December 3, 2020 FOI No: 2020-47

VIA E-MAIL – Redacted

Redacted

Dear Redacted

Re: Request for Records
Freedom of Information and Protection of Privacy Act

The City of White Rock has reviewed your request for access to the following records pursuant to the Freedom of Information and Protection of Privacy Act (the "Act"):

- *a copy of the Demolition Permit, Development Permit, and the Building permits and any extensions on the permits issued to the developer of the Solterra at 1350 Johnston Road*
- *a copy of the report of the Soil and Environmental Testing done at this site*

Access to these records is available. Please find copies attached.

Please contact our office if you have any questions or concerns.

Sincerely,

Ken Overton
Manager, Property, Risk Management, and FOI
604-541-2104

Att.

Corporate Administration
P: 604.541.2212 | F: 604.541.9348
City of White Rock
15322 Buena Vista Avenue, White Rock BC, Canada V4B 1Y6

If you believe that the City of White Rock has been unreasonable in its handling of your request, you may ask the Information and Privacy Commissioner to review our response. You have 30 days from receipt of this notice to request a review by writing to:

Office of the Information and Privacy Commissioner
3rd Floor, 756 Fort Street
Victoria BC V8W 1H2

Should you decide to request a review, please provide the Commissioner's office with:

1. your name, address and telephone number;
2. a copy of this letter;
3. a copy of your original request sent to the City of White Rock; and
4. the reasons or grounds upon which you are requesting the review.

WHITE ROCK

City by the Sea!

CITY OF WHITE ROCK — PLANNING & DEVELOPMENT SERVICES

Application for Demolition Permit

Planning and Development Services
15322 Buena Vista Ave., White Rock, B.C. V4B 1Y6
Phone: 604 541 2136 Fax: 604 541 2153
Website: www.whiterockcity.ca

Folder # BP020362

Access #

PROPERTY INFORMATION

Address OF DEMOLITION: 1350 Johnston Road, White Rock, BC V4B 3Z2 Roll Number: 0002914.000

Owner: BAYSIDE SYSTEMS SUPPLY LTD., INC. NO. BC0453849

Agent: Luca Tinaburri Phone/Email: Phone: 604-830-3756 Email: Luca@solterradev.com

CONTRACTOR INFORMATION

Demolition Contractor: D&S Bulldozing Ltd. Phone: 604-941-6494

Business Licence #: 13879

Security Deposit

Name of Person/Company who paid deposit: Solterra (Monaco) Limited Partnership formerly known as: Solterra (White Rock) Limited Partnership

Note: All returnable security deposits are issued to the name of the person or company whose name is on the original cheque when payment was made. (as above). It is the responsibility of this person(s) to request any potentially refundable deposits with the Engineering Department **AFTER the passed Demolition Final.**

FEES

BONDRD	**Road and ROW Security Deposit**	**$5,000**	**$ 5,000.00**
DEMOPMT	**Demolition SFD/Duplex:**	**$1,071**	**$**
	Demolition Commercial/Multi Family	**$1,275**	**$ 1,275.00**
	Demolition Accessory Building	**$82.00**	**$ 82.00**
	Moving Building	**$204.00**	**$**
	Underground Storage Tank Removal	**$215.00**	**$**
SANITCF	**Sanitary Sewer Connection Fee**	**$4,000.00**	**$ 4,000.00**
STORMCF	**Storm Sewer Connection Fee**	**$4,000.00**	**$ 4,000.00**
		Total:	**$ 14,357.00**

Owner(s)/Authorized Agent's Signature	Application Date: Nov 13, 2018
Building Inspector/Plan Examiner Signature	Issued Date: AUG 12 2019

PLEASE NOTE:

- Refer to Part 8 of the **BRITISH COLUMBIA BUILDING CODE** governing construction and public safety measures and all other applicable enactment.
- Excavation is **not** permitted until Building Permit has been issued.
- Burning is not permitted.
- If the demolition contractor changes after the permit is issued, the permit is invalid until Planning and Development Services has been notified.

PRIOR TO RELEASE OF DEMO PERMIT - REQUIRED FROM APPLICANTS:

1. **Hazardous material report**
2. **Abatement of hazardous materials**
3. **Copy of notice of project to WorkSafe BC**
4. **Issued Tree Management Permit**
5. **Vector Control Report stating that there are no vectors present or that all vectors have been successfully removed**

AFTER THE DEMOLITION PERMIT IS ISSUED:

1. Contact and obtain approvals from the appropriate parties for the disconnections of Hydro, Gas and Water Services.
2. A Water Service Disconnection Application needs to be filled out before demolition of a building. The City will go on site to decommission and remove the water meter and shut the water off to the property. The meter is removed to avoid any damages to the meter during construction.
3. Cap-off of services is required and done by the City's Engineering Department. Owner is required to expose sewer services at property line prior to schedule of cap-offs. Call Engineering Department at least **48 hours prior to demolition to schedule for storm and sewer cap-offs** at **604.541.2181**. Please allow 24 hours for completion of cap-off.
4. Demolition inspection is required. Call the Building Inspection Line at **604.541.2135** when the demolition is completed **to schedule a demolition inspection** of the site.
5. Once the services have been capped by Engineering, they will notify Planning and Development Services. The applicant will be notified shortly thereafter.

NOTE:
Building Permits are only issued after demolition completion and sewer cap-off confirmation from the Engineering Department.

Distribution:

☐BC Assessment ☐Fire Department ☐Finance –Tax Clerk

☐WorkSafeBC

City of White Rock
15322 Buena Vista Ave
White Rock BC V4B 1Y6

Receipt: 11319/3 Nov 14, 2018
Dated: Nov 14, 2018 11:04:53 AM
Station: CASH 4/JASON

COMM	BP020362	9,357.00
MEMRH	BP020362	5,000.00
Total		14,357.00
CHEQUE	SOLTERRA (WHITE ROC	-14,357.00

Thank You for Your Payment

THE CORPORATION OF THE

CITY OF WHITE ROCK

DEVELOPMENT PERMIT NO. 394

1. This Development Permit No. 394 is issued to Bayside Systems Supply, Ltd. as the owner and shall apply only to ALL AND SINGULAR those certain parcels or tracts of land and premises situate, lying and being in the City of White Rock, in the Province of British Columbia, and more particularly known and described as:

   Legal Description:

   Lot 3 Except: West 7 Feet; Section 11 Township 1 New Westminster District Plan 13198
   PID: 009-782-940

   Lot 4 Except: West 7 Feet; Section 11 Township 1 New Westminster District Plan 13198
   PID: 009-782-958

   Lot 5 Except: West 7 Feet; Section 11 Township 1 New Westminster District Plan 13198
   PID: 009-782-991

   South 66 Feet Lot "A" Except: West 7 Feet, Section 11 Township 1 New Westminster District Plan 8670
   PID: 011-342-544

   (1350 Johnston Road)

   As indicated on Schedule A (the "Lands").

2. This Development Permit No. 394 issued pursuant to the authority of Sections 490 and 491 of the *Local Government Act, R.S.B.C. 2015, Chapter 1*, the "White Rock Official Community Plan Bylaw, 2017, No. 2220" as amended, and in conformity with the procedures prescribed by the "City of White Rock Planning Procedures Bylaw, 2017, No. 2234" as amended.

3. The terms, conditions and guidelines as set out in "White Rock Official Community Plan Bylaw, 2017, No. 2220" as amended to the date of issuance of this Permit, that relate to "Lower Town Centre Development Permit Area" shall apply to the Lands.

4. Land, buildings, and structures on the Lands shall only be used in accordance with the provisions of the "CD-58 Comprehensive Development Zone" of the "White Rock Zoning Bylaw, 2012, No. 2000" as amended.

5. All buildings and structures to be constructed, repaired, renovated, or sited on the Lands shall be in substantial compliance with the Plans, prepared by Rafii Architects Inc. and Durante Kreuk Ltd., attached hereto in accordance with the provisions of Section 491 of the *Local Government Act* as Schedules B to E:

Schedule B	Site Plan
Schedule C	Building Elevations
Schedule D	Renderings
Schedule E	Landscape Plans

These Plans form part of this development permit.

6. Terms and Conditions:
   a) The applicant shall grant to the City a statutory right of way satisfactory to the City's CAO on the Lands to provide for public access;
   b) The applicant shall provide landscaping for the development in substantial compliance with the Landscape Plans (Schedule E) to the acceptance of the Director of Planning and Development Services and the Director of Engineering and Municipal Operations, and must also submit landscaping securities of $604,840.00 (125% of the estimated cost of on-site landscaping) to the City prior to the issuance of a building permit;
   c) Rooftop mechanical equipment shall be screened from view to the acceptance of the Director of Planning and Development Services; and
   d) The hydro kiosk is to be located to the acceptance of the Director of Planning and Development Services and the Director of Engineering and Municipal Operations.

7. In the interpretation of the Development Permit all definitions of words and phrases contained in Sections 490 and 491 of the *Local Government Act, R.S.B.C. 2015, Chapter 1*, and the "White Rock Official Community Plan Bylaw, 2017, No. 2220", as amended to the date of issuance of this Development Permit, shall apply to this Development Permit and attachments.

8. If the holder of this Permit does not obtain the required building permits and commence construction of the development by excavating the subject land and constructing foundations of the buildings shown on the Plans as outlined in this Development Permit within two years after the date this Permit was authorized by Council, the Permit shall lapse, unless the Council, prior to the date the Permit is scheduled to lapse, has authorized further time extension of the Permit.

9. This permit does not constitute a subdivision approval, a tree management permit, a demolition permit, or a building permit, and does not have the effect of altering use or density on the Lands.

Authorizing Resolution passed by the Council for the City of White Rock on the 23rd day of July, 2018.

This development permit has been executed at White Rock, British Columbia on the 24th day of July 2018.

The Corporate Seal of THE CORPORATION OF THE CITY OF WHITE ROCK was hereunto affixed in the presence of:

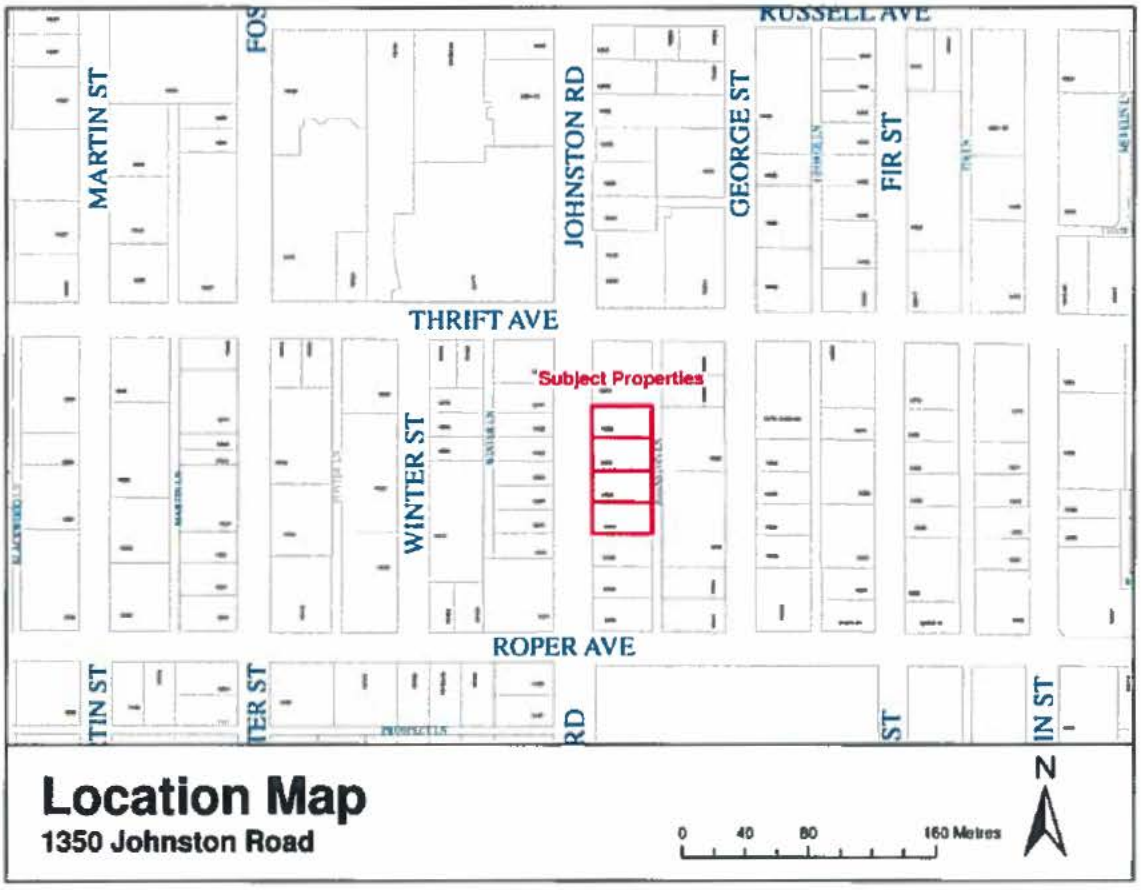
Mayor
Authorized Signatory

Wayne Baldwin
Mayor

Director of Corporate Administration
Authorized Signatory

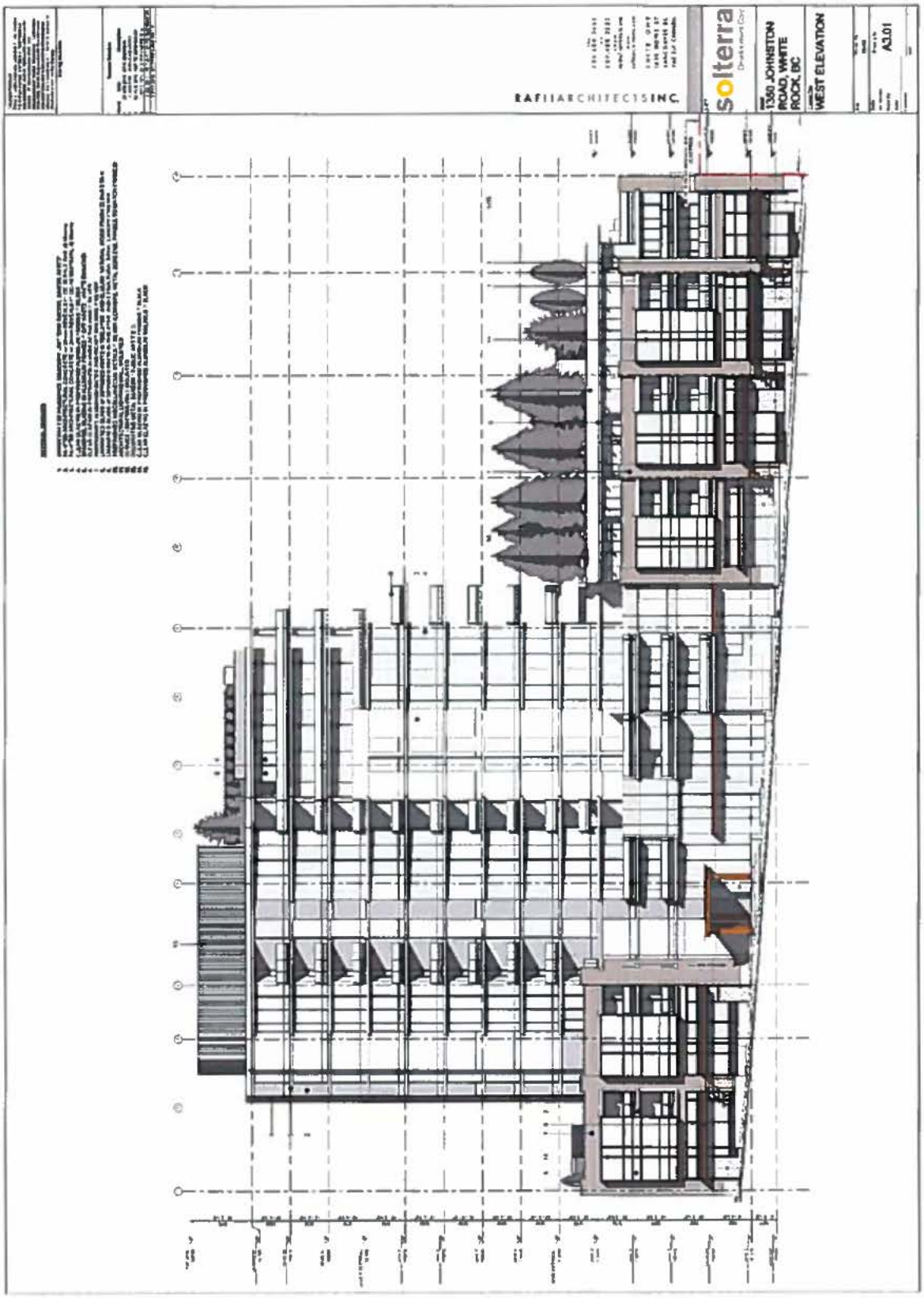
Tracey Arthur, Director
Corporate Administration

Schedule A – Location Map



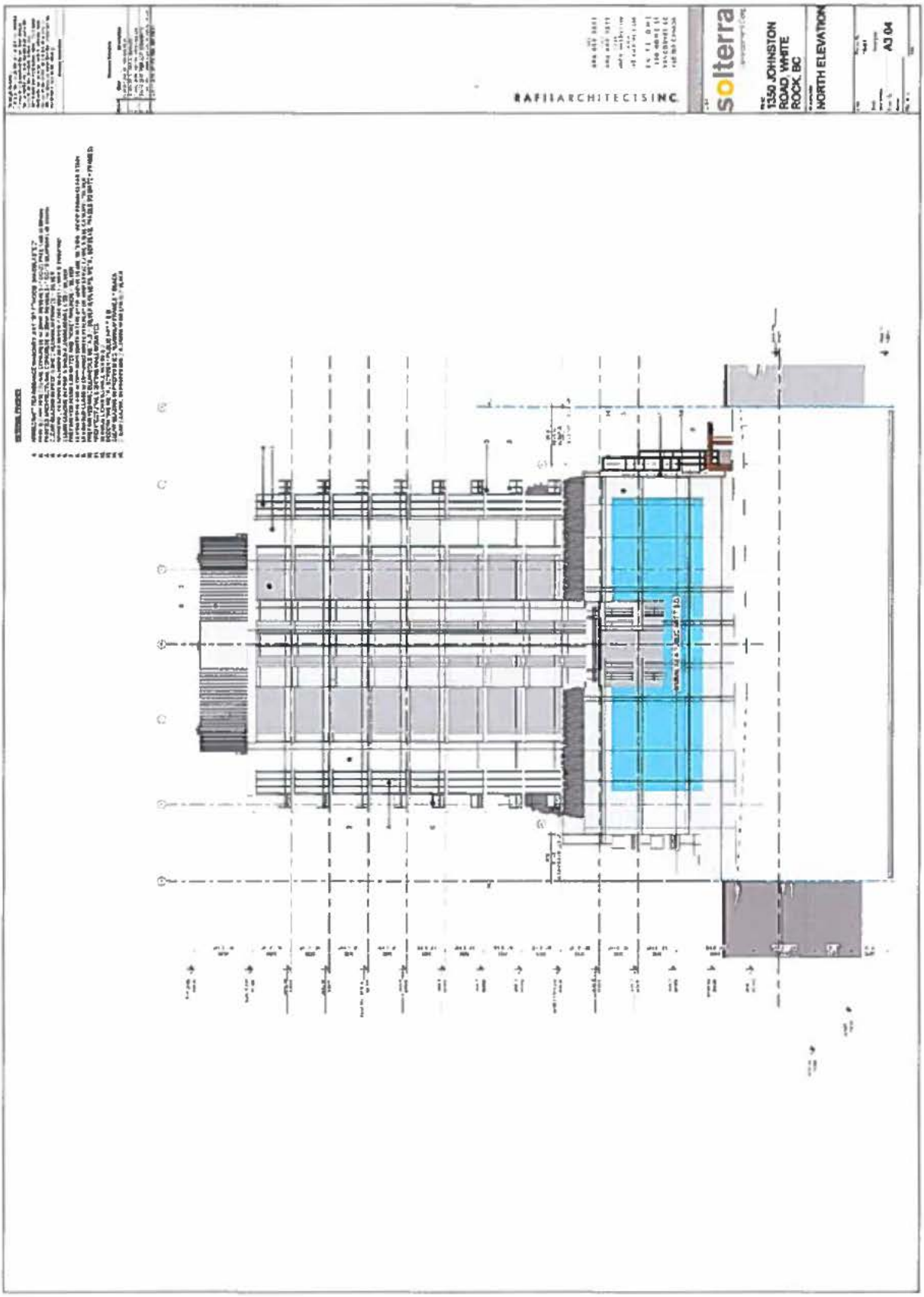
Schedule B – Site Plan

Schedule C – Building Elevations



RAFII ARCHITECTS INC
solterra
1350 JOHNSTON ROAD, WHITE ROCK, BC
SOUTH ELEVATION
A3.02

RAFII ARCHITECTS INC.
solterra
1350 JOHNSTON ROAD, WHITE ROCK, BC
EAST ELEVATION
A3.03


RAFII ARCHITECTS INC
solterra
1350 JOHNSTON ROAD WHITE ROCK, BC
NORTH ELEVATION
A3.04

Schedule D – Renderings

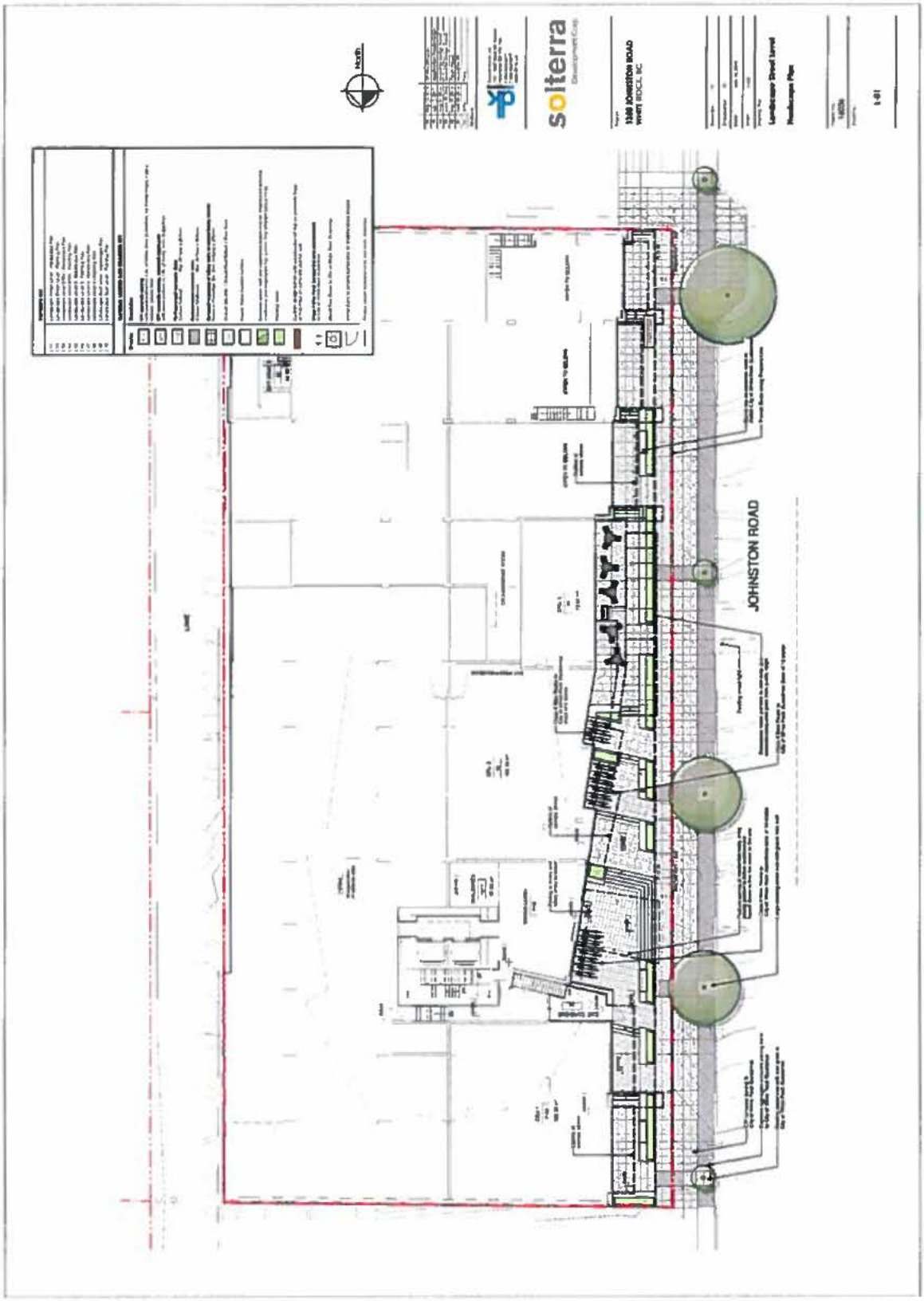
LOOKING NORTH EAST AT JOHNSTON ROAD

WEST VIEW

LOOKING EAST TOWARDS MAIN LOBBY ENTRY

NW VIEW

Schedule F – Landscape Plans



solterra
Development Corp
1350 JOHNSTON ROAD
WHITE ROCK, BC
Landscape Street Level
Planting Plan
L-02
LANE

solterra
1350 JOHNSTON ROAD
WHITE ROCK, BC
Landscape Level 2/3R
North Slope Plan
L03

solterra

solterra

1350 JOHNSTON ROAD
WHITE ROCK, BC

Landscape Level 1

Hardscape Plan

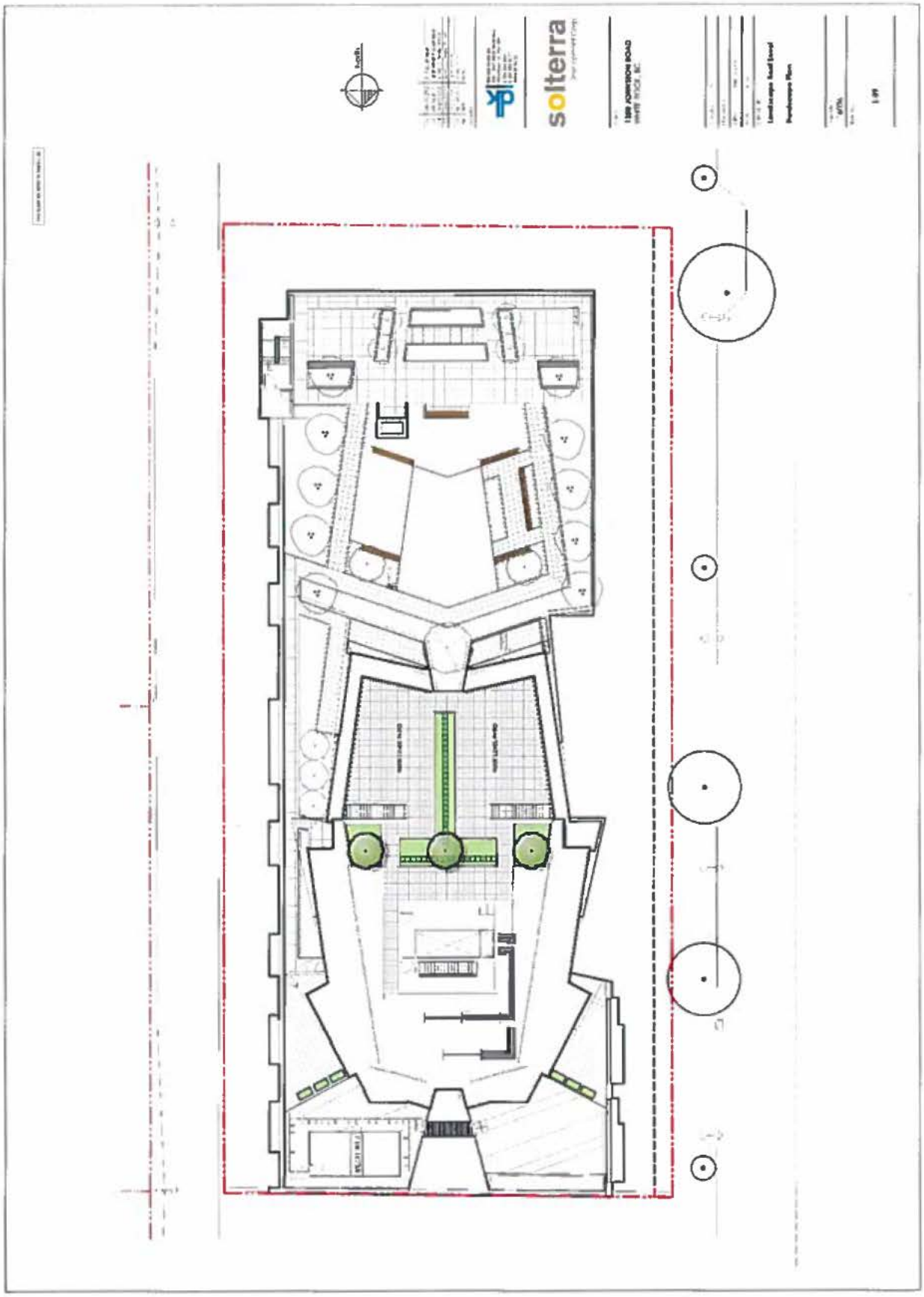
16056

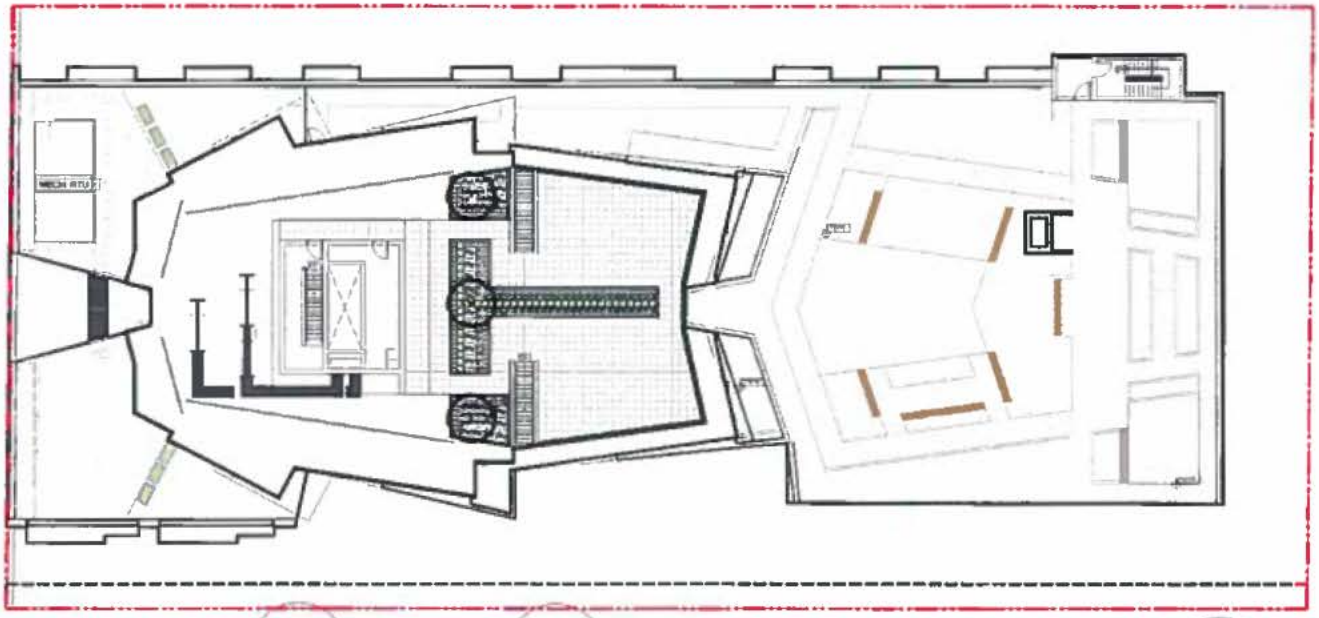
L-01

solterra
1350 JOHNSTON ROAD
WHITE ROCK, BC
Landscape Level 2
Planting Plan

solterra
1350 JOHNSTON ROAD
Landscape Level 4
Roof Plan

North
solterra
Development Corp
1350 JOHNSTON ROAD
WHITE ROCK, BC
Landscape Level 6
Planting Plan
LANE


solterra



North

solterra
Development Corp

1350 JOHNSTON ROAD
WHITE ROCK, BC

Landscape Roof Level

Planting Plan

1:100

L-10

COPY

THE CORPORATION OF THE CITY OF WHITE ROCK

BUILDING PERMIT

PLANNING & DEVELOPMENT SERVICES
CITY OF WHITE ROCK

DATE OF ISSUANCE: MAR 17 2020 ~~MAR 7 1 2020~~

BUILDING PERMIT No: BP020363
ROLL No: 002914.100

PROJECT ADDRESS: 1350 JOHNSTON RD
LEGAL DESCRIPTION: LT A/ SEC 11/ NWD/ PL EPP84561/ TWP 1
ZONE: CD-58

DESCRIPTION OF PROJECT:
Building Permit for foundation work. Levels P2, P1, LG and MG Parkade

PROJECT ADDRESS: 1350 JOHNSTON RD
LEGAL DESCRIPTION: LT 4/ SEC 11/ NWD/ PL NWP13198/ TWP 1
ZONE: CR-2

DESCRIPTION OF PROJECT:
Building Permit for foundation work. Levels P2, P1, LG and MG Parkade

OWNER: BAYSIDE SYSTEMS SUPPLY LTD Phone: 604-830-3756
ADDRESS: ANNACIS BUSINESS PARK 460 FRASERVIEW PL DELTA BC V3M 6H4

BUILDER: SOLTERRA Phone: 6045286010
ADDRESS: #1 - 460 FRASERVIEW PLACE DELTA, BC V3M 6H4

.....
Owner or Authorized Agent

.....
Building Official

B.C.B.C 1.1.2.4 Responsibility of Owner

1) Neither the granting of a building permit nor the approval of the relevant drawings and specifications nor inspections made by the Authority Having Jurisdiction shall in any way relieve the owner of such building from full responsibility for carrying out the work or having the work carried out in full accordance with the requirements of the British Columbia Building Code.

