<input type="checkbox"/> pH	
<input type="checkbox"/> VOC	
<input type="checkbox"/> HAA	
<input type="checkbox"/> PAH	
<input type="checkbox"/> PCB	
<input type="checkbox"/> Other _____	
Hazardous (Y/N)	

Original Signed

11.11.2012

Original Signed \_\_\_\_\_  
of \_\_\_\_\_  
Date \_\_\_\_\_ Time \_\_\_\_\_

Samples Received by (sign):

Date revised: April 10, 2012

No: 033075

Samples Received by (sign):

Date \_\_\_\_\_ Time \_\_\_\_\_

Page \_\_\_\_\_ of \_\_\_\_\_