PERMIT FEES:	**Project Value:**	
COM AMNTY CONTR	1.00	2,880,000.00
BP BLD CODE ALT	1.00	624.00
BP CRP FEE	0.00	-500.00
BP SCAN FEE	0.00	1,200.00
BP APPL FEE	7,479,000.00	76,123.00
DP SECURITIES	1.00	604,840.00
DEP EXCAVATION	1.00	525,000.00
DCC SCHOOL	1.00	58,200.00
DCC	1.00	1,178,145.60
DCC GVSDD	1.00	352,398.47
DCC TRANSLINK	1.00	121,076.25
	Total:	**$4,657,227.12**

CONDITIONS:

ALTERNATIVE SOLUTIONS ON FILE FROM WENDY MORRISON, GHL CONSULTANT LTD.

ALTERNATIVE SOLUTIONS ON FILE. CODE CONSULTANT SHALL PROVIDE THE FOLLOWING: 1. FIELD REVIEW REPORTS; AND2. A LETTER UPON COMPLETION OF THIS PROJECT, PROVIDING ASSURANCE THAT:•THE UNDERSIGNED HAS FULFILLED HIS OBLIGATION FOR SHOP DRAWING REVIEW AND FIELD REVIEW, AND•THE ALTERNATIVE SOLUTION HAS BEEN INSTALLED IN A MANNER SATISFACTORY TO THE UNDERSIGNED AS BEING IN COMPLIANCE IN ALL MATERIAL RESPECTS WITH THE ABOVE REFERENCED ALTERNATIVE SOLUTION.

OCCUPANY / FINAL GRANTED: ..... **Date:** .....

The City of White Rock, in issuing this Building Permit, has relied upon (a) Registered Professional(s) for certification to the B. C. Building Regulations for the plans or aspects of the plans.

Neither the issuance of a **permit** under this Bylaw nor the acceptance or review of plans, drawings, specifications or supporting documents, nor any inspections made by or on behalf of the **City** shall in any way relieve the **owner** or his or her representatives from full and sole responsibility to perform the work in strict accordance with the **Building Code**, this Bylaw, and any other applicable enactments respecting safety.

It shall be the full and sole responsibility of the **owner** (and where the **owner** is acting through a representative, the representative) to carry out the work in respect of which the **permit** was issued in compliance with the **Building Code**, this Bylaw and any other applicable enactments respecting safety.

Neither the issuance of a **permit** under this Bylaw nor the acceptance or review of plans, drawings, specifications or supporting documents, nor any inspections made by or on behalf of the **City** constitute in any way a representation, warranty, assurance or statement that the **Building Code**, this Bylaw or any other applicable enactments respecting safety have been complied with.

THE CORPORATION OF THE CITY OF WHITE ROCK

BUILDING PERMIT

DATE OF ISSUANCE: N

BUILDING PERMIT No: BP020363

ROLL No:

ARCHITECTURAL SCHEDULE B ON FILE FROM FOAD RAFII, RAFFI ARCHITECTURE INC.
COORDINATING REGISTERED PROFESSIONAL SCHEDULE A ON FILE FROM FOAD RAFII, RAFFI ARCHITECTURE INC.
FIELD REVIEWS ARE REQUIRED
FIRE SUPPRESSION SCHEDULE B ON FILE FROM GEORGE GHATTAS, SRC ENGINEERING CONSULTANTS LTD.
GEO-TECHNICAL SCHEDULE B ON FILE FROM MATT KOKAN, GEOPACIFIC CONSULTANTS LTD.
MECHANICAL AND PLUMBING SCHEDULE B ON FILE FROM GEORGE GHATTAS, SRC ENGINEERING CONSULTANTS LTD.
MONITORING REQUIRED AS WORK PROGRESSES
APPROVED FIRE SPRINKLER DRAWINGS ARE REQUIRED PRIOR TO INSTALLATION OF SYSTEM.
ELECTRICAL SCHEDULE B ON FILE: STEVEN NEMETZ, NEMETZ (S/A) & ASSOCIATES LTD.
STRUCTURAL SCHEDULE B ON FILE FROM CRAIG CHONG, GLOTMAN SIMPSON CONSULTING ENGINEERS.
TREE MANAGEMENT PERMIT NO. 00132 ISSUED.

OCCUPANY / FINAL GRANTED: ..... **Date:** .....

The City of White Rock, in issuing this Building Permit, has relied upon (a) Registered Professional(s) for certification to the B. C. Building Regulations for the plans or aspects of the plans.

Neither the issuance of a **permit** under this Bylaw nor the acceptance or review of plans, drawings, specifications or supporting documents, nor any inspections made by or on behalf of the **City** shall in any way relieve the **owner** or his or her representatives from full and sole responsibility to perform the work in strict accordance with the **Building Code**, this Bylaw, and any other applicable enactments respecting safety.

It shall be the full and sole responsibility of the **owner** (and where the **owner** is acting through a representative, the representative) to carry out the work in respect of which the **permit** was issued in compliance with the **Building Code**, this Bylaw and any other applicable enactments respecting safety.

Neither the issuance of a **permit** under this Bylaw nor the acceptance or review of plans, drawings, specifications or supporting documents, nor any inspections made by or on behalf of the **City** constitute in any way a representation, warranty, assurance or statement that the **Building Code**, this Bylaw or any other applicable enactments respecting safety have been complied with.

Detailed Site Investigation

1350 JOHNSTON ROAD, WHITE ROCK, BC [SITE 21574]

Submitted to:

SOLTERRA DEVELOPMENT CORP.

June 8, 2018

Report by:

NEXT ENVIRONMENTAL INC.

215 – 2550 Boundary Road

Burnaby, BC V5M 3Z3 Canada

Tel: 604.419.3800

Fax: 604.419.3801

www.nextenvironmental.com

Prepared By

Chris Steele, B.A.Sc., E.I.T.

Assistant Manager, Operations

Reviewed By

Gavin Leung, P.Ag.

Manager, Operations

Compliance Statement

This report was completed in general accordance with the Environmental Management Act and the regulations thereto as in effect at the date of the report, including Contaminated Sites Regulation ("CSR") methodology and procedures. The staff at NEXT has over 100 years of combined experience in environmental investigation and remediation of contaminated sites NEXT has completed over 7,500 environmental studies including Stage 1 and Stage 2 Preliminary Site Investigations, Detailed Site Investigations, Remediation Plans, Remediations, Risk Assessments, Confirmatory Sampling and Monitoring Reports. The author has participated in, coordinated and/or reviewed all types of environmental studies. The staff have worked under the direct supervision of the reviewer, and has experience in on-site evaluations and investigations. Both the undersigned staff and reviewer were directly involved in this project, and their qualifications are included in the Appendix of this report. **Report does not constitute warranty**. The assessment and conclusions in this report are based on the interpretation of information collected during the investigation and/or relevant knowledgeable parties/resources. The accuracy of the information available to or presented to NEXT cannot be warranted and/or is the responsibility of the issuers. NEXT does not therefore, warrant the information contained in this report. The responsibility of NEXT is to express an opinion on the information as obtained/presented regarding the environmental status of the Site and the degree to which it constitutes a potential environmental liability, as at the date of the report. **Services considered confidential and cannot be relied on by third parties**. The contents of this report are confidential and are intended for the exclusive use of Solterra Development Corp. (Client), the Ministry of Environment & Climate Change Strategy ("Ministry"), and the Society of Contaminated Sites Professionals ("CSAP") of British Columbia, unless otherwise expressly permitted by NEXT. NEXT accepts no responsibility for any damages suffered by any third party as a result of decisions made or actions taken based on this report. Any use of the report or reliance on or decision made based on its contents by any third party is at the risk of said party. NEXT is not responsible for any representations made by the Client to a third party based on the contents of this report. The Client assumes full responsibility for damages sustained by any third party arising from representations made by the Client to a third party based on the contents of this report.

Detailed Site Investigation

1350 Johnston Road, White Rock, BC [SITE 21574]
for
SOLTERRA DEVELOPMENT CORP.

Date:
June 8, 2018

This report presents a **Detailed Site Investigation** ("DSI") conducted by Next Environmental Inc. ("NEXT") at 1350 Johnston Road, White Rock, BC, which investigated and delineated contamination that was identified to have migrated onto the Site from an up-gradient and adjacent service station operation. Please note that this summary should be read in conjunction with the entire report.

Contamination Delineated	**Yes**
Further Work Recommended	**Remediation and Risk Assessment**

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1. INTRODUCTION

Next Environmental Inc. ("NEXT") was retained by Solterra Development Corp. ("Client") to delineate contamination that has migrated from an up-gradient and adjacent service station operation, in order to determine an appropriate remedial strategy and facilitate an eventual Certificate of Compliance ("COC") application.

1.1 Site Description

Site Address	1350 Johnston Rd, White Rock, BC
Legal Description	Lots 3, 4 and 5 Except: West 7 Feet; Section 11, Township 1, New Westminster District Plan 13198; with respective PID 009-782-940, 009-782-958 and 009-782-991 South 66 Feet Lot "A" Except: West 7 Feet, Section 11, Township 1, New Westminster District Plan 8670; with respective PID 011-342-544
Registered Owner	**Bayside Systems Supply Ltd., Inc.No. 453849** 4336 Lougheed Highway Burnaby, BC V5C 3Y8
Coordinates	49° 01' 35.9'' N and 122° 48' 02.6'' W
Zoning	CD (Comprehensive Development)
Land Use	**Historical Land Use:** The Site was historically occupied by a building supply retail store from the 1960s to early-mid 2017.
	Present Land Use: Currently vacant
	Future Land Use: According to Mr. Carl Funk (client representative) and the proposed development plans from July 2017, the Site will be re-developed into a high-rise residential building, with commercial units on ground floor, and 3 levels of underground parkade.
Current Site and Surrounding Land Configuration	The northern half of the Site is covered with gravel, with a storage shed along the western property line. Some wooden pallets and a storage container were located in this part of the Site. The southern half of the Site was comprised of a two-storey commercial building, which is currently vacant. The building will remain vacant until it is demolished to prepare for redevelopment. An asphalt-paved parking lot is located south of this building. Low-rise residential apartment buildings were located east of the Site, while commercial businesses occupied the properties to the north, west, and south. A Petro Canada service station (**AEC 1**) was located immediately north of the Site, at 1392 Johnston Road.

1.2 Previous Investigations

NEXT completed a "*Stage 1 Preliminary Site Investigation, 1350 Johnston Road, White Rock, BC*" ("Stage 1"), dated June 8, 2018. The Stage 1 included a review of a previous supplemental soil investigation and test-pit work completed by NEXT. The Stage 1, soil investigation and test pitting are discussed further in **Section 3.1**. The following AEC was identified in the Stage 1:

AEC	PCOCs
AEC 1: Petro Canada Service Station *c.1960 – present.*	LEPH, HEPH, PAHs, VOCs, VPH, Metals See Appendix B for a detailed PCOC list.

2. APPLICABLE REGULATORY STANDARDS

A summary of applicable standards are presented in the following table, and details for the determination of standards are presented in Appendix A.

Summary of applicable standards to the Site and surrounding properties.

Matrix	Standard	Site-Specific Factor	Applicable?
Soil	CSR Schedule 3.1 Part 1 (Matrix) – Commercial Land Use (CL)	Human Health Protection	
		• Intake of Contaminated Soil	Yes
		• Groundwater Used for Drinking Water	Yes
		Environmental Protection	
		• Toxicity to soil invertebrates and plants	Yes
		• Livestock ingesting soil and fodder	Yes
		• Major microbial functional impairment	Yes
		• Groundwater flow to surface water used by aquatic life – freshwater	No
		• Groundwater flow to surface water used by aquatic life – marine	No
		• Groundwater used for livestock watering	No
		• Groundwater used for irrigation watering	No
	CSR Schedule 3.1 Part 2 & 3 (Generic) – Commercial Land Use (CL)	Protection of Human Health	Yes
		Protection of Ecological Health	Yes
Groundwater	CSR Schedule 3.2 – Generic Numerical Water Standards	Aquatic Life (AW) – freshwater	No
		Aquatic Life (AW) – marine	No
		Drinking Water (DW) – excluding Fe, Mn	Yes
		Drinking Water (DW) – Fe, Mn	No
		Irrigation Water (IW)	No
		Livestock Water (LW)	No
	CSR – Protocol 7	EPH_{W10-19} & VH_{W6-10}	Yes
Vapour	CSR Schedule 3.3 Generic Numerical Vapour Standards On-Site Receptors: Commercial Use (CU) Off-Site Receptors: Residential Use (RU)	Not applicable	Yes

3. DETAILED SITE INVESTIGATION ("DSI")

3.1 Conceptual Site Model ("CSM")

Based on the NEXT Stage 1, the up-gradient and adjacent service station operation was determined to be the only area of potential environmental concern (**AEC 1**) – the Site itself only operated as a building supply storage and retail operation. Based on aerial photographs, it was determined that the area near the northern property line where contamination had been identified was previously used only for outdoor storage of lumber. There is no evidence nor reason to suspect potential on-Site contamination sources. The neighbouring service station has been present for approximately 60 years, and it is logical that contaminants from fuel USTs (as well as potential leaks and spills from the pump islands) would migrate through the subsurface towards and onto the Site.

An elevation difference of approximately 2m was noted between the Site and the service station property to the north, with a retaining wall present between the two. Initial soil and test-pitting investigations at the Site identified hydrocarbon contamination at a depth between ~1m to ~1.5 metres below grade surface. Given that soil contamination was not identified at the surface of the Site, but instead starting at approximately 1m below surface, it is reasonable to conclude that this contamination could have migrated through sand or gravel seams from up-gradient USTs buried approximately 3m below the surface of the service station property. The exact depth of the off-Site USTs is unknown, but based on NEXT's experience 3m below surface is a reasonable estimate.

NEXT notes that during the test-pitting investigation, one soil sample collected from the northwest wall of the excavation (EX1-01) did not show signs of contamination and appears to show delineation toward the north (see **Figure 04**); however, a sample collected from same depth from the northeast wall of the excavation (EX1-02) showed a very high headspace vapour concentration (100% LEL vs. 300ppm in sample EX1-01). Samples EX1-05 (southwest wall) and EX1-06 (east wall) with headspace readings of 23% LEL and 93% LEL, respectively, both contained hydrocarbon parameters in concentrations above applicable standards. As such, it is anticipated that had sample EX1-02, been analyzed, hydrocarbon contamination would have been identified. The test pit was completed as an exploratory program to gain a better understanding of subsurface conditions. Several samples with varying headspace readings were submitted to obtain an understanding of potential correlation between headspace vapour and actual soil contamination. Based on this sample EX1-01 was submitted for laboratory analysis and EX1-02 was not.

Based on the above, the Site will be treated as an affected parcel. On such parcels, delineation of contamination migrating onto the Site from an off-Site source is only required to depth and to the parcel boundaries. In this case, delineation/remediation of contamination at the Site need not be completed past the Site boundaries for contamination associated with **AEC 1**, and only on-Site delineation (including vertical extent) is required.

Delineation of the soil contamination will be needed as part of this DSI, but geology was identified to be mainly till or till-like conditions, thus it is reasonable to expect that the extent of soil contamination is limited, through these low permeable soils. Groundwater and vapour was not assessed during the initial investigations, and will need to be addressed in this DSI for current and future applicable CSR standards.

We anticipated that groundwater is approximately 25m below grade surface, based on previous drilling experience in this area of White Rock, and it would seem reasonable that contamination would not have migrated through till and contacted the groundwater. Further investigation during this DSI will be able to confirm the presence or absence of contamination.

Future development plans for the Site include a three storey underground parkade, with the parkade slab approximately 9m below current grade surface, thus the anticipated remediation strategy will comprise excavation of soil contamination within the parkade, and a Risk Assessment of potential contamination deeper than the parkade.

3.2 DSI Objectives

Based on the previous investigation results, the objectives of the DSI are to:

- Attempt to delineate soil contamination associated with **AEC 1**;
- Delineate groundwater contamination (if any) to the Site property boundaries associated with **AEC 1**;
- Assess current and future vapour exposure scenarios; and,
- Confirm the CSM presented in Section 3.1.

3.3 Scope of Work

To address the objectives listed in Section 3.2, the scope of work for this DSI comprised:

- Completing a site-specific health and safety plan, which included placing the BC One Call and conducting a private underground utility locate;
- Subcontracting GeoScan Subsurface Surveys ("GeoScan") as the professional utility locator;
- Subcontracting VanMars Drilling Ltd. ("VanMars"), On Track Drilling Inc. ("On Track") and Omega Environmental Ltd. ("Omega") as the drilling contractors. Two rounds of drilling were completed (BH100 and BH200 series) during the DSI;
- Developing and purging groundwater and vapour wells;
- Collecting soil, groundwater and vapour samples;
- Field-screening all soil samples for headspace readings;
- Classifying and recording soil conditions, and any visual and/or olfactory observations indicating the potential presence of the Potential and Identified Contaminants of Concern ("PCOCs and ICOCs");
- Submitting select soil, groundwater, and vapour samples to Caro Analytics ("CARO") for laboratory analysis;
- Applying applicable vapour attenuation factors to subsurface vapour samples based on sample depth, current land use, and future land use;
- Comparing contaminant concentrations in soil, groundwater and vapour to applicable standards; and,
- Preparing this report with an interpretation of the findings.

4. INVESTIGATION METHODOLOGY

A discussion of the methodology used by NEXT for this DSI is presented in **Appendix C**, with Site-specific information provided below in the following subsections. Sampling methodology was consistent with Ministry guidelines and general best practice methods. Borehole logs, which present lithology and monitoring well installation, are provided in **Appendix D.**

The primary constituents that are generally accepted by the industry for service station operations were analyzed[1]. While some secondary constituents (such as tetraethyl lead and butylated hydroxytoluene ("BHT")) were not analyzed, it is reasonable that successful delineation of primary constituents, where their concentrations were below detection limits, would also have successfully determined the extent of secondary constituents. In addition, in NEXT's past experience, we have found that tetraethyl lead is generally not present unless VHw6-10 contamination is also present. In this case, no VHw6-10 contamination was identified, and in fact, concentrations were an order of magnitude less than the applicable standard. Thus, it is not a deficiency from a delineation perspective. Furthermore, as the Site is an affected parcel, depth delineation of soil and groundwater would be the only focus to facilitate the eventual remediation and COC.

4.1 Soil Investigation

Additional boreholes (BH100 series) were drilled to laterally and vertically delineate the soil contamination identified in the initial soil and test-pitting investigation. BH101 was advanced to a depth of ~30m below grade surface ("bgs") for purposes of depth delineation, while the rest of the BH100 series laterally delineated the highest soil contamination concentrations towards the east and south, following appropriate step-outs as per Technical Guidance 1. Lateral delineation to the west was achieved from the initial test-pitting work. Note that BH103, BH104, BH107, and BH108 were drilled as back-up locations, in the event that the boreholes closer to the initial soil contamination failed to achieve delineation.

Soil samples were collected and analyzed where high headspace readings were encountered, and where groundwater was anticipated, to capture potential presence of hydrocarbon contamination associated with **AEC 1**. Overall, adequate soil investigation was completed as part of this DSI.

4.2 Groundwater Investigation

A groundwater well was originally installed at BH101, but was found to have been destroyed the following day, rendering sampling impossible. BH110 was drilled to replace BH101, to a depth of approximately 30m bgs. BH203 was drilled to approximately 46m bgs, to provide depth delineation immediately adjacent to BH101/BH110. As discussed above, lateral delineation is only needed at the Site boundaries because the Site is an affected parcel – the rest of the BH200 series were placed near the eastern, western, and southern property boundaries, and screened at approximately the same depth as BH110 (where groundwater contamination was identified).

Monitoring wells were screened where wet and/or saturated soils were encountered, intersecting the water table, as per Technical Guidance 8. The groundwater investigation locations were considered adequate with regards to delineation to Site boundaries.

[1] This is based on the PCOC lists of recent Ministry Instrument submissions completed after November 1, 2017 (post-Omnibus), such as Site ID 21010.

4.3 Vapour Investigation

Vapour concentrations for both current and future land use were calculated, from five vapour monitoring wells that were installed across the Site. Current vapour exposure was limited to outdoor receptors only, as the on-Site building is vacant and will remain vacant until it is demolished. For future use, only indoor receptors were considered as the future building will be constructed property line to property line, and indoor attenuation is significantly more stringent than outdoor regardless. One vapour well (BH206v) was installed to approximately 3m bgs, in the area with highest concentrations of soil contamination, while the rest of the BH200 series wells were installed at a depth of approximately 9m bgs, which is the depth of the future underground parkade slab.

Vapour samples were all collected in May 2018. Generally, vapour samples should be collected during the warmest months to assess for worst-case scenarios. However, the vapour monitoring wells that are critical to assess future indoor parkade exposure are installed at a depth where ground temperature are negligibly affected by diurnal and seasonal fluctuations. Ground temperature data (used to determine frost line for agricultural purposes) have supporting evidence for over a century that show subsurface zones of ~6m bgs and beyond experience very little fluctuations or influence by above-surface climates[2]. This is supported by various other studies that have found diurnal temperature would not have a significant impact after ~1m bgs, and annual fluctuations are virtually non-existent by ~9 to 10m bgs[3]. As such, the vapour investigation in this DSI is considered to have adequately assessed worst-case scenarios.

Appropriate Vertical Attenuation Factors ("VAF"), as per Technical Guidance 4, were applied to calculate concentrations in the breathing zone for current land use. Since the future parkade will span the entirety of the on-Site building, a Parking Attenuation Adjustment Divisor ("PAAD") was applied in conjunction with a subslab VAF to calculate concentrations in the breathing zone for future land use. The use of this PAAD conformed to Section 4.2 of Protocol 22, and is presented in this DSI to support the eventual Risk Assessment.

All vapour wells were at appropriate depths and locations to adequately assess current and future land use.

4.4 Quality Assurance / Quality Control Program

See **Appendix E** for additional information the QA/QC program utilized during this investigation.

[2] https://www.pik-potsdam.de/services/climate-weather-potsdam/climate-diagrams/ground-temperature
[3] https://www.researchgate.net/publication/30500353_Annual_ground_temperature_measurements_at_various_depths
https://www.builditsolar.com/Projects/Cooling/EarthTemperatures.htm

5. FINDINGS AND DISCUSSION

The following sections detail the findings of the DSI. Soil analytical results are presented on **Table 1** and summarized on **Figure 4**. Groundwater analytical results are presented on **Table 2** and summarized on **Figure 5**. Vapour analytical results are presented on **Tables 3 and 4** and summarized on **Figures 6 and 7**. Cross sections with soil, groundwater, and vapour analytical results are presented in **Figures 8 and 9**.

5.1 Soil Results

The observed geology at the Site was mainly till down to an investigation depth of approximately 46m bgs. However, numerous Sand and Gravel and Silt/Clay seams were observed at various depths, suggesting that the geology is actually quite complex.

Initial soil investigation and test-pitting (as discussed in the Stage 1) identified some soil hydrocarbon contamination, mainly in the ~1.5m depth. During the DSI, BH101 appeared to have identified the area of highest soil contamination concentrations at approximately ~2.5m bgs, while a shallower soil sample did not identify contamination. This appears to supports our CSM that the contamination is from an off-Site parcel (**AEC 1**), rather than from an on-Site source.

Lateral delineation of this worst-case area achieved, via mainly non-detectable soil concentrations from surrounding samples collected. Soil contamination was identified to have reached a much lower depth than originally anticipated – benzene contamination was identified in BH101 samples to a depth of ~22m bgs. Four deeper soil samples were collected from 27m to 43m bgs, and all were below applicable CSR standard (the bottom three were below laboratory detection limits), thus showing successful depth delineation.

Encountering soil contamination at such depths is further indication that the source is likely from the **AEC 1**, and not from an on-Site source, since it would require constant contaminant contribution (i.e.: leaks over a long period of time) to provide the necessary head for this type of vertical migration.

5.2 Groundwater Results

Hydrocarbon contamination was identified at approximately 28m bgs, in BH110. The BH200 series was drilled to determine the vertical extent, as well as delineate to the Site boundaries. BH201 had concentrations below laboratory detection limits. However, the rest of the groundwater monitoring wells were dry, including the depth delineator well at ~46m bgs.

The dry wells were unexpected, especially when wet and/or saturated soils were observed in all investigation locations at approximately 27m bgs, and that groundwater was confirmed to be present at 28m bgs in BH110 and BH201. As discussed earlier, the geology (and thus the hydrogeology) appears to be very complex, with numerous Sand and Gravel and Silt/Clay seams scattered throughout the predominant till – this renders a proper hydrogeological investigation extremely difficult, if not impossible.

Based on the local and regional topography, and the location of Boundary Bay, it is reasonable that groundwater flow direction would be primarily towards the south to southwest. Since BH201 (with non-detectable concentrations) was positioned down-gradient from BH110 near the western property line, and all other groundwater wells were dry, groundwater delineation to the Site boundaries is considered achieved.

5.3 Vapour Results

No predicated vapour contamination was identified when compared to current land use. The on-Site building is currently vacant, and this investigation is being completed to facilitate redevelopment. As such, the building will remain vacant until it is demolished, and there are therefore no indoor vapour receptors on the Site. For future use, when compared to future indoor exposure after applying a conservative subslab VAF of 0.02, predicated vapour contamination was identified in three of the five vapour monitoring well locations, with the significant majority of contamination localized in the northern portion of the Site – this is logical, as this area is where soil contamination was identified. This predicted vapour contamination was delineated to the east and south property lines. In addition, a PAAD can be applied to the VAF as described in Protocol 22, and all predicted concentrations are below applicable CSR standards following application of the PAAD. Vapour data before and after applying VAF and PAAD are presented in the Figures and Tables.

5.4 Quality Assurance / Quality Control Results

The RPDs for soil and groundwater samples are presented in **Appendix F**. A duplicate vapour sample was originally collected from vapour probe BH206, but this sample could not be analysed due to unexpected high levels of contaminants causing the thermal desorption tube to be overloaded. As such, no vapour RPDs could be calculated.

Calculated RPDs in soil duplicate samples were with the acceptable range for all parameters analysed. In groundwater, RPDs of approximately 30% were calculated for various BTEX parameters, while other analysed substances were within the acceptable 20% range. The variation in BTEX concentrations could be due to the highly volatile nature of the substances volatilizing at different rates, combined with potential discrepancies in sampling technique. Regardless of the variations, in all cases the results were either both above or both below applicable standards, so the variation did not affect the outcome of this investigation.

As discussed in Appendix C, a performance test and a helium leak test were all within acceptable ranges for each vapour well prior to sampling the first time. Leak tests completed during resampling events were also within acceptable ranges. A summary of the leak tests completed on each well is included in Appendix C. Vacuums measured during purging and the leak test results are included on the field sampling forms in Appendix G.

The laboratory reports were examined to identify potential QA/QC issues and any included notes were reviewed. Holding times of deeper soil samples collected from BH101 were exceeded. Specifically, samples BH101-16, BH101-21, BH101-31, and BH101-40 were analyzed 45 days after collection, while the holding time is 45 days. Given the minimal exceedance of the recommended holding time, this was not thought to have affected the outcome; in fact, of these samples, only BH101-40 was free of contamination. As a double check for depth delineation, samples at greater depths from BH203 were analyzed for the same parameters, and all were found to be free of contamination. As such, the results of the investigation were not affected by this discrepancy.

Based on the implemented QA/QC program, NEXT considers the collected data to accurately characterize the Site. Despite slight variations in contaminant concentrations in groundwater duplicates, the collected data was considered representative of conditions at the Site.

6. CONCLUSIONS AND RECOMMENDATIONS

Soil and groundwater were adequately delineated at the Site. While several PCOCs potentially associated with service stations were not analyzed, the primary PCOCs associated with service station operations were satisfactorily investigated and delineated. In the absence of these primary PCOCs, there is no reason to suspect that secondary PCOCs would be present, and so the conclusions of this DSI are unaffected.

No vapour contamination was identified for current use. Potential vapour contamination was identified and delineated for the future underground parkade, but after application of the Parkade Attenuation Adjustment Divisor ("PAAD") as per Protocol 22, no vapour contamination was predicted. The extent of soil delineation is presented on Figure 4, groundwater delineation on Figure 5, and current and future vapour delineation on Figures 6 and 7, respectively. The following table summarizes all identified contaminants above applicable standards at the Site. Maximum concentrations are shown in brackets. Vapour concentrations are shown after sub-slab attenuation but before application of the PAAD.

AEC	Identified Contaminants of Concern ("ICOCs")			
	Soil	Groundwater	Soil Vapour (Current Use)	Soil Vapour (Future Parkade Use)
AEC 1: Off-Site Petro Canada Service Station	**Benzene** [0.511] **Ethylbenzene** [88.5] **Toluene** [277] **VPHs** [1400] **Xylenes, Total** [543] **Extent of Contamination:** **Area ~160 m²** **Depth ~1 - 32 m**	**Butadiene, 1,3-** [2.4] **Benzene** [243] **Dichloroethane, 1,2-** [343] **Ethylbenzene** [1430] **Toluene** [201] **Trimethylbenzene, 1,3,5-** [179] **Xylenes, Total** [1380] **Extent of Contamination:** **Area ~1000 m²** **Depth ~30m**	None	**Benzene** [260] **Xylenes, Total** [13,200] **Butadiene, 1,3-** [17.6] **Dibromoethane, 1,2-** [2.2] **n-hexane** [60,000] **trimethylbenzene, 1,2,4-** [1,480] **trimethylbenzene, 1,3,5-** [580] **VPHv** [300,000] **Extent of Contamination:** **Area ~1450 m²** **Depth ~9m**

Soil concentrations shown in ug/g, groundwater concentrations in ug/L, and vapour concentrations in ug/m³.

The DSI satisfactorily delineated soil, groundwater, and potential future vapour contamination for this affected parcel. The NEXT CSM has been updated as follows:

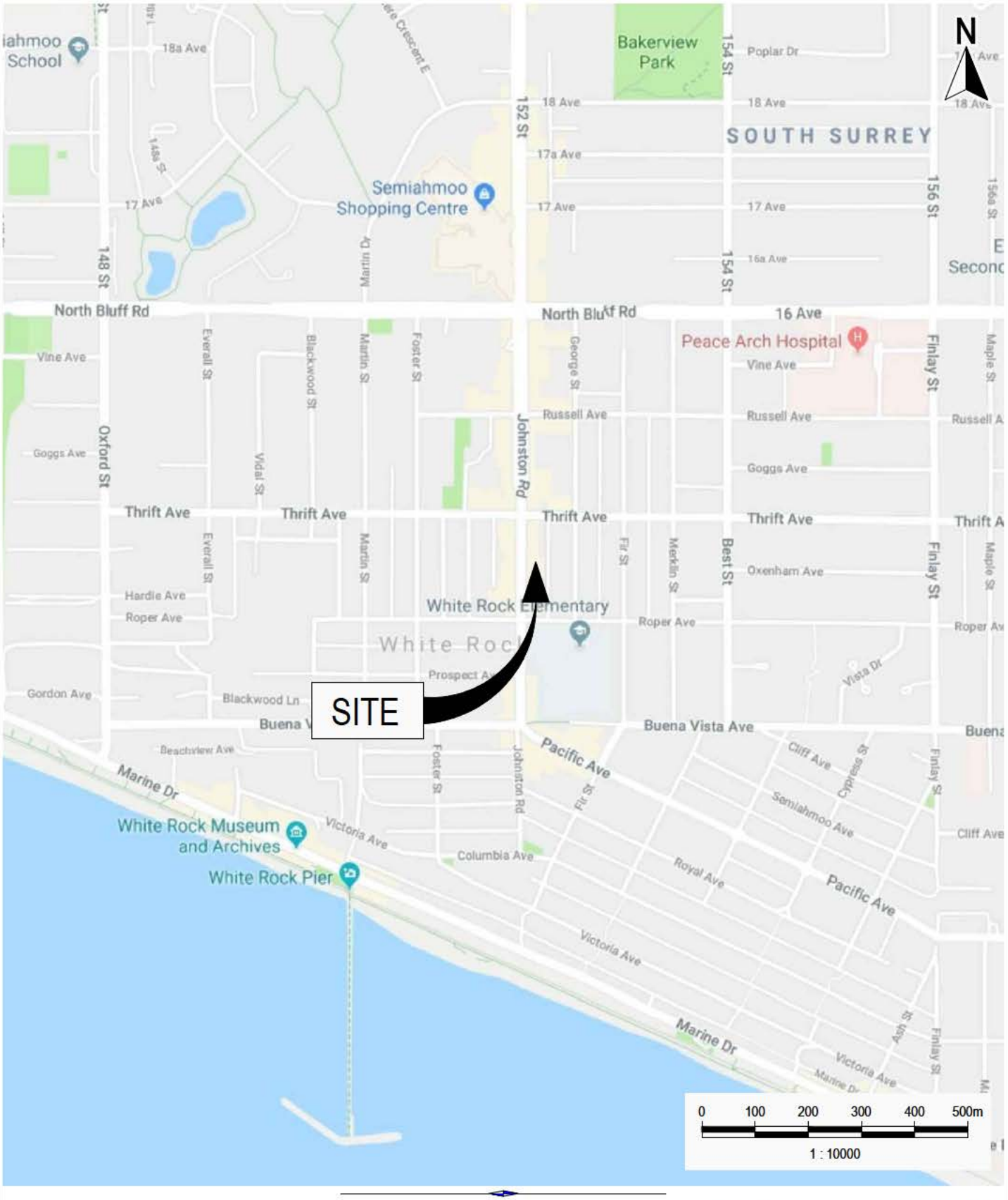
- Subsurface geology and groundwater conditions are far more complex than originally estimated. Groundwater was identified at approximately 30m below ground surface, but this groundwater was found to be perched and only in two of four investigated locations. The regional groundwater table is located at a depth greater than 45m below ground surface.
- Soil contamination was found to extend from a depth of approximately 1m to more than 30m below ground surface at the north end of the Site. This soil contamination did not appear to extend a significant distance in any lateral direction.
- Groundwater contamination is present in the perched water table encountered at the north end of the Site. At the depth of this perched aquifer, groundwater contamination was delineated to the southwest, and groundwater does not extend off-Site to the southeast or south.
- No groundwater was encountered beneath the perched aquifer to a depth of approximately 45m below surface. Given the complex geology encountered at the Site, it is likely that the groundwater and associated contamination found during this DSI exist in relatively small channels within the subsurface which, based on observations as shown on borehole logs, are likely limited in both lateral and vertical extent. As such, groundwater contamination is considered satisfactorily delineated.
- Predicted vapour contamination as discussed above was both delineated to property lines.

NEXT recommends remediation of the Site via the following:

1. Soil contamination to a depth of 9m below surface grade should be removed during redevelopment of the Site. We recommend that we are present during excavation to properly classify the soil and collect confirmatory closure samples.
2. Soil and groundwater contamination at depths greater than 9m below surface grade should be remediated via Screening Level Risk Assessment. This should be completed in short order, to allow for application for a Ministry Release to allow the City of White Rock to issue your Development Permit.
3. Potential vapour contamination must be remediated during construction, through the installation of a mechanical ventilation system designed to provide a minimum of 50 air exchanges per 24 hour period (~2 exchanges per hour).

Figures

SOLTERRA DEVELOPMENT CORP.



DISCLAIMER:
This drawing is part of a NEXT Environmental Inc. report and its use is subject to the limitations expressed in the Compliance Statement of that report.
Original drawing may have features represented in colour.

Detailed Site Investigation

1350 Johnston Road, White Rock, BC

NEXT ENVIRONMENTAL INC.

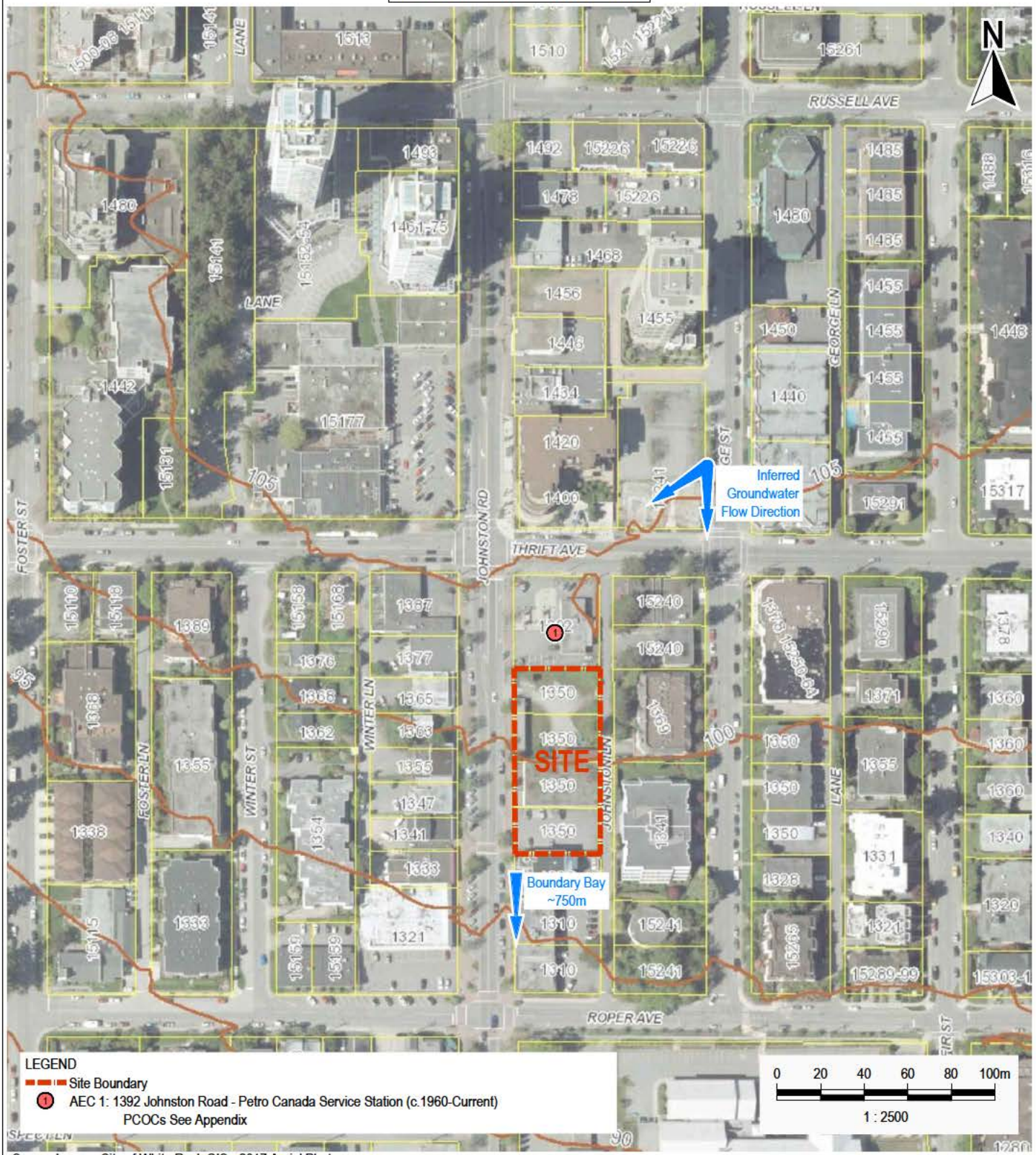
Project No.:	SOL040704
Date:	March 2, 2018
Consultant:	AM
Drawn By:	CS

General Site Location

Figure: 01

FILE: SOL040704-001.DWG

SOLTERRA DEVELOPMENT CORP.



Source Image: City of White Rock GIS - 2017 Aerial Photo

DISCLAIMER:
This drawing is part of a NEXT Environmental Inc. report and its use is subject to the limitations expressed in the Compliance Statement of that report.
Original drawing may have features represented in colour.

Detailed Site Investigation

1350 Johnston Road, White Rock, BC

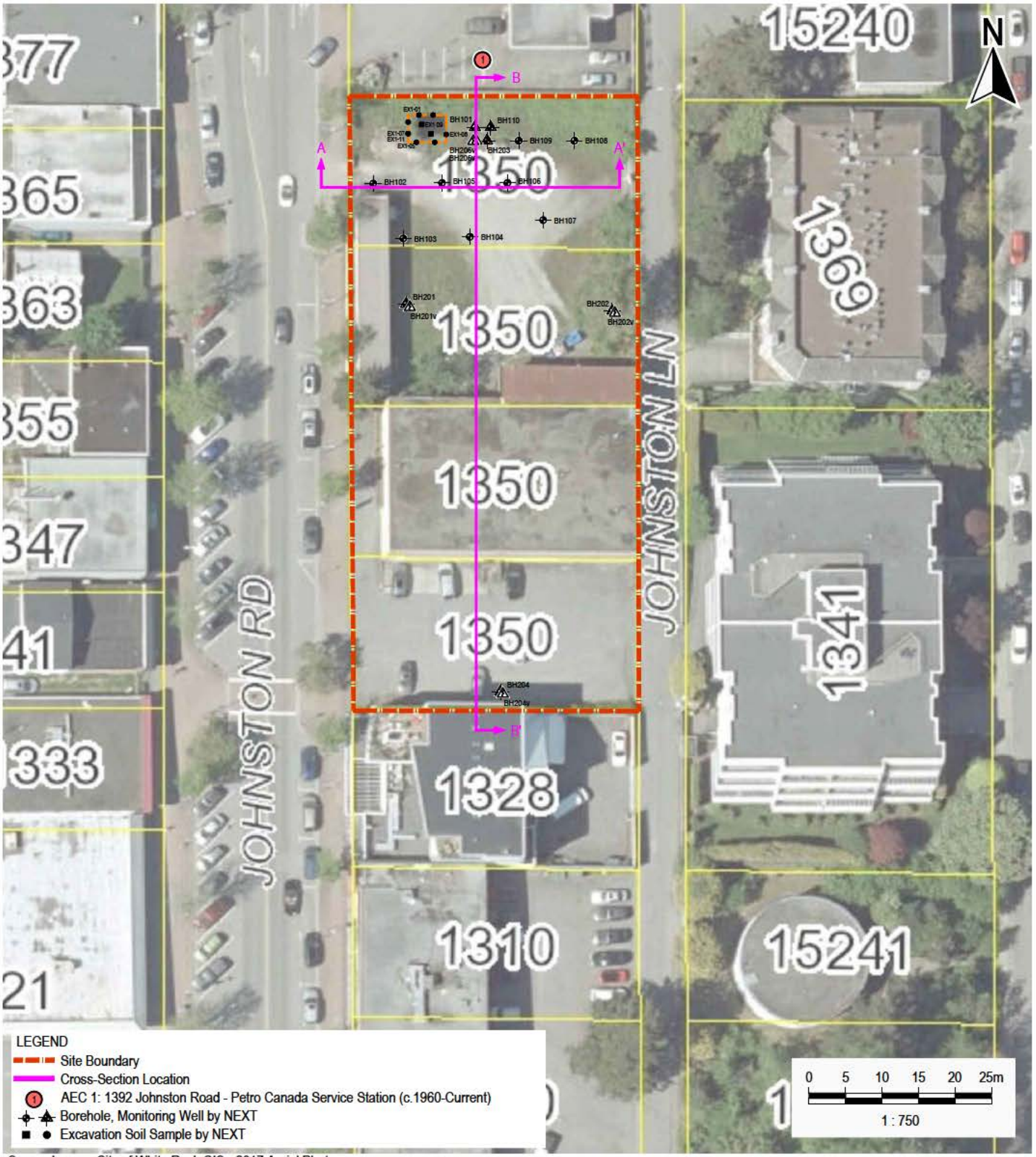
NEXT ENVIRONMENTAL INC.

Project No.:	SOL040704
Date:	March 2, 2018
Consultant:	AM
Drawn By:	CS

Surrounding Land Use Plan Figure: 02

FILE: SOL040704-002.DWG

SOLTERRA DEVELOPMENT CORP.



Source Image: City of White Rock GIS - 2017 Aerial Photo

DISCLAIMER:
This drawing is part of a NEXT Environmental Inc. report and its use is subject to the limitations expressed in the Compliance Statement of that report.
Original drawing may have features represented in colour.

Detailed Site Investigation

1350 Johnston Road, White Rock, BC

NEXT ENVIRONMENTAL INC.

Project No.:	SOL040704
Date:	March 10, 2018
Consultant:	AM
Drawn By:	CS

Site Plan with Investigation and Cross-Section Locations — Figure: 03

FILE: SOL040704-003.DWG

SOLTERRA DEVELOPMENT CORP.

Source Image: City of White Rock GIS - 2017 Aerial Photo

DISCLAIMER:
This drawing is part of a NEXT Environmental Inc. report and its use is subject to the limitations expressed in the Compliance Statement of that report.
Original drawing may have features represented in colour.

Detailed Site Investigation

1350 Johnston Road, White Rock, BC

NEXT ENVIRONMENTAL INC.

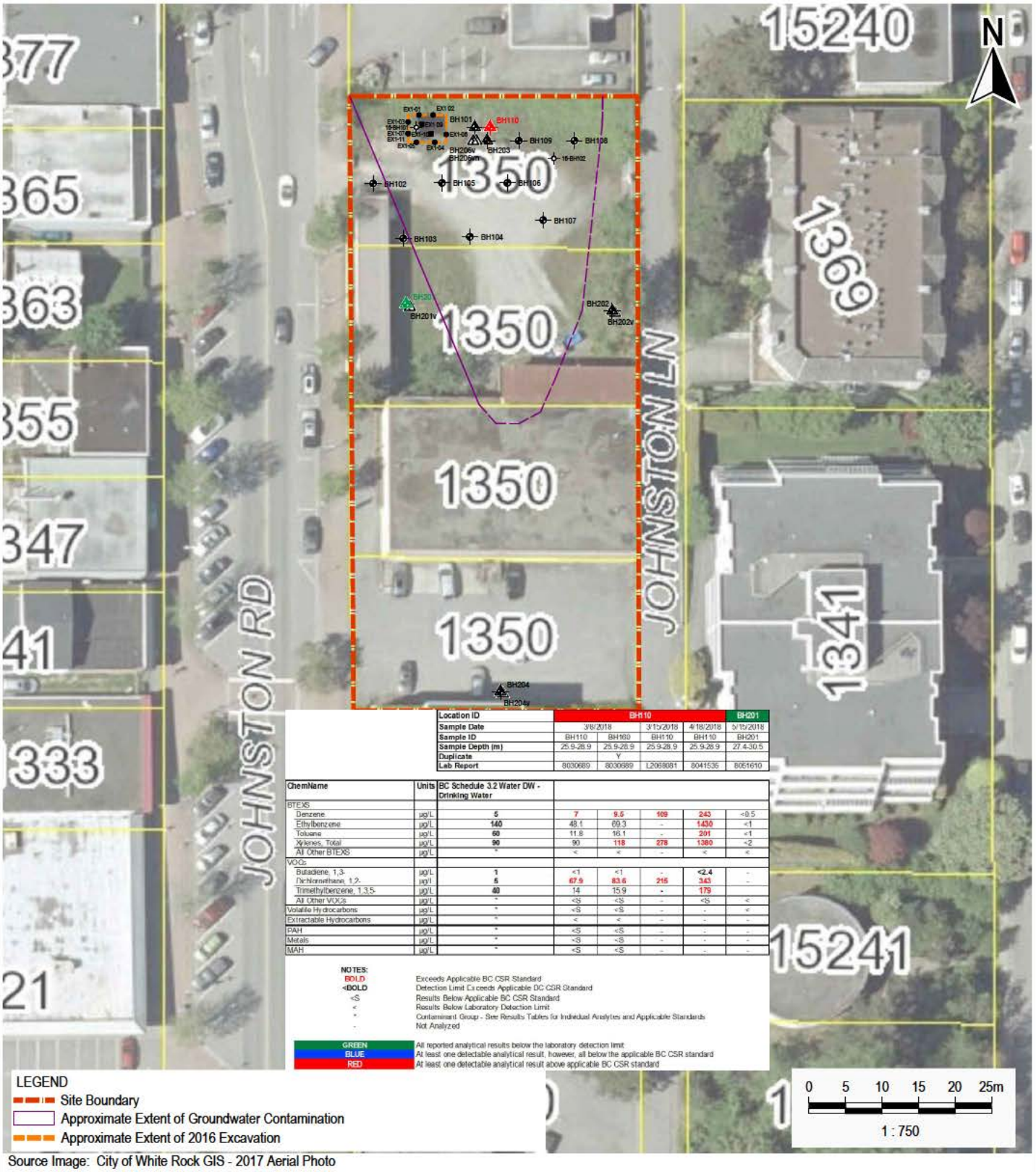
Project No.:	SOL040704
Date:	March 2, 2018
Consultant:	AM
Drawn By:	CS

Soil Analytical Results

Figure: 04

FILE: SOL040704-004.DWG

SOLTERRA DEVELOPMENT CORP.



Location ID	BH110				BH201
Sample Date	3/8/2018		3/15/2018	4/18/2018	5/15/2018
Sample ID	BH110	BH160	BH110	BH110	BH201
Sample Depth (m)	25.9-28.9	25.9-28.9	25.9-28.9	25.9-28.9	27.4-30.5
Duplicate		Y			
Lab Report	8030689	8030689	L2068081	8041536	8051610
ChemName	**Units**	**BC Schedule 3.2 Water DW - Drinking Water**					
BTEXS							
Benzene	µg/L	5	7	9.5	109	243	<0.5
Ethylbenzene	µg/L	140	48.1	69.3	-	1430	<1
Toluene	µg/L	60	11.8	16.1	-	201	<1
Xylenes, Total	µg/L	90	90	118	278	1380	<2
All Other BTEXS	µg/L	*	<	<	-	<	<
VOCs							
Butadiene, 1,3-	µg/L	1	<1	<1	-	<2.4	-
Dichloroethane, 1,2-	µg/L	5	67.9	83.6	215	343	-
Trimethylbenzene, 1,3,5-	µg/L	40	14	15.9	-	179	
All Other VOCs	µg/L	*	<S	<S	-	<S	<
Volatile Hydrocarbons	µg/L	*	<S	<S	-	-	<
Extractable Hydrocarbons	µg/L	*	<	<	-	-	-
PAH	µg/L	*	<S	<S	-	-	-
Metals	µg/L	*	<S	<S	-	-	-
MAH	µg/L	*	<S	<S	-	-	-

NOTES:

BOLD	Exceeds Applicable BC CSR Standard
<BOLD	Detection Limit Exceeds Applicable BC CSR Standard
<S	Results Below Applicable BC CSR Standard
<	Results Below Laboratory Detection Limit
*	Contaminant Group - See Results Tables for Individual Analytes and Applicable Standards
-	Not Analyzed
GREEN	All reported analytical results below the laboratory detection limit
BLUE	At least one detectable analytical result, however, all below the applicable BC CSR standard
RED	At least one detectable analytical result above applicable BC CSR standard

LEGEND

- Site Boundary
- Approximate Extent of Groundwater Contamination
- Approximate Extent of 2016 Excavation

Source Image: City of White Rock GIS - 2017 Aerial Photo

DISCLAIMER:
This drawing is part of a NEXT Environmental Inc. report and its use is subject to the limitations expressed in the Compliance Statement of that report.
Original drawing may have features represented in colour.

Detailed Site Investigation

1350 Johnston Road, White Rock, BC

NEXT ENVIRONMENTAL INC.

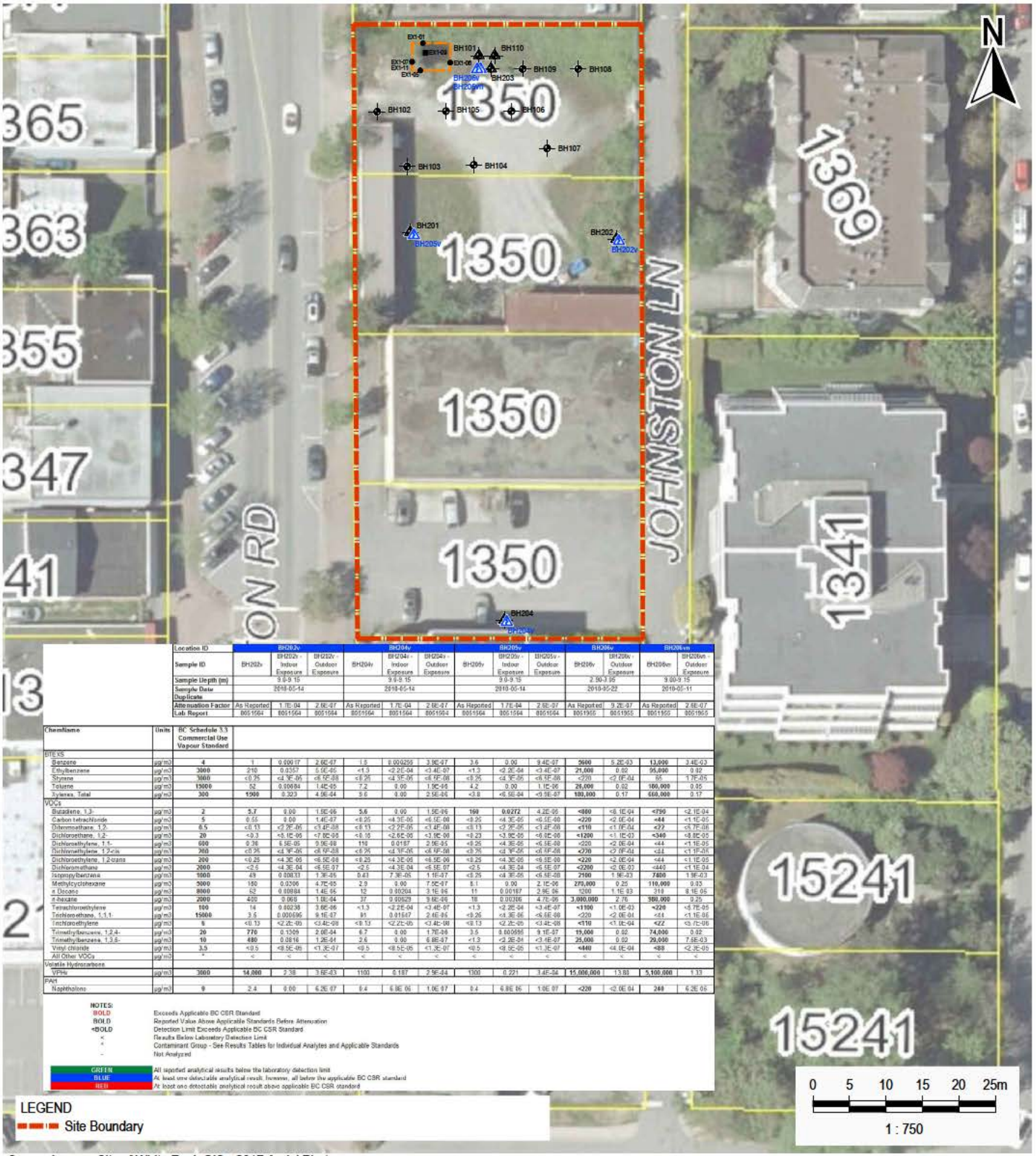
Project No.:	SOL040704
Date:	March 2, 2018
Consultant:	AM
Drawn By:	CS

Groundwater Analytical Results

Figure: 05

FILE: SOL040704-003.DWG

SOLTERRA DEVELOPMENT CORP.



Location ID	BH202v			BH204v			BH205v			BH206v		BH206vm	
Sample ID	BH202v	BH202v - Indoor Exposure	BH202v - Outdoor Exposure	BH204v	BH204v - Indoor Exposure	BH204v - Outdoor Exposure	BH205v	BH205v - Indoor Exposure	BH205v - Outdoor Exposure	BH206v	BH206v - Outdoor Exposure	BH206vm	BH206vm - Outdoor Exposure
Sample Depth (m)		3.0-3.15			3.0-3.15			3.0-3.15			2.90-3.05		3.00-3.15
Sample Date		2018-05-14			2018-05-14			2018-05-14			2018-05-22		2018-05-11
Duplicate													
Attenuation Factor	As Reported	1.7E-04	2.6E-07	As Reported	1.7E-04	2.6E-07	As Reported	1.7E-04	2.6E-07	As Reported	9.2E-07	As Reported	2.6E-07
Lab Report	B051564	B051564	B051564	B051564	B051564	B051564	B051564	B051564	B051564	B051955	B051955	B051955	B051955

ChemName	Units	BC Schedule 3.3 Commercial Use Vapour Standard												
BTEXS														
Benzene	µg/m3	4	1	0.00017	2.6E-07	1.5	0.000255	3.9E-07	3.6	0.00	9.4E-07	2600	5.2E-03	13,000	3.4E-03
Ethylbenzene	µg/m3	3000	210	0.0357	5.5E-05	<1.3	<2.2E-04	<3.4E-07	<1.3	<2.2E-04	<3.4E-07	21,000	0.02	95,000	0.02
Styrene	µg/m3	1000	<0.25	<4.3E-05	<6.5E-08	<6.25	<4.3E-05	<6.5E-08	<6.25	<4.3E-05	<6.5E-08	<220	<2.0E-04	65	1.7E-05
Toluene	µg/m3	13000	52	0.00884	1.4E-05	7.2	0.00	1.9E-06	4.2	0.00	1.1E-06	26,000	0.02	100,000	0.05
Xylenes, Total	µg/m3	300	1900	0.323	4.9E-04	5.6	0.00	2.5E-06	<3.8	<6.5E-04	<9.9E-07	180,000	0.17	660,000	0.17
VOCs														
Butadiene, 1,3-	µg/m3	2	5.7	0.00	1.5E-06	5.6	0.00	1.5E-06	160	0.0272	4.2E-06	<880	<6.1E-04	<790	<2.1E-04
Carbon tetrachloride	µg/m3	5	0.55	0.00	1.4E-07	<6.25	<4.3E-05	<6.5E-08	<6.25	<4.3E-05	<6.5E-08	<220	<2.0E-04	<44	<1.1E-05
Dibromomethane, 1,2-	µg/m3	8.5	<0.13	<2.2E-05	<3.4E-08	<6.13	<2.2E-05	<3.4E-08	<6.13	<2.2E-05	<3.4E-08	<110	<1.0E-04	<22	<5.7E-06
Dichloroethane, 1,2-	µg/m3	20	<0.3	<5.1E-05	<7.8E-08	<6.15	<2.6E-05	<3.9E-08	<6.23	<3.9E-05	<6.0E-08	<1200	<1.1E-03	<340	<8.8E-05
Dichloroethylene, 1,1-	µg/m3	600	0.36	6.5E-05	9.9E-08	116	0.0167	2.5E-06	<6.25	<4.3E-05	<6.5E-08	<220	<2.0E-04	<44	<1.1E-05
Dichloroethylene, 1,2-cis	µg/m3	300	<0.25	<4.3E-05	<6.5E-08	<6.25	<4.3E-05	<6.5E-08	<6.25	<4.3E-05	<6.5E-08	<220	<2.0E-04	<44	<1.1E-05
Dichloroethylene, 1,2-trans	µg/m3	200	<0.25	<4.3E-05	<6.5E-08	<6.25	<4.3E-05	<6.5E-08	<6.25	<4.3E-05	<6.5E-08	<220	<2.0E-04	<44	<1.1E-05
Dichloromethane	µg/m3	2000	<2.5	<4.3E-04	<6.5E-07	<2.5	<4.3E-04	<6.5E-07	<2.5	<4.3E-04	<6.5E-07	<2200	<2.0E-03	<440	<1.1E-04
Isopropylbenzene	µg/m3	1000	49	0.00833	1.3E-05	0.43	7.3E-05	1.1E-07	<6.25	<4.3E-05	<6.5E-08	2100	1.9E-03	7400	1.9E-03
Methylcyclohexane	µg/m3	5000	180	0.0306	4.7E-05	2.9	0.00	7.5E-07	5.1	0.00	2.1E-06	270,000	0.25	110,000	0.03
n Decane	µg/m3	8000	52	0.00884	1.4E-05	12	0.00204	3.1E-06	11	0.00187	2.9E-06	1200	1.1E-03	310	8.1E-05
n-hexane	µg/m3	2000	400	0.068	1.0E-04	37	0.00629	9.6E-06	18	0.00306	4.7E-06	3,000,000	2.76	980,000	0.25
Tetrachloroethylene	µg/m3	100	14	0.00238	3.6E-06	<1.3	<2.2E-04	<3.4E-07	<1.3	<2.2E-04	<3.4E-07	<1100	<1.0E-03	<220	<5.7E-05
Trichloroethane, 1,1,1-	µg/m3	15000	3.5	0.000595	9.1E-07	91	0.01547	2.4E-05	<6.25	<4.3E-05	<6.5E-08	<220	<2.0E-04	<44	<1.1E-05
Trichloroethylene	µg/m3	5	<0.13	<2.2E-05	<3.4E-08	<6.13	<2.2E-05	<3.4E-08	<6.13	<2.2E-05	<3.4E-08	<110	<1.0E-04	<22	<5.7E-06
Trimethylbenzene, 1,2,4-	µg/m3	20	770	0.1309	2.0E-04	6.7	0.00	1.7E-06	3.5	0.000595	9.1E-07	15,000	0.02	74,000	0.02
Trimethylbenzene, 1,3,5-	µg/m3	10	480	0.0816	1.2E-04	2.6	0.00	6.6E-07	<1.3	<2.2E-04	<3.4E-07	25,000	0.02	29,000	7.5E-03
Vinyl chloride	µg/m3	3.5	<0.5	<8.5E-05	<1.3E-07	<0.5	<8.5E-05	<1.3E-07	<0.5	<8.5E-05	<1.3E-07	<440	<4.0E-04	<88	<2.3E-05
All Other VOCs	µg/m3	*	<	<	<	<	<	<	<	<	<	<	<	<	<
Volatile Hydrocarbons														
VPHs	µg/m3	3000	14,000	2.38	3.6E-03	1100	0.187	2.9E-04	1300	0.221	3.4E-04	15,000,000	13.88	5,100,000	1.33
PAH														
Naphthalene	µg/m3	9	2.4	0.00	6.2E-07	0.4	6.8E-05	1.0E-07	0.4	6.8E-05	1.0E-07	<220	<2.0E-04	240	6.2E-05

NOTES:
- **BOLD** — Exceeds Applicable BC CSR Standard
- BOLD — Reported Value Above Applicable Standards Before Attenuation
- *BOLD — Detection Limit Exceeds Applicable BC CSR Standard
- < — Results Below Laboratory Detection Limit
- * — Contaminant Group - See Results Tables for Individual Analytes and Applicable Standards
- - — Not Analyzed

- GREEN — All reported analytical results below the laboratory detection limit
- BLUE — At least one detectable analytical result, however, all below the applicable BC CSR standard
- RED — At least one detectable analytical result above applicable BC CSR standard

LEGEND
- Site Boundary

Source Image: City of White Rock GIS - 2017 Aerial Photo

DISCLAIMER:
This drawing is part of a NEXT Environmental Inc. report and its use is subject to the limitations expressed in the Compliance Statement of that report.
Original drawing may have features represented in colour.

Detailed Site Investigation

1350 Johnston Road, White Rock, BC

NEXT ENVIRONMENTAL INC.

Project No.:	SOL040704
Date:	March 10, 2018
Consultant:	AM
Drawn By:	CS

Vapour Analytical Results (Current Use)

Figure: 07

FILE: SOL040704-007.DWG

SOLTERRA DEVELOPMENT CORP.

Location ID	BH202v			BH204v			BH205v			BH206v			BH206va		
Sample ID	BH202V	BH202v - Indoor Exposure	BH202v - Parkade Exposure	BH204V	BH204v - Indoor Exposure	BH204v - Parkade Exposure	BH205V	BH205v - Indoor Exposure	BH205v - Parkade Exposure	BH206V	BH206v - Indoor Exposure	BH206v - Parkade Exposure	BH206VA	BH206va - Indoor Exposure	BH206va - Parkade Exposure
Sample Depth (m)		5.0-5.15			5.0-5.15			5.0-5.15			2.60-3.05			5.00-5.15	
Sample Date		2018-03-14			2018-03-14			2018-03-14			2018-03-22			2018-03-11	
Duplicate															
Attenuation Factor	As Measured	0.02	4.0E-04	As Measured	0.02	4.0E-04	As Measured	0.02	4.0E-04	As Measured	0.02	4.0E-04	As Measured	0.02	4.0E-04
Lab Report	B057364	B057364	B057364	B057364	B057364	B057364	B057364	B057364	B057364	B057365	B057365	B057365	B057365	B057365	B057365

Chemical	Units	BC Schedule 3.3 Parkade Use Vapour Standard													
BTEXS															
Benzene	µg/m3	10	1	0.02	4.0E-04	1.0	0.03	0.0E-04	3.0	0.07	1.4E-03	5600	112	2.24	13,000	260	0.2
Ethylbenzene	µg/m3	8000	210	4.2	0.08	<1.3	<2.6E-02	<5.2E-04	<1.3	<2.6E-02	<5.2E-04	21,000	420	8.4	96,000	1900	38
Styrene	µg/m3	8000	<0.26	<5.0E-03	<1.0E-04	<0.26	<5.0E-03	<1.0E-04	<0.26	<5.0E-03	<1.0E-04	<220	<4.4	<8.8E-02	65	1.3	0.03
Toluene	µg/m3	40000	53	1.04	0.02	7.2	0.14	2.9E-03	4.2	0.08	1.7E-03	25,000	520	10.4	180,000	3600	72
Xylenes, Total	µg/m3	800	9000	180	3.76	9.6	0.19	3.9E-03	<1.8	<7.4E-02	<1.4E-03	680,000	5600	112	680,000	41000	842
VOCs															
Butadiene, 1,3-	µg/m3	2.5	5.7	0.11	2.3E-03	5.6	0.11	2.2E-03	160	3.2	0.06	4800	417.6	<3.5E-01	4750	415.8	<3.2E-01
Carbon tetrachloride	µg/m3	10	0.53	0.01	2.0E-04	<0.25	<5.0E-03	<1.0E-04	<0.25	<5.0E-03	<1.0E-04	<220	<4.4	<8.8E-02	<44	<8.8E-01	<1.6E-02
Dibromoethane, 1,2-	µg/m3	0.5	<0.13	<2.6E-03	<5.2E-05	<0.13	<2.6E-03	<5.2E-05	<0.13	<2.6E-03	<5.2E-05	<110	<2.2	<4.4E-02	<22	<4.4E-01	<8.8E-03
Dichloroethane, 1,2-	µg/m3	50	<0.3	<6.0E-03	<1.2E-04	<0.15	<3.0E-03	<6.0E-05	<0.23	<4.6E-03	<9.2E-05	<1200	<24.0	<4.8E-01	<340	<6.8	<1.4E-01
Dichloroethylene, 1,1-	µg/m3	1500	0.38	7.6E-03	1.5E-04	110	2.2	0.04	<0.26	<5.0E-03	<1.0E-04	<220	<4.4	<8.8E-02	<44	<8.8E-01	<1.6E-02
Isopropylbenzene	µg/m3	3000	48	0.96	0.02	0.43	8.6E-03	1.7E-04	<0.26	<5.0E-03	<1.0E-04	2100	42	0.84	7400	148	2.96
Methylcyclohexane	µg/m3	16000	120	2.4	0.07	3.0	0.06	1.2E-03	9.1	0.18	3.6E-03	370,000	6400	108	140,000	2800	44
n-Decane	µg/m3	20000	52	1.04	0.02	12	0.24	4.8E-03	11	0.22	4.4E-03	1200	24	0.48	310	6.2	0.12
n-Hexane	µg/m3	5500	400	8	0.16	37	0.74	0.01	18	0.36	7.2E-03	3,000,000	60000	1200	980,000	19600	392
Tetrachloroethylene	µg/m3	300	14	0.28	5.6E-03	<1.3	<2.6E-02	<5.2E-04	<1.3	<2.6E-02	<5.2E-04	<1100	<22.0	<4.4E-01	<220	<4.4	<8.8E-02
Trichloroethane, 1,1,1-	µg/m3	40000	3.5	0.07	1.4E-03	91	1.82	0.04	<0.25	<5.0E-03	<1.0E-04	<220	<4.4	<8.8E-02	<44	<8.8E-01	<1.8E-02
Trichloroethylene	µg/m3	15	<0.13	<2.6E-03	<5.2E-05	<0.13	<2.6E-03	<5.2E-05	<0.13	<2.6E-03	<5.2E-05	<110	<2.2	<4.4E-02	<22	<4.4E-01	<8.8E-03
Trimethylbenzene, 1,2,4-	µg/m3	55	770	15.4	0.31	8.7	0.13	2.7E-03	3.5	0.07	1.4E-03	15,000	300	7.90	74,000	1480	29.6
Trimethylbenzene, 1,3,5-	µg/m3	25	400	8.0	0.19	2.6	0.05	1.0E-03	<1.3	<2.6E-02	<5.2E-04	25,000	500	10	25,000	500	11.00
Vinyl chloride	µg/m3	0	<0.8	<1.6E-02	<3.0E-04	<0.8	<1.6E-02	<3.0E-04	<0.8	<1.6E-02	<3.0E-04	<440	<8.8	<1.8E-01	<88	<1.8	<3.6E-02
All Other VOCs	µg/m3	*	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Volatile Hydrocarbons															
VPHs	µg/m3	8000	14,000	280	5.60	1100	22	0.44	1300	26	0.52	15,000,000	300000	6000	5,150,000	103000	2040
PAH															
Naphthalene	µg/m3	35	0.4	0.08	1.6E-04	0.4	8.0E-03	1.6E-04	0.4	8.0E-03	1.6E-04	<220	<4.4	<8.8E-02	340	6.8	0.14

NOTES:
- **BOLD** — Exceeds Applicable BC CSR Standard
- **BOLD** — Reported Value Above Applicable Standards Before Attenuation
- **<BOLD** — Detection Limit Exceeds Applicable BC CSR Standard
- < — Results Below Laboratory Detection Limit
- * — Contaminant Group - See Results Tables for Individual Analytes and Applicable Standards
- - — Not Analyzed

- GREEN — All reported analytical results below the laboratory detection limit
- BLUE — At least one detectable analytical result, however, all below the applicable BC CSR standard
- RED — At least one detectable analytical result above applicable BC CSR standard

LEGEND
- Site Boundary
- Approximate Extent of Potential Future Parkade Vapour Contamination

Source Image: City of White Rock GIS - 2017 Aerial Photo

DISCLAIMER:
This drawing is part of a NEXT Environmental Inc. report and its use is subject to the limitations expressed in the Compliance Statement of that report.
Original drawing may have features represented in colour.

Detailed Site Investigation

1350 Johnston Road, White Rock, BC

NEXT ENVIRONMENTAL INC.

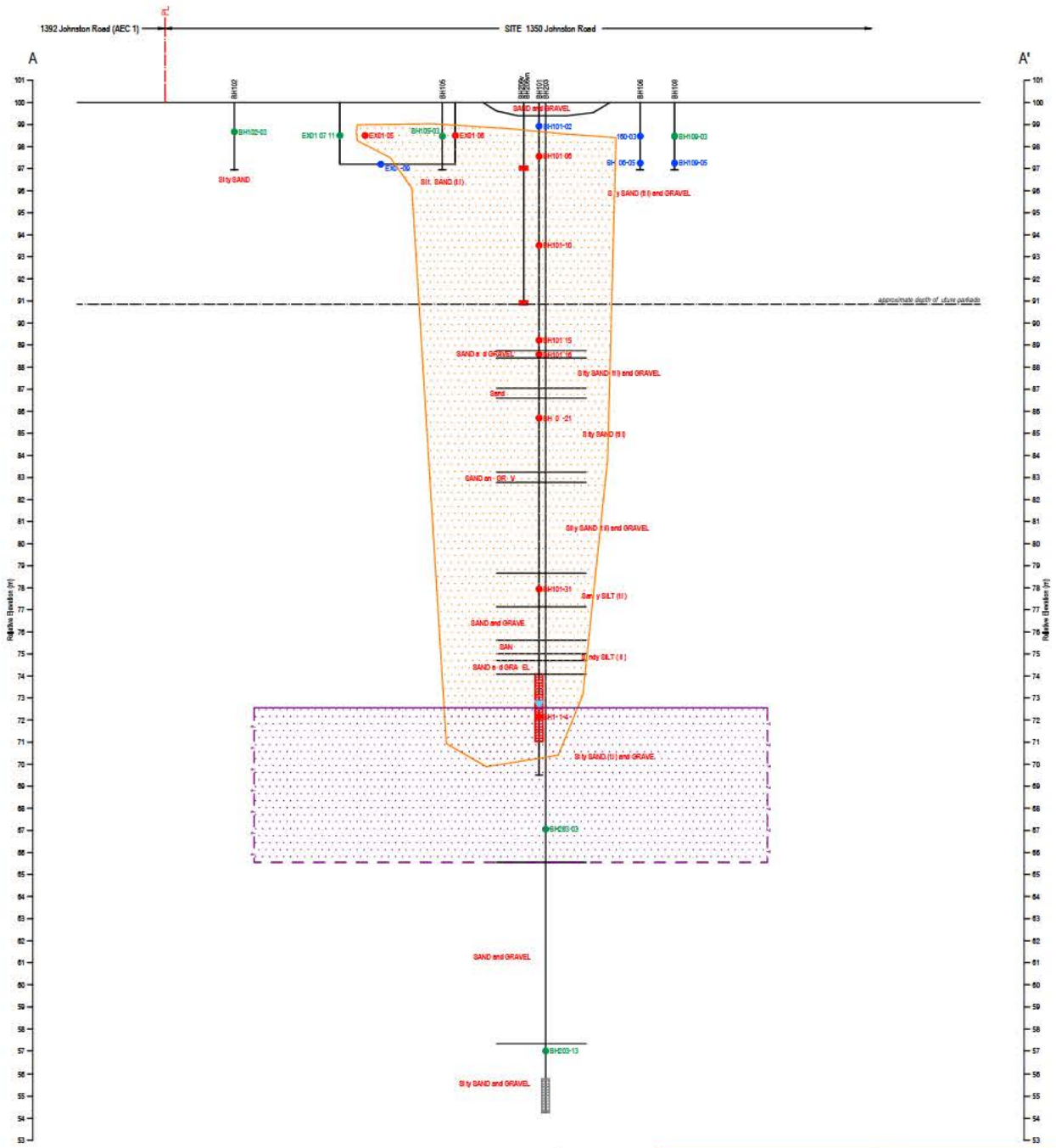
Project No.:	SOL040704
Date:	March 10, 2018
Consultant:	AM
Drawn By:	CS

Vapour Analytical Results (Future Use)

Figure: 08

FILE: SOL040704-008.DWG

Solterra Development Corp.



Soil Analytical Results
BC CSR Schedule 3.1 Commercial Standards

Location ID	BH101										BH102	BH105	BH106		BH109		BH203			EX1				
Sample Date	2/16/2018									2/20/2018	2/20/2018	2/20/2018	2/20/2018		2/20/2018		5/10/2018			4/18/2016				
Sample ID	BH101-02	BH101-06	BH101-10	BH101-45	BH101-13	BH101-15	BH101-16	BH101-21	BH101-31	BH101-40	BH102-03	BH105-03	BH106-03	BH106-05	BH109-03	BH109-05	BH203-03	BH203-13	BH203-63	EX1-05	EX1-06	EX1-07	EX1-11	EX1-09
Sample Depth	0.91-1.22	2.29-2.59	6.1-6.86	6.1-6.86	8.53-9.14	10.67-10.99	11.28-11.58	14.18-14.41	21.95-22.17	27.74-27.96	1.22-1.83	1.22-1.83	1.22-1.83	2.44-3.05	1.22-1.83	2.44-3.05	32.8-33.1	42.6-43.1	42.6-43.1	1.5	1.5	1.5	1.5	2.8
Duplicate																			Y				Y	
Soil Type	Silty SAND (fill)	Silty SAND (fill)	Silty SAND (fill)	Silty SAND (fill)	Silty SAND (fill)	Silty SAND (fill)	SAND and GRAVEL	Silty SAND (fill)	Sandy SILT (fill)	Silty SAND (fill) and GRAVEL	Silty SAND (fill)	Silty SAND (fill)	Silty SAND (fill)	Silty SAND (fill)	Silty SAND (fill)	Silty SAND (fill)	Silty sand and gravel (fill)	Silty sand and gravel	Silty sand and gravel	SILT	SILT	SILT	SILT	SILT
Lab Report	8021267	8021267	8021267	8021267	8021267	8021267	8021267	8021267	8021267	8021493	8021493	8021493	8021493	8021493	8021493	8021493	8051105	8051105	8051105	B628769	B628769	B628769	B628769	B628769

ChemName	Units	BC Schedule 3.1 Part 1 CL - GW used for drinking water	BC Schedule 3.1 Part 1 CL - Intake of contaminated soil	BC Schedule 3.1 Part 1 CL - Toxicity to soil invertebrates and plants	BC Schedule 3.1 Part 2 CL - Human Health Soil Commercial	BC Schedule 3.1 Part 3 CL - Ecological Health Soil Commercial																					
BTEXS																											
Benzene	µg/g	0.035	1000	250			<0.02	<0.474	0.053	0.049	<0.02	0.134	0.039	0.356	0.511	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.021	<0.014	<0.005	<0.005	<0.005
Ethylbenzene	µg/g	15	25,000	650			0.223	86.5	0.093	0.082	-	0.089	-	0.064	0.293	0.139	<0.05	<0.05	<0.05	<0.05	<0.05	0.424	<0.05	<0.05	<0.05	7.9	2	<0.01	<0.01	0.17
Toluene	µg/g	6	26,000	450			<0.2	277	<0.2	<0.2	-	<0.2	-	0.247	0.902	0.678	<0.2	<0.2	<0.2	<0.2	<0.2	0.353	<0.2	<0.2	<0.2	0.006	0.13	<0.02	<0.02	0.089
Xylenes, Total	µg/g	6.5	50,000	600			1.51	543	0.39	0.309	-	0.236	-	0.345	0.288	0.159	<0.1	<0.1	<0.1	<0.1	<0.1	2.89	<0.1	<0.1	<0.1	53	13	<0.04	<0.04	1.2
All Other BTEXS	µg/g	*	*	*	*	*	<	<	<	<	-	<	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
VOCs	µg/g	*	*	*	*	*	<	<	<	<	-	<	-	<	<	<S	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Volatile Hydrocarbons																													
VPHs	µg/g				200	200	100	1400	<20	<20	-	<20	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	1100	520	<10	<10	<10
Extractable Hydrocarbons	µg/g	*	*	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<S	<S	<	-	<S
PAH	µg/g	*	*	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<S	<S	<	-	<S
Glycols	µg/g	*	*	*	*	*	<	<	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Location ID	BH110			
Sample Date	3/8/2018		3/15/2018	4/18/2018
Sample ID	BH110	BH160	BH110	BH110
Sample Depth (m)	25.9-28.9	25.9-28.9	25.9-28.9	25.9-28.9
Duplicate		Y		
Lab Report	8030689	8030689	L2068081	8041535

Vapour Analytical Results
BC CSR Schedule 3.3 Standards
Future Parkade Use

Location ID	BH206v			BH206vn		
Sample ID	BH206v	BH206v - Indoor Exposure	BH206v - Parkade Exposure	BH206vn	BH206vn - Indoor Exposure	BH206vn - Parkade Exposure
Sample Depth (m)	2.90-3.05			9.00-9.15		
Sample Date	2018-05-22			2018-05-11		
Duplicate						
Attenuation Factor	As Reported	0.02	4.0E-04	As Reported	0.02	4.0E-04
Lab Report	8051955	8051955	8051955	8051955	8051955	8051955

ChemName	Units	BC Schedule 3.2 Water DW - Drinking Water				
BTEXS						
Benzene	µg/L	5	7	9.5	109	243
Ethylbenzene	µg/L	140	48.1	69.3	-	1430
Toluene	µg/L	60	11.8	16.1	-	201
Xylenes, Total	µg/L	90	90	118	278	1380
All Other BTEXS	µg/L	*	<	<	-	<
VOCs						
Butadiene, 1,3-	µg/L	1	<1	<1	-	<2.4
Dichloroethane, 1,2-	µg/L	5	67.9	83.6	215	343
Trimethylbenzene, 1,3,5-	µg/L	40	14	15.9	-	179
All Other VOCs	µg/L	*	<S	<S	-	<S
Volatile Hydrocarbons	µg/L	*	<S	<S	-	-
Extractable Hydrocarbons	µg/L	*	<	<	-	-
PAH	µg/L	*	<S	<S	-	-
Metals	µg/L	*	<S	<S	-	-
MAH	µg/L	*	<S	<S	-	-

ChemName	Units	BC Schedule 3.3 Parkade Use Vapour Standard						
BTEXS								
Benzene	µg/m3	10	5600	112	2.24	13,000	260	5.2
Ethylbenzene	µg/m3	8000	21,000	420	8.4	95,000	1900	38
Styrene	µg/m3	8000	<220	<4.4	<8.8E-02	65	1.3	0.03
Toluene	µg/m3	40000	26,000	520	10.4	180,000	3600	72
Xylenes, Total	µg/m3	800	180,000	3600	72	660,000	13200	264
VOCs								
Butadiene, 1,3-	µg/m3	2.5	<880	<17.6	<3.5E-01	<790	<15.8	<3.2E-01
Carbon tetrachloride	µg/m3	15	<220	<4.4	<8.8E-02	<44	<8.8E-01	<1.8E-02
Dibromoethane, 1,2-	µg/m3	0.5	<110	<2.2	<4.4E-02	<22	<4.4E-01	<8.8E-03
Dichloroethane, 1,2-	µg/m3	55	<1200	<24.0	<4.8E-01	<340	<6.8	<1.4E-01
Isopropylbenzene	µg/m3	3000	2100	42	0.84	7400	148	2.96
Methylcyclohexane	µg/m3	15000	270,000	5400	108	110,000	2200	44
n-Decane	µg/m3	20000	1200	24	0.48	310	6.2	0.12
n-hexane	µg/m3	5500	3,000,000	60000	1200	980,000	19600	392
Tetrachloroethylene	µg/m3	300	<1100	<22.0	<4.4E-01	<220	<4.4	<8.8E-02
Trichloroethylene	µg/m3	15	<110	<2.2	<4.4E-02	<22	<4.4E-01	<8.8E-03
Trimethylbenzene, 1,2,4-	µg/m3	55	19,000	380	7.60	74,000	1480	29.6
Trimethylbenzene, 1,3,5-	µg/m3	25	25,000	500	10	29,000	580	11.60
Vinyl chloride	µg/m3	9	<440	<8.8	<1.8E-01	<88	<1.8	<3.5E-02
All Other VOCs	µg/m3	*	<	<	<	<	<	<
Volatile Hydrocarbons								
VPHv	µg/m3	8000	15,000,000	300000	6000	5,100,000	102000	2040
PAH								
Naphthalene	µg/m3	25	<220	<4.4	<8.8E-02	240	4.8	0.10

NOTES:

BOLD	Exceeds Applicable BC CSR Standard
<BOLD	Detection Limit Exceeds Applicable BC CSR Standard
<S	Results Below Applicable BC CSR Standard
<	Results Below Laboratory Detection Limit
*	Contaminant Group - See Results Tables for Individual Analytes and Applicable Standards
-	Not Analyzed

GREEN	All reported analytical results below the laboratory detection limit
BLUE	At least one detectable analytical result, however, all below the applicable BC CSR standard
RED	At least one detectable analytical result above applicable BC CSR standard

NOTES:

BOLD	Exceeds Applicable BC CSR Standard
BOLD	Reported Value Above Applicable Standards Before Attenuation
<BOLD	Detection Limit Exceeds Applicable BC CSR Standard
<	Results Below Laboratory Detection Limit
*	Contaminant Group - See Results Tables for Individual Analytes and Applicable Standards
-	Not Analyzed

GREEN	All reported analytical results below the laboratory detection limit
BLUE	At least one detectable analytical result, however, all below the applicable BC CSR standard
RED	At least one detectable analytical result above applicable BC CSR standard

Detailed Site Investigation

1350 Johnston Rd., White Rock, BC

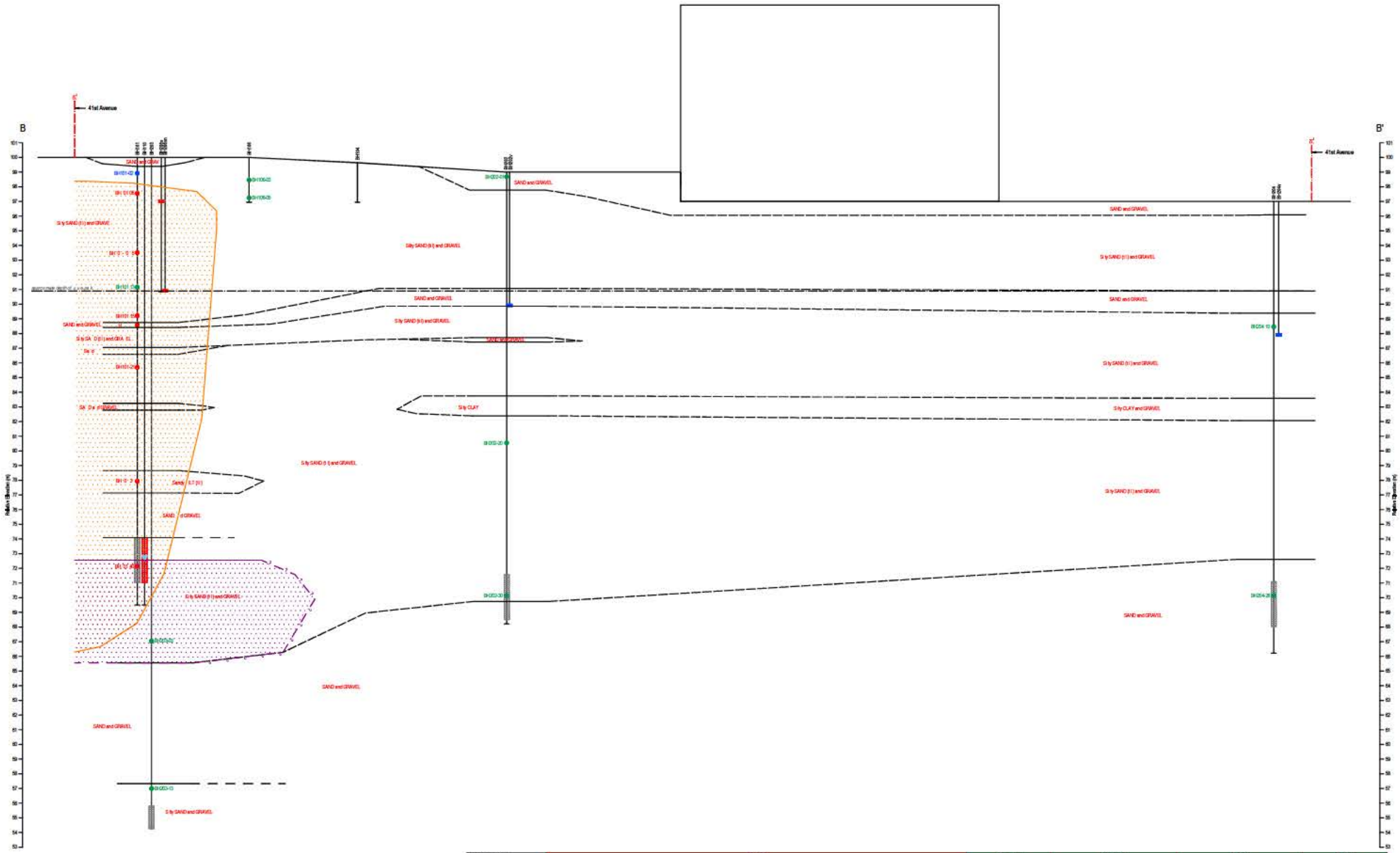
NEXT ENVIRONMENTAL INC.

Project No.: SOL040704
Date: May 31, 2018
Consultant: AM/JC
Drawn By: CS

Cross-Section A-A' Figure: 08

FILE: SOL040704-008.DWG

Solterra Development Corp.



Soil Analytical Results
BC CSR Schedule 3.1 Commercial Standards

Location ID	BH101										BH106		BH202			BH203			BH204	
Sample Date	2/16/2018									2/20/2018	2/20/2018		5/9/2018			5/10/2018			5/11/2018	
Sample ID	BH101-02	BH101-05	BH101-10	BH101-45	BH101-13	BH101-15	BH101-16	BH101-21	BH101-31	BH101-46	BH106-03	BH106-05	BH202-01	BH202-20	BH202-30	BH203-03	BH203-13	BH203-23	BH204-10	BH204-38
Sample Depth	0.91-1.22	2.29-2.59	6.1-6.86	6.1-6.86	8.53-9.14	10.67-10.89	11.28-11.58	14.18-14.41	21.95-22.17	27.74-27.96	1.22-1.83	2.44-3.05	0.15-0.46	18.3-18.6	28.7-29	32.8-33.1	42.8-43.1	42.8-43.1	6.38-8.69	26.7-27
Duplicate				Y														Y		
Soil Type	Silty SAND (till)	Silty SAND (till)	Silty SAND (till)	Silty SAND (till)	Silty SAND (till)	Silty SAND (till)	SAND and GRAVEL	Silty SAND (till)	Sandy SILT (till)	Silty SAND (till) and GRAVEL	Silty SAND (till)	Silty SAND (till)	Sand and gravel	Silty sand and gravel	Silty sand and gravel	Silty sand and gravel (till)	Silty sand and gravel	Silty sand and gravel	Silty sand and gravel (till)	Sand and gravel
Lab Report	8021267	8021267	8021267	8021267	8021267	8021267	8021267	8021267	8021267	8021493	8021493	8021493	8051104	8051104	8051104	8051105	8051105	8051105	8051243	8051243

ChemName	Units	BC Schedule 3.1 Part 1 CL - GW used for drinking water	BC Schedule 3.1 Part 1 CL - Intake of contaminated soil	BC Schedule 3.1 Part 1 CL - Toxicity to soil invertebrates and plants	BC Schedule 3.1 Part 2 CL - Human Health Soil Commercial	BC Schedule 3.1 Part 3 Soil Commercial																
BTEXS																						
Benzene	µg/g	0.035	1000	250			<0.02	<0.474	0.053	0.049	<0.02	0.134	0.039	0.356	0.511	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	µg/g	15	25,000	650			0.223	88.5	0.093	0.082	-	0.088	-	0.094	0.283	0.138	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	µg/g	6	20,000	450			<0.2	277	<0.2	<0.2	-	<0.2	-	0.247	0.902	0.678	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylenes, Total	µg/g	6.5	50,000	600			1.51	543	0.39	0.309	-	0.236	-	0.345	0.288	0.159	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
All Other BTEXS	µg/g	*	*	*	*	*	<	<	<	<	-	<	-	<	<	<	<S	<	<	<	<	<	<	<	<	<	<
VOCs	µg/g	*	*	*	*	*	<	<	<	<	-	<	-	<	<	<	<S	<	<	<	<	<	<	<	<	<	<
Volatile Hydrocarbons																						
VPHs	µg/g				200	200	100	1400	<20	<20	-	<20	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Glycols	µg/g	*	*	*	*	*	-	<	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Location ID	BH110			
Sample Date	3/8/2018		3/15/2018	4/18/2018
Sample ID	BH110	BH180	BH110	BH110
Sample Depth (m)	25.9-28.9	25.9-28.9	25.9-28.9	25.9-28.9
Duplicate		Y		
Lab Report	8030689	8030689	L2068081	8041535

ChemName	Units	BC Schedule 3.2 Water DW - Drinking Water				
BTEXS						
Benzene	µg/L	5	7	9.5	109	243
Ethylbenzene	µg/L	140	48.1	69.3	-	1430
Toluene	µg/L	60	11.6	16.1	-	201
Xylenes, Total	µg/L	90	90	118	278	1380
All Other BTEXS	µg/L	*	<	<	-	<
VOCs						
Butadiene, 1,3-	µg/L	1	<1	<1	-	<2.4
Dichloroethane, 1,2-	µg/L	5	67.9	83.6	216	343
Trimethylbenzene, 1,3,5-	µg/L	40	14	15.9	-	179
All Other VOCs	µg/L	*	<S	<S	-	<S
Volatile Hydrocarbons	µg/L	*	<S	<S	-	-
Extractable Hydrocarbons	µg/L	*	<	<	-	-
PAH	µg/L	*	<S	<S	-	-
Metals	µg/L	*	<S	<S	-	-
MAH	µg/L	*	<S	<S	-	-

NOTES:

BOLD	Exceeds Applicable BC CSR Standard
<BOLD	Detection Limit Exceeds Applicable BC CSR Standard
<S	Results Below Applicable BC CSR Standard
<	Results Below Laboratory Detection Limit
*	Contaminant Group - See Results Tables for Individual Analytes and Applicable Standards
-	Not Analyzed

GREEN	All reported analytical results below the laboratory detection limit
BLUE	At least one detectable analytical result, however, all below the applicable BC CSR standard
RED	At least one detectable analytical result above applicable BC CSR standard

LEGEND

Approximate Extent of Soil Contamination

Approximate Extent of Groundwater Contamination

Vapour Analytical Results
BC CSR Schedule 3.3 Standards
Future Parkade Use

Location ID	BH202v			BH204v			BH206v			BH206vn		
Sample ID	BH202v	BH202v - Indoor Exposure	BH202v - Parkade Exposure	BH204v	BH204v - Indoor Exposure	BH204v - Parkade Exposure	BH206v	BH206v - Indoor Exposure	BH206v - Parkade Exposure	BH206vn	BH206vn - Indoor Exposure	BH206vn - Parkade Exposure
Sample Depth (m)	9.0-9.15			9.0-9.15			2.90-3.05			9.00-9.15		
Sample Date	2018-05-14			2018-05-14			2018-05-22			2018-05-11		
Duplicate												
Attenuation Factor	As Reported	0.02	4.0E-04	As Reported	0.02	4.0E-04	As Reported	0.02	4.0E-04	As Reported	0.02	4.0E-04
Lab Report	8051564	8051564	8051564	8051564	8051564	8051564	8051955	8051955	8051955	8051955	8051955	8051955

ChemName	Units	BC Schedule 3.3 Parkade Use Vapour Standard											
BTEXS													
Benzene	µg/m3	10	1	0.02	4.0E-04	1.5	0.03	6.0E-04	5600	112	2.24	13,000	260	5.2
Ethylbenzene	µg/m3	8000	210	4.2	0.08	<1.3	<2.6E-02	<5.2E-04	21,000	420	8.4	95,000	1900	38
Styrene	µg/m3	8000	<0.25	<5.0E-03	<1.0E-04	<0.25	<5.0E-03	<1.0E-04	<220	<4.4	<8.8E-02	65	1.3	0.03
Toluene	µg/m3	40000	52	1.04	0.02	7.2	0.14	2.9E-03	26,000	520	10.4	180,000	3600	72
Xylenes, Total	µg/m3	800	1900	38	0.76	9.6	0.19	3.8E-03	100,000	3600	72	660,000	13200	264
VOCs														
Butadiene, 1,3-	µg/m3	2.5	5.7	0.11	2.3E-03	5.6	0.11	2.2E-03	<880	<17.6	<3.5E-01	<790	<15.8	<3.2E-01
Carbon tetrachloride	µg/m3	15	0.55	0.01	2.2E-04	<0.25	<5.0E-03	<1.0E-04	<220	<4.4	<8.8E-02	<44	<8.8E-01	<1.8E-02
Dibromoethane, 1,2-	µg/m3	0.5	<0.13	<2.6E-03	<5.2E-05	<0.13	<2.6E-03	<5.2E-05	<110	<2.2	<4.4E-02	<22	<4.4E-01	<8.8E-03
Dichloroethane, 1,2-	µg/m3	55	<0.3	<6.0E-03	<1.2E-04	<0.15	<3.0E-03	<6.0E-05	<1200	<24.0	<4.8E-01	<340	<6.8	<1.4E-01
Dichloroethylene, 1,1-	µg/m3	1500	0.38	7.6E-03	1.5E-04	110	2.2	0.04	<220	<4.4	<8.8E-02	<44	<8.8E-01	<1.8E-02
Isopropylbenzene	µg/m3	3000	49	0.98	0.02	0.43	8.6E-03	1.7E-04	2100	42	0.84	7400	148	2.96
Methylcyclohexane	µg/m3	15000	180	3.6	0.07	2.9	0.06	1.2E-03	270,000	5400	108	110,000	2200	44
n-Decane	µg/m3	20000	52	1.04	0.02	12	0.24	4.8E-03	1200	24	0.48	310	6.2	0.12
n-hexane	µg/m3	5500	400	8	0.16	37	0.74	0.01	3,000,000	60000	1200	980,000	19600	392
Tetrachloroethylene	µg/m3	300	14	0.28	5.6E-03	<1.3	<2.6E-02	<5.2E-04	<1100	<22.0	<4.4E-01	<220	<4.4	<8.8E-02
Trichloroethane, 1,1,1-	µg/m3	40000	3.5	0.07	1.4E-03	91	1.82	0.04	<220	<4.4	<8.8E-02	<44	<8.8E-01	<1.8E-02
Trichloroethylene	µg/m3	15	<0.13	<2.6E-03	<5.2E-05	<0.13	<2.6E-03	<5.2E-05	<110	<2.2	<4.4E-02	<22	<4.4E-01	<8.8E-03
Trimethylbenzene, 1,2,4-	µg/m3	55	770	15.4	0.31	6.7	0.13	2.7E-03	19,000	380	7.60	74,000	1480	29.6
Trimethylbenzene, 1,3,5-	µg/m3	25	480	9.6	0.19	2.6	0.05	1.0E-03	25,000	500	10	29,000	580	11.60
Vinyl chloride	µg/m3	9	<0.5	<1.0E-02	<2.0E-04	<0.5	<1.0E-02	<2.0E-04	<440	<8.8	<1.8E-01	<88	<1.8	<3.5E-02
All Other VOCs	µg/m3	*	<	<	<	<	<	<	<	<	<	<	<	<
Volatile Hydrocarbons														
VPHv	µg/m3	8000	14,000	280	5.60	1100	22	0.44	15,000,000	300000	6000	5,100,000	102000	2040
PAH														
Naphthalene	µg/m3	25	2.4	0.05	9.6E-04	0.4	8.0E-03	1.6E-04	<220	<4.4	<8.8E-02	240	4.8	0.10

NOTES:

BOLD	Exceeds Applicable BC CSR Standard
BOLD	Reported Value Above Applicable Standards Before Attenuation
<BOLD	Detection Limit Exceeds Applicable BC CSR Standard
<	Results Below Laboratory Detection Limit
*	Contaminant Group - See Results Tables for Individual Analytes and Applicable Standards
-	Not Analyzed

GREEN	All reported analytical results below the laboratory detection limit
BLUE	At least one detectable analytical result, however, all below the applicable BC CSR standard
RED	At least one detectable analytical result above applicable BC CSR standard

Detailed Site Investigation

1350 Johnston Rd., White Rock, BC

NEXT ENVIRONMENTAL INC.

Project No.: SOL040704
Date: May 31, 2018
Consultant: AM/JC
Drawn By: CS

Cross-Section B-B"

Figure: 09

FILE: SOL040704-009.DWG

Tables

Soil Analytical Results
BC CSR Schedule 3.1 Commercial Standards

Location ID	16-BH101			16-BH102			BH101										BH102	BH105	BH1
Sample Date	4/1/2016			4/1/2016		4/1/2016	2/16/2018									2/20/2018	2/20/2018	2/20/2018	2/20/
Sample ID	BH101-2	BH101-5	BH101-8	BH102-2	BH102-5	BH102-8	BH101-02	BH101-06	BH101-10	BH101-13	BH101-15	BH101-16	BH101-21	BH101-31	BH101-45	BH101-40	BH102-03	BH105-03	BH106-03
Sample Depth	0.7-1.5	3-3.8	5.3-6.1	0.7-1.5	3-3.8	5.3-6.1	0.91-1.22	2.29-2.59	6.1-6.86	8.53-8.14	10.67-10.89	11.28-11.58	14.18-14.41	21.95-22.17	6.1-6.86 Y	27.74-27.96	1.22-1.83	1.22-1.83	1.22-1.83
Duplicate																			
Soil Type	silty SAND	silty SAND	silty SAND	silty SAND	silty SAND	silty SAND	Silty SAND (till)	Silty SAND (till)	Silty SAND (till)	Silty SAND (till)	Silty SAND (till)	SAND and GRAVEL	Silty SAND (till)	Sandy SILT (till)	Silty SAND (till)	Silty SAND (till) and GRAVEL	Silty SAND (till)	Silty SAND (till)	Silty SAND (till)
Lab Report	B624398	B624398	B624398	B624398	B624398	B624398	8021267	8021267	8021267	8021267	8021267	8021267	8021267	8021267	8021267	8021493	8021493	8021493	8021493

ChemName	Units	EQL	BC Schedule 3.1 Part 1 CL - GW used for drinking water	BC Schedule 3.1 Part 1 CL - Intake of contaminated soil	BC Schedule 3.1 Part 1 CL - Toxicity to soil invertebrates and plants	BC Schedule 3.1 Part 2 CL - Human Health Soil Commercial	BC Schedule 3.1 Part 3 CL - Ecological Health Soil Commercial																		
Percentage Solids	%	1						-	-	-	-	-	-	89.7	90.9	90.7	93.8	91.6	96	90	89.4	90.6	93.6	90.9	89.9	90.9
BTEXS																										
Benzene	µg/g	0.005	0.035	1000	250			<0.02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.02	**<0.474**	**0.053**	<0.02	**0.134**	**0.039**	**0.356**	**0.511**	**0.049**	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	µg/g	0.01	15	25000	650			2.7	2.2	0.098	0.027	0.068	0.043	0.223	**88.8**	0.093	-	0.088	-	0.094	0.283	0.082	0.138	<0.05	<0.05	<0.05
Styrene	µg/g	0.03				50000	50	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.108	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	µg/g	0.02	6	20000	450			0.25	0.6	0.15	<0.02	0.05	0.034	<0.2	**277**	<0.2	-	<0.2	-	0.247	0.902	<0.2	0.678	<0.2	<0.2	<0.2
Xylene (m & p)	µg/g	0.04						16	11	0.42	0.093	0.24	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylene (o)	µg/g	0.04						2.1	3.8	0.17	<0.04	0.063	<0.04	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes, Total	µg/g	0.04	8.5	50000	600			**18**	**15**	0.59	0.093	0.31	0.15	1.51	**543**	0.39	-	0.236	-	0.345	0.288	0.309	0.159	<0.1	<0.1	<0.1
VOCs																										
Bromodichloromethane [BDCM]	µg/g	0.05				550	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	µg/g	0.05				4000	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	µg/g	0.3				300	NS	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	-	-	-	-	-	-	-	-	-	-	-	-
Butadiene, 1,3-	µg/g	0.1				9.5	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-
Carbon tetrachloride	µg/g	0.025				1000	50	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
Chlorobenzene	µg/g	0.025				5000	10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	µg/g	0.1						<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-
Chloroform	µg/g	0.05				2500	50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	µg/g	0.1						<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane [DBCM]	µg/g	0.05				400	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromoethane, 1,2-	µg/g	0.025				15	NS	<0.06	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	<0.1	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,2-	µg/g	0.025				25000	10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,3-	µg/g	0.025				7500	10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,4-	µg/g	0.025				30000	10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloroethane, 1,1-	µg/g	0.025				50000	50	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloroethane, 1,2-	µg/g	0.025				350	50	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	<0.05	-	-	-	-	0.074	-	-	-
Dichloroethylene, 1,1-	µg/g	0.025				15000	50	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
Dichloroethylene, 1,2-trans	µg/g	0.025				5000	50	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
Dichloroethylene, 1,2-cis	µg/g	0.025				500	50	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
Dichloromethane	µg/g	0.1				1500	50	<0.32	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	<0.1	-	-	-	-	-	-	-	-
Dichloropropane, 1,2-	µg/g	0.025				3500	50	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloropropene, 1,3-cis	µg/g	0.05						<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloropropene, 1,3-trans	µg/g	0.05						<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	µg/g	0.2				250	NS	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene	µg/g	0.05				25000	NS	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
Methyl tert-butyl ether [MTBE]	µg/g	0.04				20000	NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.04	<0.04	<0.04	-	<0.04	-	<0.04	<0.04	<0.04	-	<0.04	<0.04	<0.04
Methylcyclohexane	µg/g	0.05						-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
n-Decane	µg/g	2						-	-	-	-	-	-	-	-	-	-	<2	-	-	-	-	-	-	-	-
n-hexane	µg/g	0.5						-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-
Tetrachloroethane, 1,1,1,2-	µg/g	0.025				1500	NS	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethane, 1,1,2,2-	µg/g	0.025				150	NS	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	µg/g	0.025		1500	30			<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
Trichlorobenzene, 1,2,3-	µg/g	0.025				400	10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorobenzene, 1,2,4-	µg/g	0.025				2500	10	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethane, 1,1,1-	µg/g	0.025				500000	50	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
Trichloroethane, 1,1,2-	µg/g	0.025				1000	50	<0.29	<0.038	<0.025	<0.025	<0.025	<0.025	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	µg/g	0.009		150	25			<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	-	-	-	-	<0.04	-	-	-	-	-	-	-	-
Trichlorofluoromethane	µg/g	0.2				70000	NS	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Trimethylbenzene, 1,2,4-	µg/g	0.1						-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-
Trimethylbenzene, 1,3,5-	µg/g	0.1				2500	NS	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-
Vinyl chloride	µg/g	0.06				45	NS	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	-	-	-	-	<0.1	-	-	-	-	-	-	-	-
Volatile Hydrocarbons																										
VHw6-10	µg/g	10						840	92	<10	<10	13	<10	-	-	-	-	-	-	-	-	-	-	-	-	-
VHs6-10	µg/g	20						-	-	-	-	-	-	100	2300	<20	-	<20	-	<20	<20	<20	<20	<20	<20	<20
VPHs	µg/g	10				200	200	**820**	75	<10	<10	12	<10	100	**1400**	<20	-	<20	-	<20	<20	<20	<20	<20	<20	<20
Extractable Hydrocarbons																										
EPHw10-C19	µg/g	100						272	<100	<100	<100	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
EPH C19-32	µg/g	100						<100	<100	<100	<100	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
HEPHs	µg/g	100				5000	5000	<100	<100	<100	<100	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
LEPHs	µg/g	100				2000	2000	271	<100	<100	<100	<100	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
PAH																										
Acenaphthene	µg/g	0.05				15000	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	µg/g	0.05						<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	µg/g	0.05	NS	75000	30			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Benz(a)anthracene	µg/g	0.05				300	10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	µg/g	0.05	NS	30	70			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	µg/g	0.05						<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b+j)fluoranthenes	µg/g	0.05				300	10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	µg/g	0.05						<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	µg/g	0.05				300	10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	µg/g	0.05				4500	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	µg/g	0.05				30	10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	µg/g	0.05	NS	10000	200			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	µg/g	0.05				9500	NS	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
HEAVY MOLECULAR WT. PAH SUM	µg/g	0.05						<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/g	0.05				300	10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
LIGHT MOLECULAR WT. PAH SUM	µg/g	0.05						2.8	0.63	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 2-	µg/g	0.05				950	NS	2.2	0.39	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	µg/g	0.05	100	5000	20			0.57	0.24	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
PAH TEQ - Calc	µg/g							<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	-	-	-	-	-	-	-	-	-	-	-	-	-
PAHs (Sum of total)	µg/g	0.05						2.8	0.63	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	µg/g	0.05				10000	50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	µg/g	0.05				7500	100	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Inorganics																										
Moisture	%	0.3						8.5	11	9.2	8.4	8.5	8.3	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																										
Lead	µg/g	0.1	120|150|300|3500|7500|8500	150	1000			4.54	3.1	2.76	1.82	1.86	1.82	-	-	-	-	-	-	-	-	-	-	-	-	-
Glycols																										
Diethylene glycol	µg/g	10						-	-	-	-	-	-	-	<10	-	-	-	-	-	-	-	-	-	-	-
Ethylene glycol	µg/g	10	10	500000	6000			-	-	-	-	-	-	-	<10	-	-	-	-	-	-	-	-	-	-	-
Propylene glycol, 1,2-	µg/g	10						-	-	-	-	-	-	-	<10	-	-	-	-	-	-	-	-	-	-	-
Triethylene Glycol	µg/g	10				450000	NS	-	-	-	-	-	-	-	<10	-	-	-	-	-	-	-	-	-	-	-

Soil Analytical Results
BC CSR Schedule 3.1 Commercial Standards

Location ID	106	BH109		BH201						BH202			BH203	
Sample Date	2018	2/20/2018		5/9/2018						5/9/2018			5/10/2018	
Sample ID	BH106-05	BH109-03	BH109-05	BH201-05	BH201-08	BH201-17	BH201-22	BH201-29	BH201-30	BH202-01	BH202-20	BH202-30	BH203-03	BH203-13
Sample Depth	2.44-3.05	1.22-1.83	2.44-3.05	3.35-3.66	6.4-6.71	15.9-16.2	21.6-21.95	28.7-29	29.7-30	0.15-0.46	18.3-18.6	28.7-29	32.8-33.1	42.6-43.1
Duplicate														
Soil Type	Silty SAND (till)	Silty SAND (till)	Silty SAND (till)	Silty sand and gravel (till)	Silty sand and gravel (till)	Silty clay and gravel	Silty sand and gravel	Silty sand and gravel	Sand and gravel	Sand and gravel	Silty sand and gravel	Silty sand and gravel	Silty sand and gravel (till)	Silty sand and gravel
Lab Report	8021493	8021493	8021493	8051104	8051104	8051104	8051104	8051104	8051104	8051104	8051104	8051104	8051105	8051105

ChemName	Units	EQL	BC Schedule 3.1 Part 1 CL - GW used for drinking water	BC Schedule 3.1 Part 1 CL - Intake of contaminated soil	BC Schedule 3.1 Part 1 CL - Toxicity to soil invertebrates and plants	BC Schedule 3.1 Part 2 CL - Human Health Soil Commercial	BC Schedule 3.1 Part 3 CL - Ecological Health Soil Commercial												
Percentage Solids	%	1						93.2	93.2	93.3	91.2	92.6	84.8	93.6	93.5	94.3	87.4	91.4	94.6	95.6	94.5
BTEXS																					
Benzene	µg/g	0.005	0.035	1000	250			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.03	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	µg/g	0.01	15	25000	650			<0.05	<0.05	0.424	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Styrene	µg/g	0.03				50000	50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	µg/g	0.02	6	20000	450			<0.2	<0.2	0.353	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Xylene (m & p)	µg/g	0.04						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylene (o)	µg/g	0.04						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xylenes, Total	µg/g	0.04	6.5	50000	600			<0.1	<0.1	2.89	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
VOCs																					
Bromodichloromethane [BDCM]	µg/g	0.05				550	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	µg/g	0.05				4000	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	µg/g	0.3				300	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Butadiene, 1,3-	µg/g	0.1				9.5	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	µg/g	0.025				1000	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorobenzene	µg/g	0.025				5000	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	µg/g	0.1						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	µg/g	0.05				2500	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	µg/g	0.1						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane [DBCM]	µg/g	0.05				400	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromoethane, 1,2-	µg/g	0.025				15	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,2-	µg/g	0.025				25000	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,3-	µg/g	0.025				7500	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,4-	µg/g	0.025				30000	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloroethane, 1,1-	µg/g	0.025				50000	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloroethane, 1,2-	µg/g	0.025				350	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloroethylene, 1,1-	µg/g	0.025				15000	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloroethylene, 1,2-trans	µg/g	0.025				5000	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloroethylene, 1,2-cis	µg/g	0.025				500	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloromethane	µg/g	0.1				1500	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloropropane, 1,2-	µg/g	0.025				3500	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloropropene, 1,3-cis	µg/g	0.05						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloropropene, 1,3-trans	µg/g	0.05						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	µg/g	0.2				250	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isopropylbenzene	µg/g	0.05				25000	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether [MTBE]	µg/g	0.04				20000	NS	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Methylcyclohexane	µg/g	0.05						-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-Decane	µg/g	2						-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-hexane	µg/g	0.5						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethane, 1,1,1,2-	µg/g	0.025				1500	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethane, 1,1,2,2-	µg/g	0.025				150	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	µg/g	0.025		1500	30			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorobenzene, 1,2,3-	µg/g	0.025				400	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorobenzene, 1,2,4-	µg/g	0.025				2500	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethane, 1,1,1-	µg/g	0.025				500000	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethane, 1,1,2-	µg/g	0.025				1000	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethylene	µg/g	0.009		150	25			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	µg/g	0.2				70000	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trimethylbenzene, 1,2,4-	µg/g	0.1						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trimethylbenzene, 1,3,5-	µg/g	0.1				2500	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	µg/g	0.06				45	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Volatile Hydrocarbons																					
VHw6-10	µg/g	10						-	-	-	-	-	-	-	-	-	-	-	-	-	-
VHw6-10	µg/g	20						<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
VPHs	µg/g	10				200	200	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Extractable Hydrocarbons																					
EPHw10-C19	µg/g	100						-	-	-	-	-	-	-	-	-	-	-	-	-	-
EPH C19-32	µg/g	100						-	-	-	-	-	-	-	-	-	-	-	-	-	-
HEPHs	µg/g	100				5000	5000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LEPHs	µg/g	100				2000	2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PAH																					
Acenaphthene	µg/g	0.05				15000	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	µg/g	0.05						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthracene	µg/g	0.05	NS	75000	30			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benz(a)anthracene	µg/g	0.05				300	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	µg/g	0.05	NS	30	70			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	µg/g	0.05						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(b+j)fluoranthenes	µg/g	0.05				300	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	µg/g	0.05						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	µg/g	0.05				300	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene	µg/g	0.05				4500	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	µg/g	0.05				30	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluoranthene	µg/g	0.05	NS	10000	200			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fluorene	µg/g	0.05				9500	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HEAVY MOLECULAR WT. PAH SUM	µg/g	0.05						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/g	0.05				300	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LIGHT MOLECULAR WT. PAH SUM	µg/g	0.05						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methylnaphthalene, 2-	µg/g	0.05				950	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Naphthalene	µg/g	0.05	100	5000	20			-	-	-	-	-	-	-	-	-	-	-	-	-	-
PAH TEQ - Calc	µg/g							-	-	-	-	-	-	-	-	-	-	-	-	-	-
PAHs (Sum of total)	µg/g	0.05						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	µg/g	0.05				10000	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrene	µg/g	0.05				7500	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inorganics																					
Moisture	%	0.3						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																					
Lead	µg/g	0.1	120|150|800|3500|7500|8500	150	1000			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Glycols																					
Diethylene glycol	µg/g	10						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylene glycol	µg/g	10	10	500000	6000			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Propylene glycol, 1,2-	µg/g	10						-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triethylene Glycol	µg/g	10				450000	NS	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Soil Analytical Results
BC CSR Schedule 3,1 Commercial Standards

Location ID		BH204		EX1					
Sample Date		5/11/2018							
Sample ID	BH203-63	BH204-10	BH204-28	EX1-01	EX1-05	EX1-06	EX1-07	EX1-09	EX1-11
Sample Depth	42,8-43,1	8,38-8,69	26,7-27	1,5	1,5	1,5	1,5	2,8	1,5
Duplicate	Y								Y
Soil Type	Silty sand and gravel	Silty sand and gravel (till)	Sand and gravel	SILT	SILT	SILT	SILT	SILT	SILT
Lab Report	8051105	8051243	8051243	B628769	B628769	B628769	B628769	B628769	B628769

ChemName	Units	EQL	BC Schedule 3,1 Part 1 CL - GW used for drinking water	BC Schedule 3,1 Part 1 CL - Intake of contaminated soil	BC Schedule 3,1 Part 1 CL - Toxicity to soil invertebrates and plants	BC Schedule 3,1 Part 2 CL - Human Health Soil Commercial	BC Schedule 3,1 Part 3 CL - Ecological Health Soil Commercial									
Percentage Solids	%	1						94,6	93,9	92,9	-	-	-	-	-	-
BTEXS																
Benzene	µg/g	0,005	0,035	1000	250			<0,02	<0,02	<0,02	<0,005	<0,021	<0,014	<0,005	<0,005	<0,005
Ethylbenzene	µg/g	0,01	15	25000	650			<0,05	<0,05	<0,05	0,038	7,3	2	<0,01	0,17	<0,01
Styrene	µg/g	0,03				50000	50	<0,05	<0,05	<0,05	<0,03	<0,03	<0,03	<0,03	<0,03	<0,03
Toluene	µg/g	0,02	6	20000	450			<0,2	<0,2	<0,2	<0,02	0,066	0,13	<0,02	0,089	<0,02
Xylene (m & p)	µg/g	0,04						-	-	-	0,19	40	11	<0,04	0,85	<0,04
Xylene (o)	µg/g	0,04						-	-	-	0,053	13	2,8	<0,04	0,36	<0,04
Xylenes, Total	µg/g	0,04	8,5	50000	600			<0,1	<0,1	<0,1	0,24	53	13	<0,04	1,2	<0,04
VOCs																
Bromodichloromethane [BDCM]	µg/g	0,05				550	NS	-	-	-	-	-	-	-	-	-
Bromoform	µg/g	0,05				4000	NS	-	-	-	-	-	-	-	-	-
Bromomethane	µg/g	0,3				300	NS	-	-	-	-	-	-	-	-	-
Butadiene, 1,3-	µg/g	0,1				9,5	NS	-	-	-	-	-	-	-	-	-
Carbon tetrachloride	µg/g	0,025				1000	50	-	-	-	-	-	-	-	-	-
Chlorobenzene	µg/g	0,025				5000	10	-	-	-	-	-	-	-	-	-
Chloroethane	µg/g	0,1						-	-	-	-	-	-	-	-	-
Chloroform	µg/g	0,05				2500	50	-	-	-	-	-	-	-	-	-
Chloromethane	µg/g	0,1						-	-	-	-	-	-	-	-	-
Dibromochloromethane [DBCM]	µg/g	0,05				400	NS	-	-	-	-	-	-	-	-	-
Dibromoethane, 1,2-	µg/g	0,025				15	NS	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,2-	µg/g	0,025				25000	10	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,3-	µg/g	0,025				7500	10	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,4-	µg/g	0,025				30000	10	-	-	-	-	-	-	-	-	-
Dichloroethane, 1,1-	µg/g	0,025				50000	50	-	-	-	-	-	-	-	-	-
Dichloroethane, 1,2-	µg/g	0,025				350	50	-	-	-	-	-	-	-	-	-
Dichloroethylene, 1,1-	µg/g	0,025				15000	50	-	-	-	-	-	-	-	-	-
Dichloroethylene, 1,2-trans	µg/g	0,025				5000	50	-	-	-	-	-	-	-	-	-
Dichloroethylene, 1,2-cis	µg/g	0,025				500	50	-	-	-	-	-	-	-	-	-
Dichloromethane	µg/g	0,1				1500	50	-	-	-	-	-	-	-	-	-
Dichloropropane, 1,2-	µg/g	0,025				3500	50	-	-	-	-	-	-	-	-	-
Dichloropropene, 1,3-cis	µg/g	0,05						-	-	-	-	-	-	-	-	-
Dichloropropene, 1,3-trans	µg/g	0,05						-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	µg/g	0,2				250	NS	-	-	-	-	-	-	-	-	-
Isopropylbenzene	µg/g	0,05				25000	NS	-	-	-	-	-	-	-	-	-
Methyl tert-butyl ether [MTBE]	µg/g	0,04				20000	NS	<0,04	<0,04	<0,04	<0,1	<0,1	<0,1	<0,1	<0,1	<0,1
Methylcyclohexane	µg/g	0,05						-	-	-	-	-	-	-	-	-
n-Decane	µg/g	2						-	-	-	-	-	-	-	-	-
n-hexane	µg/g	0,5						-	-	-	-	-	-	-	-	-
Tetrachloroethane, 1,1,1,2-	µg/g	0,025				1500	NS	-	-	-	-	-	-	-	-	-
Tetrachloroethane, 1,1,2,2-	µg/g	0,025				150	NS	-	-	-	-	-	-	-	-	-
Tetrachloroethylene	µg/g	0,025		1500	30			-	-	-	-	-	-	-	-	-
Trichlorobenzene, 1,2,3-	µg/g	0,025				400	10	-	-	-	-	-	-	-	-	-
Trichlorobenzene, 1,2,4-	µg/g	0,025				2500	10	-	-	-	-	-	-	-	-	-
Trichloroethane, 1,1,1-	µg/g	0,025				500000	50	-	-	-	-	-	-	-	-	-
Trichloroethane, 1,1,2-	µg/g	0,025				1000	50	-	-	-	-	-	-	-	-	-
Trichloroethylene	µg/g	0,009		150	25			-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	µg/g	0,2				70000	NS	-	-	-	-	-	-	-	-	-
Trimethylbenzene, 1,2,4-	µg/g	0,1						-	-	-	-	-	-	-	-	-
Trimethylbenzene, 1,3,5-	µg/g	0,1				2500	NS	-	-	-	-	-	-	-	-	-
Vinyl chloride	µg/g	0,06				45	NS	-	-	-	-	-	-	-	-	-
Volatile Hydrocarbons																
VHw6-10	µg/g	10						-	-	-	<10	1100	530	<10	<10	<10
VHs6-10	µg/g	20						<20	<20	<20	-	-	-	-	-	-
VPHs	µg/g	10				200	200	<20	<20	<20	<10	1100	520	<10	<10	<10
Extractable Hydrocarbons																
EPHw10-C19	µg/g	100						-	-	-	<100	412	219	<100	<100	<100
EPH C19-32	µg/g	100						-	-	-	<100	<100	<100	<100	<100	<100
HEPHs	µg/g	100				5000	5000	-	-	-	<100	<100	<100	<100	<100	-
LEPHs	µg/g	100				2000	2000	-	-	-	<100	407	218	<100	<100	-
PAH																
Acenaphthene	µg/g	0,05				15000	NS	-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Acenaphthylene	µg/g	0,05						-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Anthracene	µg/g	0,05	NS	75000	30			-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Benz(a)anthracene	µg/g	0,05				300	10	-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Benzo(a)pyrene	µg/g	0,05	NS	30	70			-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Benzo(b)fluoranthene	µg/g	0,05						-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Benzo(b+j)fluoranthenes	µg/g	0,05				300	10	-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Benzo(g,h,i)perylene	µg/g	0,05						-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Benzo(k)fluoranthene	µg/g	0,05				300	10	-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Chrysene	µg/g	0,05				4500	NS	-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Dibenz(a,h)anthracene	µg/g	0,05				30	10	-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Fluoranthene	µg/g	0,05	NS	10000	200			-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Fluorene	µg/g	0,05				9500	NS	-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
HEAVY MOLECULAR WT. PAH SUM	µg/g	0,05						-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Indeno(1,2,3-cd)pyrene	µg/g	0,05				300	10	-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
LIGHT MOLECULAR WT. PAH SUM	µg/g	0,05						-	-	-	0,26	10	4,5	<0,05	0,22	-
Methylnaphthalene, 2-	µg/g	0,05				950	NS	-	-	-	0,19	5,5	3,5	<0,05	0,12	-
Naphthalene	µg/g	0,05	100	5000	20			-	-	-	0,069	4,6	0,96	<0,05	0,099	-
PAH TEQ - Calc	µg/g							-	-	-	<0,13	<0,13	<0,13	<0,13	<0,13	-
PAHs (Sum of total)	µg/g	0,05						-	-	-	0,26	10	4,5	<0,05	0,22	-
Phenanthrene	µg/g	0,05				10000	50	-	-	-	<0,05	0,11	0,054	<0,05	<0,05	-
Pyrene	µg/g	0,05				7500	100	-	-	-	<0,05	<0,05	<0,05	<0,05	<0,05	-
Inorganics																
Moisture	%	0,3						-	-	-	8,4	8,9	8,4	11	13	11
Metals																
Lead	µg/g	0,1	120|150|800|3500|7500|8500	150	1000			-	-	-	-	-	-	-	-	-
Glycols																
Diethylene glycol	µg/g	10						-	-	-	-	-	-	-	-	-
Ethylene glycol	µg/g	10	10	500000	6000			-	-	-	-	-	-	-	-	-
Propylene glycol, 1,2-	µg/g	10						-	-	-	-	-	-	-	-	-
Triethylene Glycol	µg/g	10				450000	NS	-	-	-	-	-	-	-	-	-

Groundwater Analytical Results
BC CSR Schedule 3.2 Standards

Location ID	BH110				BH201
Sample Date	3/8/2018		3/15/2018	4/18/2018	5/15/2018
Sample ID	BH110	BH160	BH110	BH110	BH201
Sample Depth (m)	25.9-28.9	25.9-28.9	25.9-28.9	25.9-28.9	27.4-30.5
Duplicate					
Lab Report	8030689	8030689	L2068081	8041535	8051610

ChemName	Units	EQL	BC Schedule 3.2 Water Standards Drinking Water (DW)						
BTEXS									
Benzene	µg/L	0.5	5	7	9.5	109	243	<0.5	
Ethylbenzene	µg/L	1	140	48.1	69.3	-	1430	<1	
Styrene	µg/L	1	800	<1	<1	-	<1	<1	
Toluene	µg/L	1	60	11.8	16.1	-	201	<1	
Xylene (m & p)	µg/L	0.5		-	-	205	-	-	
Xylene (o)	µg/L	0.5		-	-	72.4	-	-	
Xylenes, Total	µg/L	0.75	90	90	118	278	1380	<2	
VOCs									
Butadiene, 1,3-	µg/L	1	1	<1	<1	-	<2.4	-	
Carbon tetrachloride	µg/L	0.5	2	<0.5	<0.5	-	-	-	
Dibromoethane, 1,2-	µg/L	0.3	0.5	<0.3	<0.3	-	<0.3	-	
Dichloroethane, 1,2-	µg/L	1	5	67.9	83.6	215	343	-	
Dichloroethylene, 1,1-	µg/L	1	14	<1	<1	-	-	-	
Dichloroethylene, 1,2-trans	µg/L	1	80	<1	<1	-	-	-	
Dichloroethylene, 1,2-cis	µg/L	1	8	<1	<1	-	-	-	
Dichloromethane	µg/L	3	50	<3	<3	-	-	-	
Isopropylbenzene	µg/L	1	400	2.5	3.3	-	63	-	
Methyl tert-butyl ether [MTBE]	µg/L	1	95	<1	<1	-	<4.3	<1	
Methylcyclohexane	µg/L	23		-	-	-	<23	-	
n-Decane	µg/L	2		-	-	-	<2	-	
n-hexane	µg/L	28.2		-	-	-	<28.2	-	
Tetrachloroethylene	µg/L	1	30	<1	<1	-	-	-	
Trichloroethane, 1,1,1-	µg/L	1	8000	<1	<1	-	-	-	
Trichloroethylene	µg/L	1	5	<1	<1	-	-	-	
Trimethylbenzene, 1,2,4-	µg/L	10		-	-	-	480	-	
Trimethylbenzene, 1,3,5-	µg/L	1	40	14	15.9	-	179	-	
Vinyl chloride	µg/L	1	2	<1	<1	-	<1	-	
Volatile Hydrocarbons									
VHw6-10	µg/L	100	15000	389	478	-	5220	<100	
VPHw	µg/L	100		233	265	-	1960	<100	
Extractable Hydrocarbons									
EPHw10-C19	µg/L	250	5000	<250	<250	-	-	-	
HEPHw	µg/L	250		<250	<250	-	-	-	
LEPHw	µg/L	250		<250	<250	-	-	-	
PAH									
Acenaphthene	µg/L	0.05	250	<0.05	<0.05	-	-	-	
Anthracene	µg/L	0.01	1000	<0.01	<0.01	-	-	-	
Benz(a)anthracene	µg/L	0.01	0.07	<0.01	<0.01	-	-	-	
Benzo(a)pyrene	µg/L	0.01	0.01	<0.01	<0.01	-	-	-	
Benzo(b+j)fluoranthenes	µg/L	0.05	0.07	<0.05	<0.05	-	-	-	
Chrysene	µg/L	0.05	7	<0.05	<0.05	-	-	-	
Dibenz(a,h)anthracene	µg/L	0.01	0.01	<0.01	<0.01	-	-	-	
Fluoranthene	µg/L	0.03	150	<0.03	<0.03	-	-	-	
Fluorene	µg/L	0.05	150	<0.05	<0.05	-	-	-	
Methylnaphthalene, 1-	µg/L	0.1	5.5	0.177	0.179	-	-	-	
Methylnaphthalene, 2-	µg/L	0.1	15	0.347	0.346	-	-	-	
Naphthalene	µg/L	0.2	80	0.492	0.498	-	<5	-	
Pyrene	µg/L	0.02	100	<0.02	<0.02	-	-	-	
Quinoline	µg/L	0.05	0.05	<0.05	<0.05	-	-	-	
Inorganics									
Hardness	mg/L	0.5		167	170	-	-	-	
Metals									
Arsenic (Filtered)	µg/L	0.5	10	1.29	1.28	-	-	-	
Barium (Filtered)	µg/L	5	1000	32.5	33.1	-	-	-	
Cadmium (Filtered)	µg/L	0.01	5	0.032	0.034	-	-	-	
Chromium (III+VI) (Filtered)	µg/L	0.5		<0.5	<0.5	-	-	-	
Copper (Filtered)	µg/L	0.4	1500	2.57	2	-	-	-	
Lead (Filtered)	µg/L	0.2	10	<0.2	<0.2	-	-	-	
Zinc (Filtered)	µg/L	4	3000	11.5	8.6	-	-	-	
MAH									
Butylbenzene, n-	µg/L	1	200	<1	<1	-	<1	-	
Butylbenzene, sec-	µg/L	1	400	<1	<1	-	<1.2	-	
Butylbenzene, tert-	µg/L	1	400	<1	<1	-	<1	-	
Propylbenzene, 1-	µg/L	1	400	2.8	3.3	-	<51.3	-	

Vapour Analytical Results
BC Schedule 3.3 Commercial Use Standard

Location ID	BH202v		BH204v		BH205v		BH206v		BH206vn	
Sample ID	BH202v	BH202v - Outdoor Exposure	BH204v	BH204v - Outdoor Exposure	BH205v	BH205v - Outdoor Exposure	BH206v	BH206v - Outdoor Exposure	BH206vn	BH206vn - Outdoor Exposure
Sample Depth (m)	9.0-9.15		9.0-9.15		9.0-9.15		2.90-3.05		9.00-9.15	
Sample Date	2018-05-14		2018-05-14		2018-05-14		2018-05-22		2018-05-11	
Duplicate										
Attenuation Factor	As Reported	2.6E-07	As Reported	2.6E-07	As Reported	2.6E-07	As Reported	9.2E-07	As Reported	2.6E-07
Lab Report	8051564	8051564	8051564	8051564	8051564	8051564	8051955	8051955	8051955	8051955

ChemName	Units	EQL	BC Schedule 3.3 Commercial Use Vapour Standard									
BTEXS												
Benzene	µg/m3	0.5	**4**	1	2.6E-07	1.5	3.9E-07	3.6	9.4E-07	**5600**	5.2E-03	**13,000**	3.4E-03
Ethylbenzene	µg/m3	1.3	**3000**	210	5.5E-05	<1.3	<3.4E-07	<1.3	<3.4E-07	**21,000**	0.02	**95,000**	0.02
Styrene	µg/m3	0.25	**3000**	<0.25	<6.5E-08	<0.25	<6.5E-08	<0.25	<6.5E-08	<220	<2.0E-04	65	1.7E-05
Toluene	µg/m3	2.5	**15000**	52	1.4E-05	7.2	1.9E-06	4.2	1.1E-06	**26,000**	0.02	**180,000**	0.05
Xylenes, Total	µg/m3	3.8	**300**	**1900**	4.9E-04	9.6	2.5E-06	<3.8	<9.9E-07	**180,000**	0.17	**660,000**	0.17
VOCs													
Butadiene, 1,3-	µg/m3	1	**2**	**5.7**	1.5E-06	**5.6**	1.5E-06	**160**	4.2E-05	**<880**	<8.1E-04	**<790**	<2.1E-04
Carbon tetrachloride	µg/m3	0.25	**5**	0.55	1.4E-07	<0.25	<6.5E-08	<0.25	<6.5E-08	**<220**	<2.0E-04	**<44**	<1.1E-05
Chloroethane	µg/m3	1.3	**30000**	<1.3	<3.4E-07	<1.3	<3.4E-07	<1.3	<3.4E-07	<1100	<1.0E-03	<220	<5.7E-05
Dibromoethane, 1,2-	µg/m3	0.13	**0.5**	<0.13	<3.4E-08	<0.13	<3.4E-08	<0.13	<3.4E-08	**<110**	<1.0E-04	**<22**	<5.7E-06
Dichloroethane, 1,2-	µg/m3	0.15	**20**	<0.3	<7.8E-08	<0.15	<3.9E-08	<0.23	<6.0E-08	**<1200**	<1.1E-03	**<340**	<8.8E-05
Dichloroethylene, 1,1-	µg/m3	0.25	**600**	0.38	9.9E-08	110	2.9E-05	<0.25	<6.5E-08	<220	<2.0E-04	<44	<1.1E-05
Dichloroethylene, 1,2-trans	µg/m3	0.25	**200**	<0.25	<6.5E-08	<0.25	<6.5E-08	<0.25	<6.5E-08	**<220**	<2.0E-04	<44	<1.1E-05
Dichloroethylene, 1,2-cis	µg/m3	0.25	**200**	<0.25	<6.5E-08	<0.25	<6.5E-08	<0.25	<6.5E-08	**<220**	<2.0E-04	<44	<1.1E-05
Dichloromethane	µg/m3	2.5	**2000**	<2.5	<6.5E-07	<2.5	<6.5E-07	<2.5	<6.5E-07	**<2200**	<2.0E-03	<440	<1.1E-04
Isopropylbenzene	µg/m3	0.25	**1000**	49	1.3E-05	0.43	1.1E-07	<0.25	<6.5E-08	**2100**	1.9E-03	**7400**	1.9E-03
Methyl tert-butyl ether [MTBE]	µg/m3	0.5	**9000**	<0.5	<1.3E-07	<0.5	<1.3E-07	<0.5	<1.3E-07	<440	<4.0E-04	<88	<2.3E-05
Methylcyclohexane	µg/m3	1.3	**5000**	180	4.7E-05	2.9	7.5E-07	8.1	2.1E-06	**270,000**	0.25	**110,000**	0.03
n-Decane	µg/m3	0.75	**8000**	52	1.4E-05	12	3.1E-06	11	2.9E-06	1200	1.1E-03	310	8.1E-05
n-hexane	µg/m3	2.5	**2000**	400	1.0E-04	37	9.6E-06	18	4.7E-06	**3,000,000**	2.76	**980,000**	0.25
Tetrachloroethylene	µg/m3	1.3	**100**	14	3.6E-06	<1.3	<3.4E-07	<1.3	<3.4E-07	**<1100**	<1.0E-03	**<220**	<5.7E-05
Trichloroethane, 1,1,1-	µg/m3	0.25	**15000**	3.5	9.1E-07	91	2.4E-05	<0.25	<6.5E-08	<220	<2.0E-04	<44	<1.1E-05
Trichloroethylene	µg/m3	0.13	**6**	<0.13	<3.4E-08	<0.13	<3.4E-08	<0.13	<3.4E-08	**<110**	<1.0E-04	**<22**	<5.7E-06
Trimethylbenzene, 1,2,4-	µg/m3	1.3	**20**	**770**	2.0E-04	6.7	1.7E-06	3.5	9.1E-07	**19,000**	0.02	**74,000**	0.02
Trimethylbenzene, 1,3,5-	µg/m3	1.3	**10**	**480**	1.2E-04	2.6	6.8E-07	<1.3	<3.4E-07	**25,000**	0.02	**29,000**	7.5E-03
Vinyl chloride	µg/m3	0.5	**3.5**	<0.5	<1.3E-07	<0.5	<1.3E-07	<0.5	<1.3E-07	**<440**	<4.0E-04	**<88**	<2.3E-05
Volatile Hydrocarbons													
VH C6-C13	µg/m3	500		17,000	4.4E-03	1100	2.9E-04	1400	3.6E-04	18,000,000	16.56	7,100,000	1.85
VPHv	µg/m3	500	**3000**	**14,000**	3.6E-03	1100	2.9E-04	1300	3.4E-04	**15,000,000**	13.80	**5,100,000**	1.33
PAH													
Naphthalene	µg/m3	0.25	**9**	2.4	6.2E-07	0.4	1.0E-07	0.4	1.0E-07	**<220**	<2.0E-04	**240**	6.2E-05

Vapour Analytical Results
BC Schedule 3.3 Parkade UseStandard

Location ID	BH202v			BH204v			BH205v			BH206v			BH206vn		
Sample ID	BH202v	BH202v - Indoor Exposure	BH202v - Parkade Exposure	BH204v	BH204v - Indoor Exposure	BH204v - Parkade Exposure	BH205v	BH205v - Indoor Exposure	BH205v - Parkade Exposure	BH206v	BH206v - Indoor Exposure	BH206v - Parkade Exposure	BH206vn	BH206vn - Indoor Exposure	BH206vn - Parkade Exposure
Sample Depth (m)	9.0-9.15			9 0-9.15			9.0-9.15			2 90-3.05			9.00-9.15		
Sample Date	2018-05-14			2018-05-14			2018-05-14			2018-05-22			2018-05-11		
Duplicate															
Attenuation Factor	As Reported	2 0E-02	4.0E-04	As Reported	2.0E-02	4 0E-04	As Reported	2 0E-02	4.0E-04	As Reported	2.0E-02	4.0E-04	As Reported	2.0E-02	4 0E-04
Lab Report	8051564	8051564	8051564	8051564	8051564	8051564	8051564	8051564	8051564	8051955	8051955	8051955	8051955	8051955	8051955
ChemName	Units	EQL	BC Schedule 3.3 Parkade Use Vapour Standard														
BTEXS																	
Benzene	µg/m3	0.5	**10**	1	0 02	4.0E-04	1.5	0.03	6 0E-04	3.6	0 07	1.4E-03	**5600**	**112**	2.24	**13,000**	**260**	5.2
Ethylbenzene	µg/m3	1.3	**8000**	210	4.2	0.08	<1.3	<2.6E-02	<5 2E-04	<1 3	<2 6E-02	<5.2E-04	**21,000**	420	8.4	**95,000**	1900	38
Styrene	µg/m3	0.25	**8000**	<0.25	<5.0E-03	<1.0E-04	<0.25	<5.0E-03	<1 0E-04	<0.25	<5 0E-03	<1.0E-04	<220	<4.4	<8.8E-02	65	1 3	0 03
Toluene	µg/m3	2.5	**40000**	52	1 04	0.02	7.2	0.14	2 9E-03	4.2	0 08	1.7E-03	26 000	520	10.4	**180,000**	3600	72
Xylenes, Total	µg/m3	3.8	**800**	**1900**	38	0.76	9.6	0.19	3 8E-03	<3 8	<7 6E-02	<1.5E-03	**180,000**	**3600**	72	**660,000**	**13200**	264
VOCs																		
Butadiene 1 3-	µg/m3	1	**2.5**	5.7	0.11	2.3E-03	**5.6**	0.11	2 2E-03	**160**	**3.2**	0.06	**<880**	**<17.6**	<3.5E-01	**<790**	**<15.8**	<3 2E-01
Carbon tetrachloride	µg/m3	0.25	**15**	0.55	0 01	2.2E-04	<0.25	<5.0E-03	<1 0E-04	<0.25	<5 0E-03	<1.0E-04	**<220**	<4.4	<8.8E-02	**<44**	<8.8E-01	<1 8E-02
Chloroethane	µg/m3	1.3	**80000**	<1 3	<2.6E-02	<5.2E-04	<1.3	<2.6E-02	<5 2E-04	<1 3	<2 6E-02	<5.2E-04	<1100	<22.0	<4.4E-01	<220	<4.4	<8 8E-02
Dibromoethane 1 2-	µg/m3	0.13	**0.5**	<0.13	<2.6E-03	<5.2E-05	<0.13	<2.6E-03	<5 2E-05	<0.13	<2 6E-03	<5.2E-05	**<110**	**<2.2**	<4.4E-02	**<22**	<4.4E-01	<8 8E-03
Dichloroethane 1 2-	µg/m3	0.15	**55**	<0 3	<6.0E-03	<1.2E-04	<0.15	<3.0E-03	<6 0E-05	<0.23	<4 6E-03	<9.2E-05	**<1200**	<24.0	<4.8E-01	**<340**	<6 8	<1.4E-01
Dichloroethylene, 1,1-	µg/m3	0.25	**1500**	0.38	7 6E-03	1.5E-04	110	2.2	0 04	<0.25	<5 0E-03	<1.0E-04	<220	<4.4	<8.8E-02	<44	<8.8E-01	<1 8E-02
Dichloroethylene, 1,2-trans	µg/m3	0.25	**500**	<0.25	<5.0E-03	<1.0E-04	<0.25	<5.0E-03	<1 0E-04	<0.25	<5 0E-03	<1.0E-04	<220	<4.4	<8.8E-02	<44	<8.8E-01	<1 8E-02
Dichloroethylene 1 2-cis	µg/m3	0.25	**500**	<0.25	<5.0E-03	<1.0E-04	<0.25	<5.0E-03	<1 0E-04	<0.25	<5 0E-03	<1.0E-04	<220	<4.4	<8.8E-02	<44	<8.8E-01	<1 8E-02
Dichloromethane	µg/m3	2 5	**5000**	<2 5	<5.0E-02	<1.0E-03	<2.5	<5.0E-02	<1 0E-03	<2.5	<5.0E-02	<1.0E-03	<2200	<44.0	<8.8E-01	<440	<8 8	<1 8E-01
Isopropylbenzene	µg/m3	0.25	**3000**	49	0 98	0.02	0.43	8.6E-03	1.7E-04	<0.25	<5.0E-03	<1.0E-04	2100	42	0.84	**7400**	148	2 96
Methyl tert-butyl ether [MTBE]	µg/m3	0.5	**25000**	<0 5	<1.0E-02	<2.0E-04	<0.5	<1.0E-02	<2 0E-04	<0 5	<1 0E-02	<2.0E-04	<440	<8.8	<1.8E-01	<88	<1 8	<3 5E-02
Methylcyclohexane	µg/m3	1.3	**15000**	180	3.6	0.07	2.9	0.06	1 2E-03	8.1	0.16	3.2E-03	**270,000**	5400	108	**110,000**	2200	44
n-Decane	µg/m3	0.75	**20000**	52	1 04	0.02	12	0.24	4 8E-03	11	0 22	4.4E-03	1200	24	0.48	310	6.2	0.12
n-hexane	µg/m3	2 5	**5500**	400	8	0.16	37	0.74	0 01	18	0 36	7.2E-03	**3,000,000**	**60000**	1200	**980,000**	**19600**	392
Tetrachloroethylene	µg/m3	1 3	**300**	14	0 28	5.6E-03	<1.3	<2.6E-02	<5 2E-04	<1.3	<2.6E-02	<5.2E-04	**<1100**	<22.0	<4.4E-01	<220	<4.4	<8 8E-02
Trichloroethane, 1,1,1-	µg/m3	0.25	**40000**	3.5	0 07	1.4E-03	91	1.82	0 04	<0.25	<5 0E-03	<1.0E-04	<220	<4.4	<8.8E-02	<44	<8.8E-01	<1 8E-02
Trichloroethylene	µg/m3	0.13	**15**	<0.13	<2.6E-03	<5.2E-05	<0.13	<2.6E-03	<5 2E-05	<0.13	<2 6E-03	<5.2E-05	**<110**	<2.2	<4.4E-02	**<22**	<4.4E-01	<8 8E-03
Trimethylbenzene 1 2 4-	µg/m3	1.3	**55**	**770**	15.4	0.31	6.7	0.13	2.7E-03	3.5	0 07	1.4E-03	**19,000**	**380**	7.60	**74,000**	**1480**	29.6
Trimethylbenzene, 1,3,5-	µg/m3	1 3	**25**	**480**	9.6	0.19	2.6	0.05	1 0E-03	<1 3	<2 6E-02	<5.2E-04	**25,000**	**500**	10	**29,000**	**580**	11.60
Vinyl chloride	µg/m3	0.5	**9**	<0 5	<1.0E-02	<2.0E-04	<0.5	<1.0E-02	<2 0E-04	<0 5	<1 0E-02	<2.0E-04	**<440**	<8.8	<1.8E-01	**<88**	<1 8	<3 5E-02
Volatile Hydrocarbons																		
VH C6-C13	µg/m3	500		17 000	340	6.80	1100	22	0.44	1400	28	0.56	18 000 000	360000	7200	7 100 000	142000	2840
VPHv	µg/m3	500	**8000**	**14,000**	280	5.60	1100	22	0.44	1300	26	0.52	**15,000,000**	**300000**	6000	**5,100,000**	**102000**	2040
PAH																		
Naphthalene	µg/m3	0.25	**25**	2.4	0 05	9.6E-04	0.4	8.0E-03	1 6E-04	0.4	8 0E-03	1.6E-04	**<220**	<4.4	<8.8E-02	**240**	4.8	0.10

Appendix A
Regulatory Standards

REGULATORY STANDARDS

The numerical standards stipulated in the following documents were used when comparing the analytical data sets:

Environmental Management Act - *Contaminated Sites Regulation ("CSR")*, BC Reg 375/96 (1997) including amendments up to BC 196/2017; and,

Environmental Management Act - *Hazardous Waste Regulation ("HWR")*, BC Reg 63/88, O.C. 268/88 (1988) including amendments up to BC 63/2009.

Based on the Site's current and/or anticipated future primary land use at the surface of the Site, the applicable CSR land use standards were selected from the following: Wildlands Natural ("WL_N"), Wildlands Reverted ("WL_R"), Agricultural ("AL"), Urban Park ("PL"), Residential Low Density ("RL_{LD}"), Residential High Density ("RL_{HD}"), Commercial ("CL") or Industrial ("IL").

The applicable land use Standard based on the current and planned future use of the Site at grade is Commercial ("CL").

For soils, generic and matrix numerical standards are listed in Schedule 3.1 Parts 1, 2 & 3 of the BC CSR. Matrices exist for various components listed in Schedule 3.1 Part 1 of the CSR, and the applicable numerical standards are dependent upon which site-specific factors apply to the Site. By default, two site specific factors apply to all residential, commercial and industrial use sites: namely "Human Health Protection - Intake of Contaminated Soil" and, "Toxicity to Soil Invertebrates and Plants".

A prevalent concern with contaminated soil is the subsequent impact on the quality of groundwater beneath a site. For this reason, other site-specific factors may apply and depend on the use of groundwater at the site and if the flow of groundwater beneath the site is discharging to surface water bodies that support aquatic life. For groundwater, determining the use involves identifying the current and future drinking water ("DW") use, aquatic life water ("AW") use, irrigation water ("IW") use and livestock water ("LW") use.

According to the Ministry *Protocol 21 – Water Use Determination* ("P21") Version 2.0, DW standards apply if the water is currently used for drinking water or has the potential to be used for drinking water in the future. The potential for future drinking water use can be determined by completing investigative work to better understand the aquifer hydraulic conductivity, aquifer yield, natural groundwater quality, and geology above the water-bearing zone. The alternative to conducting additional investigative work is to apply DW standards by default. If it is determined that the DW standards apply to Site groundwater then the soil matrix standards for "Groundwater used for drinking water" from Schedule 3.1 Part 1 are also applicable standards for Site soil.

No drinking water wells exist on the Site; however, the City of White Rock draws its drinking water from a viable drinking water aquifer known to extend beneath the Site. The nearest extraction well to the Site is located approximately 450m northeast and up-gradient of the Site, and so current drinking water use does not apply to the Site. The presence of a known viable aquifer beneath the Site, however, means that future drinking water use does apply.

According to P21, AW standards apply to all groundwater located within 500m of a surface water body containing aquatic life unless it is demonstrated that the groundwater flows to another surface water body located greater than 500m from the source. If the AW standards apply to the groundwater on-Site then the soil matrix standards for "Groundwater flow to surface water" from Schedule 3.1 Part 1 are also applicable standards for Site soils.

The Site is an affected parcel therefore only on-Site contamination needs to be delineated and remediated. In the absence of an aquatic receiving environment on the Site, there is no potential for contamination to migrate to within 500m of an aquatic receiving environment on the Site. Thus, AW does not apply.

According to P21, IW and LW standards apply if the site is located on agricultural land, located in the provincial ALR and/or irrigation/livestock water wells are within 500m of the site.

No agricultural properties or water wells for irrigation or livestock water are located within 500m of the Site. Therefore, IW and LW Standards do not apply to the Site.

Under Schedule 3.2 of the CSR, groundwater is considered contaminated wherever Non-Aqueous Phase Liquids ("NAPL") are present. The presence and mobility of NAPL is defined in *Protocol 16 – Determining the Presence and Mobility of Non-Aqueous Phase Liquids and Odorous Substances.* In addition, for petroleum hydrocarbons, according to the Protocol for Regulation of Petroleum Hydrocarbons in Water under CSR and HWR ("CSR - Protocol 7"), concentrations greater than the "CSR - Schedule 6 VH_{W6-10} and EH_{W10-19} water quality standards" apply to all sites regardless of water use.

On January 25, 2013, the Ministry released a Stage 8 CSR Amendment. It addressed the fact that iron and manganese groundwater concentrations are often temporarily elevated in the presence of petroleum hydrocarbon contamination. The amendment also recognized that iron and manganese are often naturally occurring metals in the groundwater and exempted the standards with exception of specific Schedule 2 activities (e.g.: metal plating operations).

There are currently no provincial standards available for concentrations of extractable petroleum hydrocarbons ("EPH") in soil. A Ministry EPH moratorium for petroleum and natural gas drilling, production, processing, retailing and distribution sites as described in Schedule 2 section F of the CSR enables stakeholders to compare EPH results to the CSR standards for light EPH ("LEPH") and heavy EPH ("HEPH"). EPH is reported in two carbon ranges, C_{10}-C_{19} and C_{19}-C_{32}. $EPH_{C10-C19}$ is defined as LEPH without the Polycyclic Aromatic Hydrocarbons ("PAH") correction (2 compounds for soil and 6 compounds for water), and $EPH_{C19-C32}$ is defined as HEPH without PAH correction (7 compounds for soil and 4 compounds for water). The concentrations of PAHs are generally low in refined fuels; therefore, the concentration of LEPH equals the concentration of $EPH_{C10-C19}$ and the concentration of HEPH equals the concentration of $EPH_{C19-C32}$. Therefore, the concentrations of $EPH_{C10-C19}$ were compared to the provincial LEPH standard, while the concentrations of $EPH_{C19-C32}$ were compared to the provincial HEPH standard for the purpose of screening potential contaminants.

Finally, vapours must be addressed where volatile or semi-volatile PCOCs are either detectable, or in the case of VOCs are identified as a PCOC, at a site in soil and groundwater. The applicable vapour standards are listed in CSR Schedule 3.3 for the following land uses: Agricultural, Urban Park and Residential use ("RU"), Commercial use ("CU"), Industrial use ("IU"), and Parkade Use ("PU").

Based on the current land use, CU vapour standards apply to the Site, for outdoor receptors only. The on-Site building is vacant and will remain vacant until it is demolished. For the future development, the building will be constructed property line to property line, and will be underlain entirely by a three storey parkade. As such, PU standards apply to the future use, for indoor receptors only.

Appendix B
PCOC lists

AEC 1: Off-Site Service Station

Soil	Groundwater (AW)	Groundwater (DW)	Groundwater (AW & DW)	Vapour
arsenic	acenaphthene	acenaphthene	acenaphthene	benzene
acenaphthene	acridine	anthracene	acridine	butadiene, 1,3-
anthracene	anthracene	arsenic	anthracene	carbon tetrachloride
barium	arsenic	barium	arsenic	chloroethane
benz(a)anthracene	barium	benz(a)anthracene	barium	dibromoethane, 1,2-
benzene	benz(a)anthracene	benzene	benz(a)anthracene	dichloroethane, 1,2-
benzo(a)pyrene	benzene	benzo(a)pyrene	benzene	dichloroethylene, 1,1-
benzo(b+j)fluoranthenes	benzo(a)pyrene	benzo(b+j)fluoranthenes	benzo(a)pyrene	dichloroethylene, 1,2- cis
benzo(k)fluoranthene	cadmium**	butadiene, 1,3-	benzo(b+j)fluoranthenes	dichloroethylene, 1,2- trans
butadiene, 1,3-	carbon tetrachloride	butylated hydroxytoluene [BHT]	butadiene, 1,3-	dichloromethane
butylated hydroxytoluene [BHT]	chromium, hexavalent***	butylbenzene, n-	butylated hydroxytoluene [BHT]	ethylbenzene
butylbenzene, n-	chromium, trivalent***	butylbenzene, sec-	butylbenzene, n-	isopropylbenzene
butylbenzene, sec-	chrysene	butylbenzene, tert-	butylbenzene, sec-	methyl tert-butyl ether [MTBE]
butylbenzene, tert-	copper**	cadmium	butylbenzene, tert-	methylcyclohexane
cadmium*	dichloroethane, 1,2-	carbon tetrachloride	cadmium**	naphthalene
carbon tetrachloride	dichloromethane	chromium, hexavalent***	carbon tetrachloride	n-decane
chromium	EPHw10-19	chromium, trivalent***	chromium, hexavalent***	n-hexane
chrysene	ethylbenzene	chrysene	chromium, trivalent***	styrene
copper*	ethylene glycol	copper	chrysene	tetrachloroethylene
dibenz(a,h)anthracene	fluoranthene	dibenz(a,h)anthracene	copper**	toluene
dibenzo(a,e)pyrene	fluorene	dibromoethane, 1,2-	dibenz(a,h)anthracene	trichloroethane, 1,1,1-
dibromoethane, 1,2-	lead**	dichloroethane, 1,2-	dibromoethane, 1,2-	trichloroethylene
dichloroethane, 1,2-	LEPHw	dichloroethylene, 1,1-	dichloroethane, 1,2-	trimethylbenzene, 1,2,4-
dichloroethylene, 1,1-	methyl tert-butyl ether [MTBE]	dichloroethylene, 1,2-cis-	dichloroethylene, 1,1-	trimethylbenzene, 1,3,5-
dichloroethylene, 1,2-cis-	naphthalene	dichloroethylene, 1,2-trans-	dichloroethylene, 1,2-cis-	vinyl chloride
dichloroethylene, 1,2-trans-	phenanthrene	dichloromethane	dichloroethylene, 1,2-trans-	VPHv
dichloromethane	propylene glycol, 1,2-	EPHw10-19	dichloromethane	xylenes, total
ethylbenzene	pyrene	ethylbenzene	EPHw10-19	
ethylene glycol	quinoline	ethylene glycol	ethylbenzene	
fluoranthene	styrene	fluoranthene	ethylene glycol	
fluorene	tetrachloroethylene	fluorene	fluoranthene	
HEPHs	toluene	isopropylbenzene	fluorene	
indeno(1,2,3-cd)pyrene	trichloroethylene	lead	isopropylbenzene	
isopropylbenzene	VHw6-10	methyl tert-butyl ether [MTBE]	lead**	
lead*	VPHw	methylnaphthalene, 1-	LEPHw	
LEPHs	xylenes, total	methylnaphthalene, 2-	methyl tert-butyl ether [MTBE]	
methyl tert-butyl ether [MTBE]	zinc**	naphthalene	methylnaphthalene, 1-	
methylnaphthalene, 1-		nonane, n-	methylnaphthalene, 2-	
methylnaphthalene, 2-		nitropyrene, 4-	naphthalene	
naphthalene		phenylenediamine, m- [MPD]	nonane, n-	
nonane, n-		phenylenediamine, o- [OPD]	nitropyrene, 4-	
nitropyrene, 4-		phenylenediamine, p- [PPD]	phenanthrene	
phenanthrene		propylbenzene, 1-	phenylenediamine, m- [MPD]	
phenylenediamine, m- [MPD]		propylene glycol, 1,2-	phenylenediamine, o- [OPD]	
phenylenediamine, o- [OPD]		pyrene	phenylenediamine, p- [PPD]	
phenylenediamine, p- [PPD]		quinoline	propylbenzene, 1-	
propylbenzene, 1-		styrene	propylene glycol, 1,2-	
pyrene		tetrachloroethylene	pyrene	
quinoline		tetraethyl lead	quinoline	
styrene		toluene	styrene	
tetrachloroethylene		trichloroethane, 1,1,1-	tetrachloroethylene	
tetraethyl lead		trichloroethylene	tetraethyl lead	
toluene		triethylene glycol	toluene	
trichloroethane, 1,1,1-		trimethylbenzene, 1,3,5-	trichloroethane, 1,1,1-	
trichloroethylene		VHw6-10	trichloroethylene	
triethylene glycol		vinyl chloride	triethylene glycol	
trimethylbenzene, 1,3,5-		xylenes, total	trimethylbenzene, 1,3,5-	
vinyl chloride		zinc	VHw6-10	
VPHs			vinyl chloride	
xylenes			VPHw	
zinc*			xylenes, total	
			zinc**	

* The CSR Schedule 3.1 Part 1 standard is dependent on soil pH.

** The CSR Schedule 3.2 AW standard is dependent on water hardness.

*** CSR Schedule 3.2, Note 28 states that analytical results for chromium (all species) in water may be used to demonstrate compliance with the standards. Where the standards cannot be met based on analytiacl results for chromium (all species

Appendix C
Investigation Methodology

Investigation Methodology

1. In-Situ and ex-Situ Soil Sampling, Confirmation of Remediation

Next Environmental Inc. ("NEXT") developed soil sampling protocols based on the following documents:

- BC Ministry of Environment and Climate Change Strategy, Technical Guidance 1 - Site Characterization and Confirmation Testing, January 2009;
- Canadian Council of Ministers of the Environment, Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites, Volume I: Main Report, December 1993;
- Canadian Council of Ministers of the Environment, Subsurface Assessment Handbook for Contaminated Sites, March 1994; and,
- British Columbia Field Sampling Manual (2013 Edition), January 2003.

Prior to commencing any subsurface drilling or excavation work, the following tasks/documents are completed/prepared:

- A Site-specific Health & Safety Plan ("SSHASP"), reviewed and signed by the Project Manager. A copy of the SSHASP is to be kept on-Site at all times. Please refer to NEXT's H&S manual for more details;
- A mandatory Health & Safety orientation for all Site visitors. Visitors must sign in and out when entering/leaving the Site;
- Professional Utility Locate (including a BC One Call Ticket) by an approved subcontractor;
- NEXT field forms;
- NEXT subcontractor tracking forms; and,
- Any necessary permits.

A Professional Utility Locate is completed for the Site to ensure the investigation locations will not interfere with underground and overhead utilities, including, but not limited to water, storm, sanitary, gas, hydro, communication, and fibre optics. Prior to completing the locate, a BC One Call is placed by both NEXT personnel and by the locate subcontractor. BC One Call issues a unique ticket number and contacts their members to request drawings of utilities on the Site and the surrounding area. There are a number of utilities that are not BC One Call members, for instance some municipalities and communications utilities such as Shaw. Utilities that are missing from the BC One Call are contacted by NEXT or the subcontractor to request drawings.

Soil samples are collected using a several methods and tools. The most common types of soil samples NEXT collects are for the following purposes:

I. **In Situ Characterization;**
II. **Batch Testing of Suspect Material in Stockpiles; and,**
III. **Confirmation of Adequate Remediation.**

All soil cuttings and purge water from monitoring wells are collected into drums and disposed of at licensed facilities.

The subsequent sections provide a detailed description of the methodology used for each type of soil sampling.

I. <u>In Situ Characterization</u>

An approved subcontractor is commissioned by NEXT to drill boreholes or do test pits for the purpose of collecting in-situ soil samples. This typically requires a combination of one or more of the following equipment:

- Concrete/asphalt corer;
- Hand drill or Pionjar hammer drill;

- Track-or truck-mounted solid stem or hollow stem auger drill rig;
- Track-or truck-mounted sonic (vibratory) drill rig;
- ODEX drill rig with optional split spoon;
- Water/Mud Rotary;
- Air/Pneumatic Rotary;
- Direct Push Technology (DPT);
- Limited access drilling equipment (such as Geoprobe);
- Backhoe or excavator; and/or,
- Hydro-vacuum truck.

The following soil sampling protocol was adapted for the various in-situ investigation methods. Photos of the retrieved augers or soil cores are be taken for documentation purposes. Field notes are written in a field book and/or on NEXT Borehole Log Forms and include:

- General information:
    - Project number;
    - Project description (PSI, DSI, etc.);
    - Address;
    - NEXT staff;
    - Client name;
    - Name of subcontractor;
    - Drill method; and,
    - Depth to water.

- Description for soil stratigraphy:
    - Soil classification (gravel, sand, silt, clay, etc.) using the Unified Soil Classification System (USCS);
    - Colour;
    - Other contents (peat, woodwaste, scrap metal, etc.);
    - Grain size (coarse, medium, fine);
    - Gradation (well vs poorly sorted) ;
    - Clay or silt compaction (very soft to hard);
    - Sand compaction (very loose to dense); and,
    - Moisture content (dry to saturated).

- Sample information including:
    - Borehole location;
    - Sampling method and type;
    - Unambiguous sample name;
    - Headspace measurement;
    - Depth range of sample below grade; and,
    - Physical, visual, and olfactory observations.

The sampler always wears clean nitrile gloves (or other based on contaminant type), which are changed between successive sample collections. If a sampling trowel is used, it is wiped clean between successive sampling events. The outer surface of the soil column on solid stem augers, split spoons, sonic cores, or excavator buckets is scraped off to remove exterior scrapings and to avoid cross-contamination. A shovel or scoop is used to collect soil samples from the sidewalls of a daylighted hole, which is cleaned between successive sample collections.

Soil samples are collected at regularly spaced intervals (over a maximum span of 0.5m in the top 1m, and a maximum span of 1m at depths below 1m from the surface), at changes in stratigraphy, and where field observations (staining, odour, vapour screening) indicate the potential for soil contamination. Samples from different stratigraphic units, two sides of the saturated and non-saturated zone, or from contaminated and non-contaminated zones are not combined. Collected sample portions are evenly distributed among multiple laboratory provided clean single-use containers, which include glass jars and methanol vials (number and type of container can vary depending on sampling requirements). For

the analysis of VOCs, laboratory supplied single-use clean plungers and methanol vials are used. These are designed for VOC extraction within the methanol, and avoid loss of contaminants through volatilization. For analysis of other compounds, each sampling jar is tightly packed and properly sealed with a lid.

A portion of each collected sample is placed in a plastic bag for headspace soil readings. These field screening results are used to select soil samples for laboratory analysis. A sufficient amount of soil is collected to ensure 1/3rd of the bag is filled with the sample. The bag is tied tightly so that the remaining 2/3^{rds} consists of a pocket of air above the sample. After sufficient equilibration time, a portable RKI Eagle combustible gas meter and/ or a MiniRAE 2000 photo-ionization detector is used to collect headspace vapour measurements. The sample bag is pierced by the probe, and the headspace readings from the air pocket is measured.

A sufficient number of duplicate samples is collected and all field QA/QC procedures are followed (see "QA/QC Methodology and RPD Tables" Appendix for further information). All samples are labeled with an unambiguous name and placed into a chilled cooler (<10^{o}C). The samples are sent to the laboratory within the prescribed hold times for the PCOCs. A fully completed Chain of Custody ("CoC") form accompanies the samples to the laboratory. The sample shipment is labeled with the applicable TDG stickers. Samples collected for legal purposes always include properly recorded documentation, seals, and photographic evidence.

Augers are generally pressure-washed between each borehole to prevent cross-contamination. Drill cuttings are typically not used to backfill the borehole. The drill cuttings are stored in on-Site drums that are labeled with the borehole names. Once analytical data is received and the cuttings have been characterized, the drums and contents are disposed of at a certified facility.

II. Batch Testing of Suspect Material in Stockpiles

Stockpiles contain soils that have been excavated from one or several locations and that were combined into a pile. The quality of the suspect material (suspect hazardous waste, suspect waste, or suspect industrial quality) that is expected to be present in a stockpile determines the following:

- The maximum allowed stockpile size;
- The cell volumes in each stockpile; and,
- The number of aliquots (between 1 and 5) that can be combined to form a representative cell sample.

A cell is defined as a portion of a stockpile. All of NEXT's stockpile samples are collected as representative cell samples. Multiple specimens of equal volume may be combined into an aliquot, which in turn may be combined by equal amounts into one representative cell sample.

The procedures for batch testing of stockpile soils including documentation, sample collection, handling, and shipping is in essence the same as for the in-situ soil characterization and therefore not further discussed here.

III. Confirmation of Adequate Remediation

An approved subcontractor is commissioned by NEXT to complete physical remediation. The types of soil samples collected during this process include floor and wall samples. Documentation for the excavation, trucking and disposal of soils include the following forms.

NEXT Excavation Sample Tracking Forms are used to document the following for each sample:

- Project number;
- Address;
- Client;
- Date and time;
- Unique sample name;
- Sample type;

- Sidewall direction;
- Coordinates for x, y, and z;
- Soil description;
- Sidewall stratigraphy;
- Headspace soil measurement; and,
- Reference the sample location on the Site map.

NEXT Soil Tracking Forms are used to document the following for each truckload of soil leaving the Site:

- Date;
- Truck type;
- Incoming truck contents;
- Truck Identifier;
- Time in;
- Time out;
- NEXT tracking number;
- Waybills/Manifests from the soil transporter;
- Soil description;
- Contaminant; and,
- Receiving facility.

In all instances, the following methodology is used for collection of confirmatory samples. Samples are collected by hand using appropriate gloves, a trowel, and/or a shovel. Following proper Health and Safety requirements, samples may also be collected from the excavator bucket. In this instance, careful attention is paid to determine the original location of the sample and to avoid cross-contamination.

Discrete grab samples are collected from each excavation face based on a grid system to obtain sufficient spatial coverage. Samples are collected within a 25cm perpendicular distance from the walls and floor of the excavation to ensure that representative and undisturbed soil samples are collected.

Depending on the quality of the material, samples within one orientation (vertical wall or horizontal floor) may be composited. If n-numbers of composites are used, the concentrations are compared to the regulatory standards divided by the nth-number of composites.

The procedures for sample handling and shipping is in essence the same as for the in-situ soil characterization and therefore not further discussed here.

2. Groundwater Monitoring Well Installation, Development and Sampling, and Surface Water Sampling

NEXT developed this groundwater sampling protocol based on the following documents:

- BC Ministry of Environment and Climate Change Strategy, Protocol 21 - Water Use Determination ("P21") - Version 2.0, October 31, 2017, effective date: November 1, 2017;
- BC Ministry of Environment and Climate Change Strategy, Technical Guidance 8 - Groundwater Investigation and Characterization ("TG8") – Version 2, effective date: November 1, 2017;
- Golder Associates Ltd., Technical Guidance for Contaminated Sites - Groundwater Investigation in Site Assessment, 2nd Edition, June 17, 2010;
- Canadian Council of Ministers of the Environment ("CCME"), Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites, Volume I: Main Report, December 1993; and,
- British Columbia Field Sampling Manual (2013 Edition), January 2003; and,
- US EPA, Puls and Barcelona, Low-Flow (minimal drawdown) ground-water sampling procedures, April 1996.

Groundwater and surface water investigations may include the following tasks:

I. **Groundwater monitoring well installation;**
II. **Groundwater monitoring well development;**
III. **Groundwater monitoring well sampling; and,**
IV. **Surface water sampling.**

The subsequent sections provide a detailed description of the methodology for each task.

I. Groundwater Monitoring Well Installation

The objective of installing any groundwater monitoring well is to collect representative groundwater samples. During drilling, water-bearing zones are identified in the subsurface based on several factors including moisture content, geology, and/or known groundwater depth, etc. This assists in determining optimal depths to install monitoring well screens.

Groundwater monitoring wells are installed by a qualified drilling subcontractor. The type and construction of monitoring wells is Site-specific. Conventional groundwater monitoring wells are generally constructed with 51mm (2") diameter, Schedule 40, threaded PVC pipe with 0.25 mm (~0.01") slotted screen (note that PVC pipe may deteriorate in presence of high concentrations of chlorinated hydrocarbons, aromatics, alkyl sulfides or ketones. In that case, a Teflon or stainless steel pipe may be used. The well casing material should be certified, wrapped clean pipes. Otherwise, it needs to be steam cleaned prior to use.), which is placed within the targeted geological unit.

The slotted screen is capped and placed into the borehole. It can rest directly onto sloughed material or on a thin layer of approximately 0.07m (~1/4') of sand. If the borehole extends deeper than the screen depth, bentonite is used to backfill and seal the hole below the screen. The annular space around the screen is filled with 20 to 40 mesh size filter sand. To maintain a separation between the bentonite seal and well screen and to allow the compaction of filter pack and settling of infiltration during well development, the sand pack can be up to 1.5m (~5') and typically 0.15m (~0.5') above and below the well screen. The length of well screen is typically 1.5 m (5') or less, with the total sandpack not exceeding 1.8m. A seal is then installed above the sand pack using chemically unaltered bentonite chips to approximately 0.3m (~1') from grade. Sand is then added above the seal to install a flush mount roadbox or a stick-up well (the PVC is left above the ground surface with a protective casing for security, if needed). The top of the well is sealed with a j-plug. The top and underside of the cover and/or the side of the PVC is labeled with the borehole name.

The maximum saturated screen lengths should not exceed 1.8m (~6') including screen plus filter pack. Longer screens may result in increased sample dilution. Therefore, screens longer than 1.5m (~5') are generally not installed during NEXT investigations. Rationale is provided in instances where screen lengths may be longer due to Site-specific factors. Shorter

screens may be installed to ensure that screens do not straddle stratigraphic units. In some instances, when more than one stratigraphic unit needs to be targeted, two or more monitoring wells may be nested in a single borehole. A sufficiently thick bentonite seal (at least 3') is placed between multiple screens in the borehole to seal off the annulus. Monitoring wells for sampling of petroleum hydrocarbons and for targeting LNAPL are typically screened across the water table. Monitoring wells for sampling of solvents and for targeting DNAPL are typically screened at the bottom of a saturated zone or right above a confining layer. The well screen also should be placed at the bottom of a borehole to avoid the borehole becoming a "sediment trap" for DNAPL.

In addition to field notes taken during the drilling investigation, the following groundwater monitoring well construction and installation information is recorded for creating borehole logs:

- Diameter(s) of PVC;
- Depth range of screen and slot size;
- Depth range of the PVC pipe;
- Roadbox construction details or height of stickup; and,
- Types and depth ranges of seal and filter pack.

II. Groundwater Monitoring Well Development

Monitoring well development is typically completed after a waiting period of 24 hours or more following installation, in order to allow for proper hydration and settling of the sealant (bentonite). However, Site specific recharge rates may require a longer wait time. Nitrile gloves are worn during well development and changed between each monitoring well or more often, if deemed necessary. Well development tasks are typically conducted in the following order:

- The depth to the bottom of the well and to the groundwater is measured to calculate the water volume in the well;
- Well development is conducted and considered sufficient if any of the following is achieved:
    - Up to ten well volumes of water was removed;
    - The well has gone dry three times after it was allowed to recharge for a reasonable amount of time between the three development attempts; or,
    - The water is visually clear after at least three well volumes have been removed;
- Field parameters such as pH, TDS, electrical conductivity, temperature, dissolved oxygen, redox potential and/or turbidity may be monitored to assist in determining when a well is properly developed; and,
- Groundwater removed from the well is generally stored in on-Site drums that are labeled with the well name. Once analytical data is received and the water has been characterized, the drums and their contents are disposed of at a certified facility.

Depending on the depth and recharge of the well, the following options for well development may be used:

- A Waterra inertial pump consisting of new 5/8" OD x 1/2" ID HDPE tubing and a foot valve. A surge block is used for development in fine soils to assist with removal of fines;
- A down-hole battery powered whale pump (cleaned between monitoring wells) with dedicated PVC tubing for fast recharge or large water volumes; or,
- A 2" Grundfos RediFlo submersible pump, multi-stage whale or bladder pumps, or a dedicated bailer for deep wells (>10m) or minimal water volumes.

NEXT Monitoring Well Development Forms are used to document the following for each well:

- Well ID;
- Project number;
- Address;
- Date;

- NEXT staff;
- Unique sample name; and,
- Groundwater depth before well development.

III. Groundwater Monitoring Well Sampling

Monitoring well sampling is typically conducted after a sufficient waiting period following the well development, in order to allow for equilibration of the well with the surrounding formation. Nitrile gloves are worn during sampling and changed between each monitoring well, or more often if deemed necessary. Well sampling tasks are typically conducted in the following order:

- In some instances, a headspace vapour reading for combustible vapours may be collected from the well head immediately after removing the j-plug;
- The depth to the bottom of the well and to the groundwater is measured to calculate the water volume in the well;
- If Light Non-Aqueous Phase Liquid ("LNAPL") or Dense Non-Aqueous Phase Liquid ("DNAPL") is known or suspected to be present, its thickness in mm is recorded by using a dedicated bailer or interface probe;
- Prior to sample collection, purging of the well is conducted to allow for collection of water samples representative of the formation. Purging is considered sufficient if any of the following is achieved:
    - Stable chemistry has been achieved; or,
    - If stable chemistry readings are not reached after removal of three well volumes, the well is sampled regardless as it is assumed that representative water from the formation has replaced the standing well water; or
    - In wells with very low recharge rates, it may be necessary to collect a sample after the well has gone dry.
- By means of a multi meter (such as a Hanna handheld model or YSI), at least three field parameters (pH, electrical conductivity, and temperature) are monitored to determine whether stable chemistry has been reached. The readings are considered stable if they fall within the following limits for three successive readings within a reasonable timeframe:
    - pH: +/- 0.1 units
    - Electrical conductivity: +/- 3%
    - Temperature: +/- 0.2^{o}C
- Additional field parameters may be recorded on an as-need basis:
    - Dissolved Oxygen: +/- 10%
    - Redox Potential: +/- 10mV
    - TDS: +/- 10%
- When purging is completed, groundwater is sampled into laboratory provided clean single-use sample containers and an appropriate number of duplicate samples are collected. Field preservatives are provided by the lab and added to the sample containers as required;
- Samples for volatile compounds ("VOCs") are typically collected last following the purging and low-flow sampling process. However, if the presence of sediment sensitive PCOCs (for instance LEPH/HEPH/PAHs) is anticipated, bailer samples may be collected last. VOC samples are typically collected into vials without headspace and sealed with an air-tight teflon lid; and,
- For collection of dissolved metals samples, groundwater is field filtered through an in-line 0.45 µM filter. At least one volume of water (based on the size of the filter ~100mL) should pass through the filter prior to collecting the sample.
- There are a number of groundwater sampling methods that are applied depending on the well depth, recharge rates and the PCOCs. All pumps are thoroughly cleaned and rinsed between sampling different wells. Single-use dedicated bailers and tubing are used for each well.
- Bailer or bladder pump:
    - This is the preferred equipment for sampling of volatile compounds ("VOCs") because there is no

application of suction pressure. Suction pressure, as is applied during the use of peristaltic pumps, may aerate the sample and cause volatilization of contaminants;
    - Bailers and bladder pumps are suitable for wells with deep water tables (>10m); and,
    - The bailer is typically lowered to the screened interval of the monitoring well to collect the sample. If a bailer is used to assess the presence of LNAPL in wells screened across the water table, only a part of the bailer is submerged to intersect the water table where LNAPL would be expected.
- Low-flow technique with peristaltic pump:
    - This technique is the preferred method for sampling of non-volatile compounds. This is done by using a peristaltic pump with down-well poly tubing. The intake of the tubing is generally placed near the middle of the well screen to reduce disturbance of the water column and keep mobilization of fines to a minimum.
    - Groundwater within the well is purged and sampled at low flow rates (0.1-0.5 L/min). It is generally attempted to have no drawdown of the water column if Site conditions permit. If drawdown is not avoidable due to slow recharge, it is attempted to minimize the drawdown by using the lowest pump rate; and,
    - Due to the limited suction strength of peristaltic pumps, this technique is limited to wells with a depth to water of no more than approximately 8m-10m.
- Other submersible pumps:
    - Other pumps such as the Grundfos RediFlo, an electric submersible variable speed stainless steel pump, may be considered as required and appropriate.

A sufficient number of duplicate samples are collected and all field QA/QC procedures are followed (see "QA/QC Methodology and RPD Tables" Appendix for further information). All samples are labeled with an unambiguous name and placed into a chilled cooler (<10^{o}C). The samples are sent to the laboratory within the prescribed hold times for the PCOCs. A fully completed Chain of Custody ("CoC") form accompanies the samples to the laboratory, and the sample shipment is labeled with the applicable TDG stickers. Samples being collected for legal purposes always include properly recorded documentation, seals, and photographic evidence.

IV. Surface Water Sampling

Surface water samples may be collected from the shore from shallow depths as direct grab samples, or from a boat to reach greater depths using a Van Dorn or similar sampler. The location and depth of the sample collection is determined on a case by case basis to address the issues at hand.

The basic principles of groundwater sampling apply to the sampling of surface water. New nitrile gloves are worn for each sample, laboratory provided containers are used, the samples are field filtered and preservatives are added as required. A portion of the sample is retained to measure one set of field readings including pH, electrical conductivity, and at least one more field parameter. All surface water grab sample details are recorded on a NEXT Field Sampling Form.

A sufficient number of duplicate samples are collected and all field QA/QC procedures are followed (see "QA/QC Methodology and RPD Tables" Appendix for further information). All samples are properly labeled and placed into a chilled cooler (<10^{o}C). The samples are sent to the laboratory within the prescribed hold times for the PCOCs. A fully completed Chain of Custody ("CoC") form accompanies the samples to the laboratory, and the sample shipment is labeled with the applicable TDG stickers. Samples being collected for legal purposes always include properly recorded documentation, seals, and photographic evidence.

3. Soil Vapour Probe Installation, Soil Vapour and Ambient Air Sampling

NEXT developed this soil vapour and ambient air sampling protocol based on the following documents:

- BC Ministry of Environment and Climate Change Strategy, Protocol 22 on Contaminated Sites – Application of Vapour Attenuation Factors to Characterize Vapour Contamination ("P22") - Version 1.0, November 1, 2017;
- BC Ministry of Environment and Climate Change Strategy, Technical Guidance 4 on Contaminated Sites - Vapour Investigation and Remediation ("TG4") - Version 2, November 1, 2017;
- CSAP Soil Vapour Advice and Practice Guidelines Development Panel, Soil Vapour Advice and Practice Guidelines Development Panel - Stage1, October 30, 2009;
- Health Canada, Federal Contaminated Site Risk Assessment in Canada, Part VII: Guidance for Soil Vapour lntrusion Assessment at Contaminated Sites, September 2010; and,
- Science Advisory Board for Contaminated Sites in British Columbia, Guidance on Site Characterization for Evaluation of Soil Vapour lntrusion into Buildings, May 2011.

Vapour investigations may include the following tasks:

I. **Vapour Probe Installation;**
II. **Vapour Probe Equilibration;**
III. **Field Tests;**
IV. **Purging and Sampling;**
V. **Applying Ministry-Prescribed Attenuation Factors;**
VI. **Applying Ministry-Prescribed Adjustment Divisors; and,**
VII. **Ambient Air Sampling.**

The subsequent sections provide a detailed description of the methodology for each task.

I. Vapour Probe Installation

Sub-slab or sub-surface vapour probes are installed by approved subcontractors for the purpose of collecting and assessing air samples.

Sub-slab vapour probes typically consist of a brass or stainless steel barb inserted into the concrete slab of a building. The barb is fixed and sealed in place with concrete and/or a silicone sleeve. Underneath the probe, a void space of less than 0.1m is drilled into the subsurface.

Sub-surface vapour probes consist of a 0.15m long stainless steel screen attached to Teflon tubing. The probe (connected to the tubing) is placed into a borehole by itself, or may be nested with a monitoring well into the same borehole. Ideally, the seal between the sand packs of the vapour probe and the monitoring well is at least 1m. The annular space around the probe is filled with filter sand to approximately 0.05m above and below the screened interval. The borehole above and below the sand pack is sealed using hydrated bentonite. The well is completed with a flush mount roadbox that is concreted in place. The uncovered portion of the Teflon tubing is left inside the roadbox, where it is folded and zap-strapped to prevent any water from entering the tubing. Rationale is provided if a sub-surface vapour probe is installed at depths shallower than 0.45m below ground level.

If sub-surface shallow vapour probes (for the assessment of shallow soil vapour source) are installed in an area with an unsealed bare ground, a surface seal is installed as follows:

- To estimate outdoor exposure vapour concentrations: The non-porous surface seal with a size of 1.5m x 1.5m should be installed at least 24 hours prior to sampling.
- To estimate indoor exposure vapour concentrations: The size of the surface seal depends on the size of the future building, and should be installed ~6-8 months prior to sampling. Rationale is provided if the seal is

installed for a shorter duration.

In addition to all the required field notes collected during the drilling investigation, soil vapour probe construction and installation information also includes the following:

- Type of sub-slab vapour probe used, thickness of slab, and depth of void space below slab;
- Depth range of the screen;
- Length of Teflon tubing;
- Roadbox construction details; and,
- Types and depth ranges of sand pack and sealant.

II. Vapour Probe Equilibration

Following installation of vapour probes, it takes some time for the probes to develop a proper seal as the grout and concrete dries and the bentonite is hydrated. Depending on the installation method, the following minimum equilibration times are applied.

Soil Vapour Probe Type	Equilibration Time
Driven probes	20 minutes
Subslab probes	3 hours
Direct push	1 day
Sub-surface probes installed in auger holes without use of air or water	2 days
Sub-surface probes installed with vac truck or drilling methods using air (ODEX) or water (sonic)	1 week

III. Field Tests

Three field tests are conducted prior to purging and sampling to verify the integrity of the sampling train and the vapour probe installation. Probes are only sampled if all three tests pass the acceptance criteria. Vacuum tests are done every time a sample is collected for each probe. The helium leak tests are completed at least once for each installation during the first sampling event. For subsequent sampling events, the leak test is completed at approximately 10% of the installations.

- Shut-in vacuum test: The performance of the sampling train is tested by evaluating the amount of vacuum loss within the train when using an SKC Universal Sample Pump (Model 224-PCXR4). When using a digital SKC Pocket Pump Touch, the shut-in vacuum test is not done because no sample train is needed A vacuum of approximately 20 inches of water (maximum reading by Dwyer digital manometer, Model 477) is induced on the sampling train for 5 minutes by shutting off a ball valve near the well/probe and furthest down-stream (but before the Tygon tubing regulator train). The acceptance criteria for the test is <0.01 for Q_{leak}:Q_{purge}.

$$Q_{leak}:Q_{purge} = \frac{35*(initial\ vacuum - final\ vacuum)}{406*(flow\ rate)*\Delta t}$$

- Probe vacuum test: The performance of the vapour well/probe is tested during purging by measuring the vacuum induced by pumping. The acceptance criteria for the test is a vacuum of less than 10 inches of water. If the vacuum is exceeding this threshold, the purge rate may be lowered to reach the acceptance criteria.

- Helium leak test: The integrity of the annular seal around the vapour probe is tested with a Helium ("He") tracer leak test. An incomplete annular seal could result in the introduction of atmospheric air into the monitoring well

("short-circuiting"). A shroud is installed at ground surface at the top of the monitoring well and filled with He gas. The He shroud concentration is monitored with a portable Helium detector (Dielectric Technologies Model MGD-2002). After purging 2-3 well volumes from the vapour well, a vapour sample is slowly collected in a Tedlar bag from the monitoring well using the SKC Universal Sample Pump (Model 224-PCXR4), and the He concentration in the test sample is measured. This concentration is compared to the He concentration in the shroud, and the leakage percentage is calculated. The acceptance criteria for the test is <2% leakage.

*Leakage % = ([He] sample / [He] shroud) * 100*

IV. Purging and Sampling

Purging and sampling is only conducted during dry weather or rainfall events with <10mm of rain over the preceding 24-hour period. Prior to sampling, sub-surface probes are purged of at least three probe volumes (including air-filled pore volume, probe, and tubing) or purged for 2 minutes for a sub-slab probe using a SKC Universal Sample Pump (Model 224-PCXR4) or the digital SKC Pocket Pump Touch. The purging should be limited to flow rates that do not exceed a vacuum of 10 inches of water.

Vapour samples are collected using Thermal Desorption ("TD") tubes or Summa canisters. Summa canisters and/or TD tubes are conditioned by the laboratory and have unique serial numbers. The vapour sampling duration and flow rate are predetermined based on the minimum vapour sampling volume required by the laboratory based on the PCOCs. Flow rates for TD tube sampling should not exceed 200 ml/min.

- TD tubes: The inside of TD tubes is coated with adsorbing material and both ends of the tube are covered with metal swagelocks. The required air flow direction is indicated by an arrow on the tube. A soil vapour sample is collected using dedicated Teflon tubing and a SKC pump. When using a SKC Universal Sample Pump (Model 224-PCXR4) the regulator on the tygon tubing is calibrated with a designated TD tube attached ("dummy tube") to account for the flow restriction induced by the TD tube. Precautions are taken not to contaminate the TD tubes (e.g. reducing the exposed silicon tubing in the sampling train, using new gloves after handling the plumbers' putty used to seal the helium shrouds, etc.). When using a digital SKC Pocket Pump Touch a dummy tube is not needed. A duplicate sample is collected concurrently with the sample as follows:
    - One pump, two Y-splitters: Two Y-splitters are inserted into the sampling train to divert the flow through two TD tubes. One pump is used and the regular sample time is doubled.
- Summa canisters: The valve on the canister is initially closed and the inlet covered with a brass nut. For sampling, the nut is removed, the inlet is attached to the sampling train with a Y-splitter, and the valve is opened. A regulator indicates when an appropriate volume of vapour has been collected. The canister is sealed with the original nut and delivered to the laboratory for vapour analysis. Summa canister duplicate-sample pairs are collected using a laboratory supplied Y-splitter.
- NEXT Soil Vapour Sampling Forms are used to document the following:
    - Unique sample name (based on NEXT sample naming guidelines);
    - Sample date;
    - Project number;
    - Company name;
    - Canister/tube serial number;
    - Regulator serial number; Time required to collect the sample; and
    - Total volume sampled

A sufficient number of duplicate samples are collected and all field QA/QC procedures are followed (see the "QA/QC Methodology and RPD Tables" Appendix for further information). All samples are labeled with an unambiguous name

and placed into a cooler. Cooling of the TD tubes is conducted as per the laboratory's instructions. The samples are sent to the laboratory within the prescribed hold times for the PCOCs. A fully completed Chain of Custody ("CoC") form accompanies the samples to the laboratory, and the sample shipment is labeled with the applicable TDG stickers. Samples collected for legal purposes always include properly recorded documentation, seals, and photographic evidence.

V. Applying Ministry-Prescribed Attenuation Factors

Vapour concentrations in the indoor or outdoor breathing zone are estimated by applying Ministry-approved vertical vapour attenuation factors ("VAFs") to the measured subsurface vapour concentrations using the following formula:

$$C_{V\text{-}I/V\text{-}O} = C_{V\text{-}SS} * \alpha$$

$C_{V\text{-}I/V\text{-}O}$: estimated indoor/outdoor vapour concentration (µg/m^3)
$C_{V\text{-}SS}$: measured subsurface vapour concentration (µg/m^3)
α: vapour attenuation factor (unitless)

Soil vapours under TG4 are regulated for two different exposure scenarios, indoor and outdoor. Attenuation factors are selected based on the applicable land use, exposure scenario, and sample depth.

A 10-fold adjustment of the vapour attenuation factor to account of biodegradation may be applied for BTEX under certain circumstances using the following formula:

$$\alpha_{bio} = \alpha / 10$$

α_{bio}: biodegradation vapour attenuation factor (unitless)

Rationale is provided if α_{bio} is applied.

VI. Applying Ministry-Prescribed Adjustment Divisors

VAFs may be adjusted to account for additional attenuation using one or more attenuation adjustment divisors ("AADs"):

- A biodegradation attenuation adjustment divisor (BAAD);
- A parkade attenuation adjustment divisor (PAAD); or
- Lateral attenuation adjustment divisors (LAADs).

If no precluding conditions exist, AADs may be applied using the following formula:

$$C_{V\text{-}I} = C_{V\text{-}SS} * \alpha_I / AAD$$

$$C_{V\text{-}O} = C_{V\text{-}SS} * \alpha_O / AAD$$

VII. Ambient Air Sampling

In some cases, ambient air samples may be collected in addition to or in lieu of subsurface soil vapour samples. Since ambient air samples represent concentrations of contaminants in the breathing zone, attenuation factors are not applied. Shut-in vacuum, probe vacuum and helium leak tests are not required. Ambient air samples are typically collected using Summa canisters to allow for a sample collection over a prolonged time period to replicate potential exposure scenarios. Rationale is provided if TD tubes are used.

A sufficient number of duplicate samples is collected and all field QA/QC procedures are followed (see the "QA/QC Methodology and RPD Tables" Appendix for further information). All samples are labeled with an unambiguous name and placed into a chilled cooler (<10^{o}C), if cooling is required. The samples are sent to the laboratory within the prescribed

hold times for the PCOCs. A fully completed Chain of Custody (“CoC”) form accompanies the samples to the laboratory, and the sample shipment is labeled with the applicable TDG stickers. Samples collected for legal purposes always include properly recorded documentation, seals, and photographic evidence.

4. Elevation Survey

NEXT developed elevation survey protocols based on the following documents:

- BC Ministry of Environment and Climate Change Strategy, Technical Guidance 8 - Groundwater lnvestigation and Characterization ("TG8") – Version 2, effective date: November 1, 2017.

Elevation surveys are primarily completed to verify the groundwater flow direction at a Site, but they may be used for other purposes. As per TG 8, groundwater flow direction should be established during a Stage 2 PSI. This requires a minimum of three monitoring wells arranged in a triangular plane and installed within the same aquifer. However, in some cases installation of less than 3 monitoring wells may be sufficient to complete an adequate Stage 2 PSI. If less than three suitable monitoring wells have been installed at a Site, an elevation survey may not be conducted and groundwater flow may not be verified at a Stage 2 level.

Elevation surveys are either completed by NEXT or preapproved subcontractors. There are two main type of surveys:

- Geodetic: The surveyed locations are referenced to a survey monument and tied into the geodetic elevation of the area/region.

- Arbitrary: An arbitrary site datum of 100m is assigned to a fixed benchmark and all locations are surveyed relative to this reference point.

Additionally, the horizontal locations of each investigation locations is surveyed relative to property lines of the Site.

Appendix D
Borehole Logs

NEXT Environmental Inc.

Borehole Log: BH101/BH101v

Project No.: SOL040704.01 **Logged By:** AM

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: Adjacent to the northern property line

Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.00
0–2	0–0.61		***SAND and GRAVEL*** Brown, medium-dense, moist	0.61
2–10	0.61–3		***SILTY SAND (TILL) and GRAVEL*** Grey/brown, dense, damp	
7–10	2–3		Hydrocarbon odour from 6ft down	
10–15	3–4.6		less odour from 25ft down	
15–30	4.6–9		no odour from 30ft down	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0–250–500)	% LEL (0–50–100)
BH101-01			370	
BH101-02		Y	>500	
BH101-03,04				48
BH101-05				74
BH101-06		Y		100
BH101-07			90	
BH101-08				100
BH101-09				35
BH101-10,45		Y	280	
BH101-11			210	
BH101-12			150	
BH101-13		Y	55	

Borehole Completion: BH101, BH101v

Drilled By: On-Track Drilling

Drill (Sample) Method: Sonic

Drill Date: February 16&20, 2018

Depth to Water (below top) (m): 27.4

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: Y

Vapour Analysis: Y

Sheet: 1 of 4

NEXT Environmental Inc.

Borehole Log: BH101/BH101v

Project No.: SOL040704.01 **Logged By:** AM

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: Adjacent to the northern property line

Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
			11.28
		SAND and GRAVEL Grey/brown, loose, damp, medium-grained	11.58
		SILTY SAND (TILL) and GRAVEL Grey/brown, dense, damp	12.95
		SAND Grey/white, loose, medium-grained, some gravel, trace silt	13.41
		SILTY SAND (TILL) Grey/brown, dense, damp, some gravel	
			16.76
		SAND and GRAVEL Grey/brown, dense, damp, medium-grained, some silt	17.22
		SILTY SAND (TILL) and GRAVEL Grey/brown, dense, damp	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)
BH101-14			65	
BH101-15		Y	90	
BH101-16		Y	0	
BH101-17			50	
BH101-18			35	
BH101-19,20			20	
BH101-21		Y	370	
BH101-22			65	
BH101-23			40	
BH101-24			60	
BH101-25			85	
BH101-26			85	

Borehole Completion

Drilled By: On-Track Drilling

Drill (Sample) Method: Sonic

Drill Date: February 16&20, 2018

Depth to Water (below top) (m): 27.4

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: Y

Vapour Analysis: Y

Sheet: 2 of 4

NEXT Environmental Inc.

Borehole Log: BH101/BH101v

Project No.: SOL040704.01 **Logged By:** AM

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: Adjacent to the northern property line

Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
19			
20			
21			21.34
22		***SANDY SILT (TILL)*** Brown, dense, moist, some gravel	22.86
23		***SAND and GRAVEL*** Brown, loose, damp, some silt	24.38
24		***SAND*** Grey, loose, moist, medium-grained, some gravel	24.99
25		***SANDY SILT (TILL)*** Grey, dense, damp, some gravel	25.30
		SAND and GRAVEL Grey, loose, dry, medium-grained	25.91
26		***SILTY SAND (TILL) and GRAVEL*** Gray, loose, moist	
27			

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)
BH101-27			300	
BH101-28			220	
BH101-29			110	
			100	
BH101-31		Y	370	
BH101-32			370	
BH101-33			120	
BH101-34,35			110	
BH101-36				10
BH101-37				20
BH101-38				10
BH101-39				15

Borehole Completion

Depth

Drilled By: On-Track Drilling

Drill (Sample) Method: Sonic

Drill Date: February 16&20, 2018

Depth to Water (below top) (m): 27.4

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: Y

Vapour Analysis: Y

Sheet: 3 of 4

NEXT Environmental Inc.

Borehole Log: BH101/BH101v

Project No.: SOL040704.01 **Logged By:** AM

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: Adjacent to the northern property line

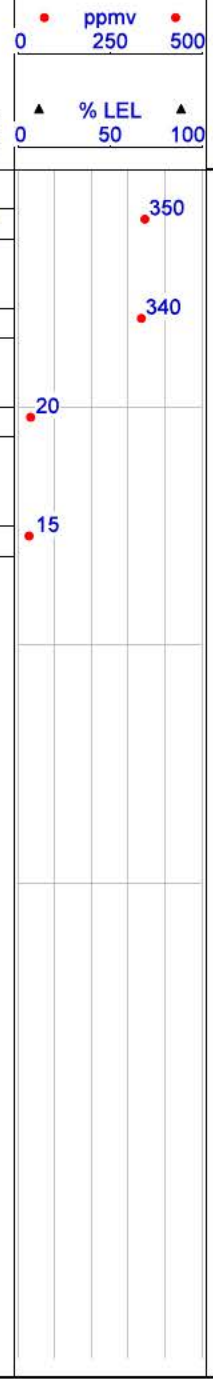
Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
28			
29			
30			30.48
31		End of Borehole	
32			
33			
34			
35			
36			

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab
BH101-40,44		Y
BH101-41		
BH101-42		
BH101-43		



Drilled By: On-Track Drilling

Drill (Sample) Method: Sonic

Drill Date: February 16&20, 2018

Depth to Water (below top) (m): 27.4

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: Y

Vapour Analysis: Y

Sheet: 4 of 4

NEXT Environmental Inc.

Borehole Log: BH102

Project No.: SOL040704.01 **Logged By:** PZ

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: Near the Site's western property line

Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.00
0–10	0–3		***SILTY SAND*** Brown, loose, dry, some gravel	
10	3			3.05
10+	3+		End of Borehole	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)
BH102-01			25	
BH102-02			35	
BH102-03		Y	0	
BH102-04			0	
BH102-05			25	

Borehole Completion: 

Drilled By: VanMars Drilling

Drill (Sample) Method: Solid Stem Auger

Drill Date: February 20, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 1 of 1

NEXT Environmental Inc.

Borehole Log: BH103

Project No.: SOL040704.01 **Logged By:** PZ

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: South of BH102

Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
0		Ground Surface	0.00
0 – 3		***SILTY SAND and GRAVEL*** Grey, loose, moist	
3			3.05
3		End of Borehole	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 – 250 – 500)	% LEL (0 – 50 – 100)
BH103-01			60	
BH103-02			0	
BH103-03			5	
BH103-04,05			10	
BH103-06			5	

Borehole Completion: backfilled

Depth: ft 0 – 30, m 0 – 9

Drilled By: VanMars Drilling

Drill (Sample) Method: Solid Stem Auger

Drill Date: February 20, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 1 of 1

NEXT Environmental Inc.

Borehole Log: BH104

Project No.: SOL040704.01 **Logged By:** PZ

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: east of BH103

Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
0		Ground Surface	0.00
0		***SILTY SAND (TILL)*** Brown, loose, dry, some gravel	
1		Grey from 2ft down	
3			3.05
3		End of Borehole	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)
BH104-01			0	
BH104-02			0	
BH104-03			10	
BH104-04			0	
BH104-05			0	

Borehole Completion

Depth: ft 0–30, m 0–9

Drilled By: VanMars Drilling

Drill (Sample) Method: Solid Stem Auger

Drill Date: February 20, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 1 of 1

NEXT Environmental Inc.

Borehole Log: BH105

Project No.: SOL040704.01 **Logged By:** PZ

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: east of BH102

Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
0		Ground Surface	0.00
0 – 3		***SILTY SAND (TILL)*** Grey, dense, dry, some gravel Brown from 3ft down	
3			3.05
3		End of Borehole	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 – 250 – 500)	% LEL (0 – 50 – 100)
BH105-01			30	
BH105-02			15	
BH105-03		Y	15	
BH105-04,05			25	
BH105-06			15	

Borehole Completion

Depth: ft 0 – 30, m 0 – 9

Drilled By: VanMars Drilling

Drill (Sample) Method: Solid Stem Auger

Drill Date: February 20, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 1 of 1

NEXT Environmental Inc.

Borehole Log: BH106

Project No.: SOL040704.01 **Logged By:** PZ

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: east of BH105

Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
0		Ground Surface	0.00
0 – 3		***SILTY SAND (TILL) and GRAVEL*** Grey/brown, dense, dry	
3			3.05
3		End of Borehole	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 – 250 – 500)	% LEL (0 – 50 – 100)
BH106-01			0	
BH106-02			0	
BH106-03		Y	5	
BH106-04			5	
BH106-05			0	

Borehole Completion

Depth: ft 0 – 30, m 0 – 9

Drilled By: VanMars Drilling

Drill (Sample) Method: Solid Stem Auger

Drill Date: February 20, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 1 of 1

NEXT Environmental Inc.

Borehole Log: BH107

Project No.: SOL040704.01 **Logged By:** PZ

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: east of BH106

Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
0		Ground Surface	0.00
0 – 3		***SILTY SAND (TILL) and GRAVEL*** Grey/brown, dense, dry	
3			3.05
3		End of Borehole	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 – 250 – 500)	% LEL (0 – 50 – 100)
BH107-01			5	
BH107-02			20	
BH107-03			0	
BH107-04			0	
BH107-05			0	

Borehole Completion

Depth: 0 – 30 ft / 0 – 9 m

Drilled By: VanMars Drilling

Drill (Sample) Method: Solid Stem Auger

Drill Date: February 20, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 1 of 1

NEXT Environmental Inc.

Borehole Log: BH108

Project No.: SOL040704.01 **Logged By:** PZ

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: east of BH109

Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE / SAMPLE / BOREHOLE COMPLETION

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.	Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)	Borehole Completion
0	0		Ground Surface	0.00						
0–10	0–3		***SILTY SAND (TILL) and GRAVEL*** Brown, loose, dry		BH108-01			0		
					BH108-02			0		
					BH108-03			0		
					BH108-04			10		
					BH108-05,06			0		
10	3		End of Borehole	3.05						

Drilled By: VanMars Drilling

Drill (Sample) Method: Solid Stem Auger

Drill Date: February 20, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 1 of 1

NEXT Environmental Inc.

Borehole Log: BH109

Project No.: SOL040704.01 **Logged By:** PZ

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: east of BH101

Site Address: 1350 Johnston Rd., White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
0		Ground Surface	0.00
0 – 3		***SILTY SAND (TILL) and GRAVEL*** Grey/brown, dense, dry Hydrocarbon odour from 5ft down	
3		End of Borehole	3.05

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 – 250 – 500)	% LEL (0 – 50 – 100)
BH109-01			0	
BH109-02			0	
BH109-03		Y	0	
BH109-04			0	
BH109-05		Y	130	

Borehole Completion: 

Depth: ft 0–30, m 0–9

Drilled By: VanMars Drilling

Drill (Sample) Method: Solid Stem Auger

Drill Date: February 20, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 1 of 1

NEXT Environmental Inc.

Borehole Log: BH201

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By western boundary of Site

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.00
0–3	0–1		**SAND AND GRAVEL** Brown, sand and gravel, poorly sorted, medium dense, moist, non-odourous.	0.91
3–26	1–8		**Silty SAND AND GRAVEL** Grey, silty sand and gravel (till) with trace cobbles, poorly sorted, medium dense, moist, non-odourous.	7.92
26–29	8–		**SAND AND GRAVEL** Grey, sand and gravel (till), poorly sorted, loose, moist, non-odourous.	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)
01			60	
02			20	
03			0	
04			>500	>500
05		Y		>500
06			0	
07				490
08		Y		400
09			45	
10			15	

Borehole Completion

Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 08, 2018

Depth to Water (below top) (m): 30.51

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: Y

Sheet: 1 of 4

NEXT Environmental Inc.

Borehole Log: BH201

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By western boundary of Site

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
			9.14
9		***Silty SAND AND GRAVEL*** Grey, silty sand and gravel (till), with trace cobbles, poorly sorted, medium dense, moist, non-odourous.	
10			
11			11.28
		SAND AND GRAVEL Grey, sand and gravel (till), poorly sorted, loose, moist, non-odourous.	11.58
12		***Silty SAND AND GRAVEL*** Grey, silty sand and gravel (till), poorly sorted, medium dense, moist, non-odourous.	
13			
14			
15			15.24
		Silty CLAY Grey, silty clay and gravel, poorly sorted, medium stiff, moist, non-odourous.	
16			16.46
		Silty SAND AND GRAVEL Grey, silty sand and gravel, poorly sorted, medium dense, moist, non-odourous.	
17			
18			

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)	Borehole Completion
11			>500		
12				105	
13			>500		
14				150	
15				260	
16			>500		
17		Y	>500		
18				430	

Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 08, 2018

Depth to Water (below top) (m): 30.51

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: Y

Sheet: 2 of 4

NEXT Environmental Inc.

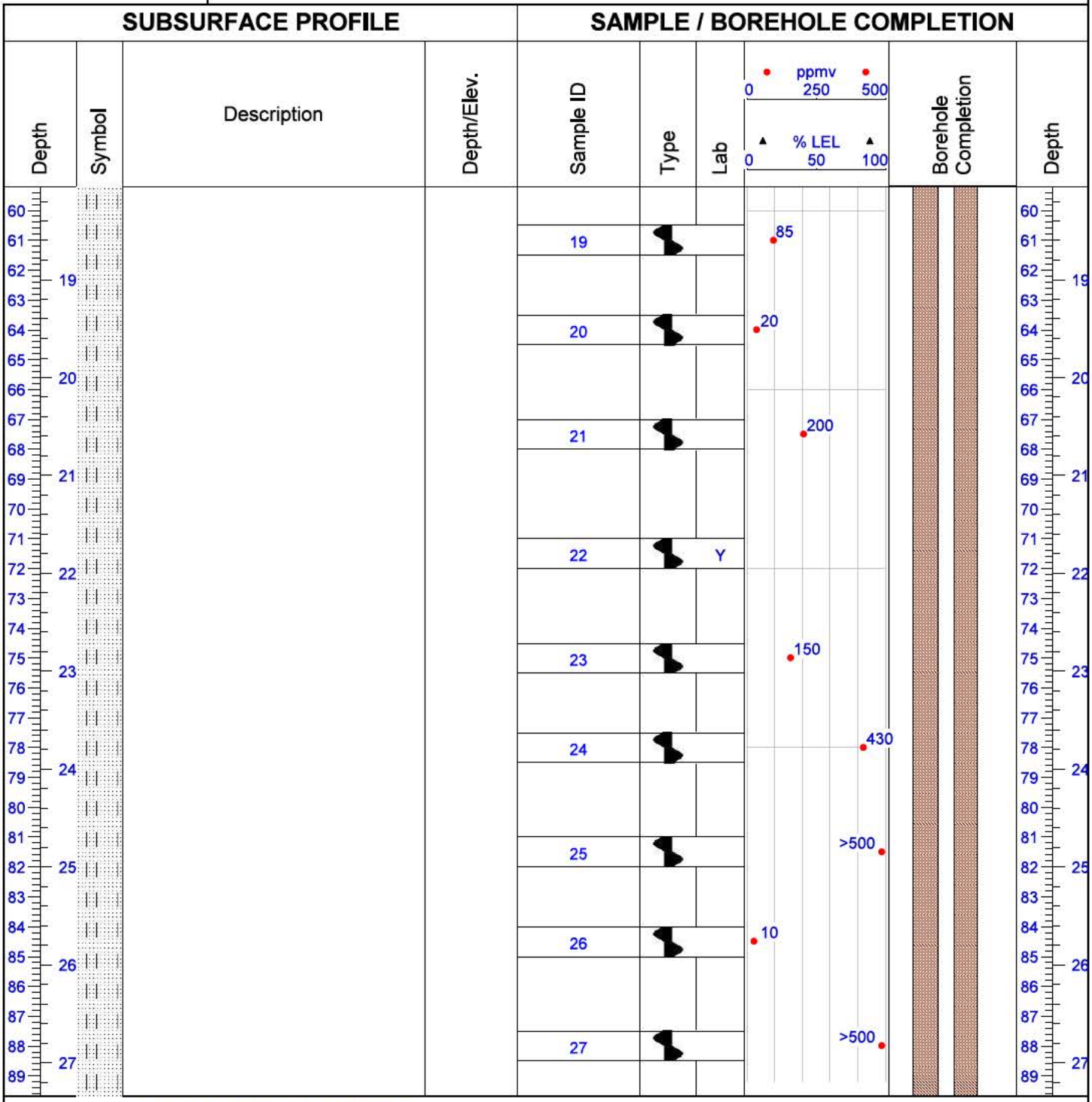
Borehole Log: BH201

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By western boundary of Site

Site Address: 1350 Johnston Road, White Rock, BC



Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 08, 2018

Depth to Water (below top) (m): 30.51

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: Y

Sheet: 3 of 4

NEXT Environmental Inc.

Borehole Log: BH201

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By western boundary of Site

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
			29.26
		SAND AND GRAVEL Grey, sand and gravel, poorly sorted, loose, moist, to wet, non-odourous.	32.31
		End of Borehole	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)
28			>500	
29		Y	>500	
30		Y		95
31				50

Borehole Completion

Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 08, 2018

Depth to Water (below top) (m): 30.51

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: Y

Sheet: 4 of 4

NEXT Environmental Inc.

Borehole Log: BH202/BH202v

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: Eastern portion of Site

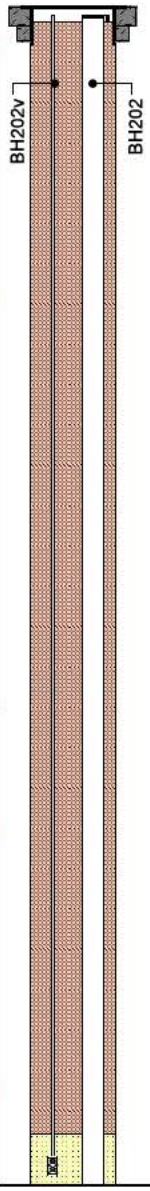
Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth (ft)	Depth (m)	Symbol	Description	Depth/Elev.
0	0		Ground Surface	0.00
0–3	0–1		**SAND AND GRAVEL** Brown, sand and gravel, poorly sorted, medium dense, moist, non-odourous.	1.22
3–26	1–8		**Silty SAND AND GRAVEL** Grey, silty sand and gravel with trace cobbles, poorly sorted, medium dense, moist, non-odourous	7.92
26–30	8–9		**SAND AND GRAVEL** Grey, sand and gravel, poorly sorted, loose, moist, non-odourous.	9.14

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv	% LEL
01		Y	>500	
02			380	
03			0	
04			410	
05			0	
06			0	
07			>500	
08			>500	
09			175	
10			>500	



Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 09, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: Y

Sheet: 1 of 4

NEXT Environmental Inc.

Borehole Log: BH202/BH202v

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: Eastern portion of Site

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
10		***Silty SAND AND GRAVEL*** Grey, silty sand and gravel with trace cobbles, poorly sorted, medium dense, moist, non-odourous.	
11			11.28
		SAND AND GRAVEL Grey, sand and gravel, poorly sorted, loose, moist, non-odourous.	11.58
12		***Silty SAND AND GRAVEL*** Grey, silty sand and gravel, poorly sorted, medium dense, moist, non-odourous.	
13			
14			
15			15.24
		Silty CLAY Grey, silty clay and gravel, poorly sorted, medium stiff, moist, non-odourous.	
16			16.61
17		***Silty SAND AND GRAVEL*** Grey, silty sand and gravel, poorly sorted, medium dense, moist, non-odourous.	
18			

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)	Borehole Completion
11			>500		
12			300		
13			>500		
14			>500		
15			400		
16			250		
17			>500		
18			>500		
19			>500		

Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 09, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: Y

Sheet: 2 of 4

NEXT Environmental Inc.

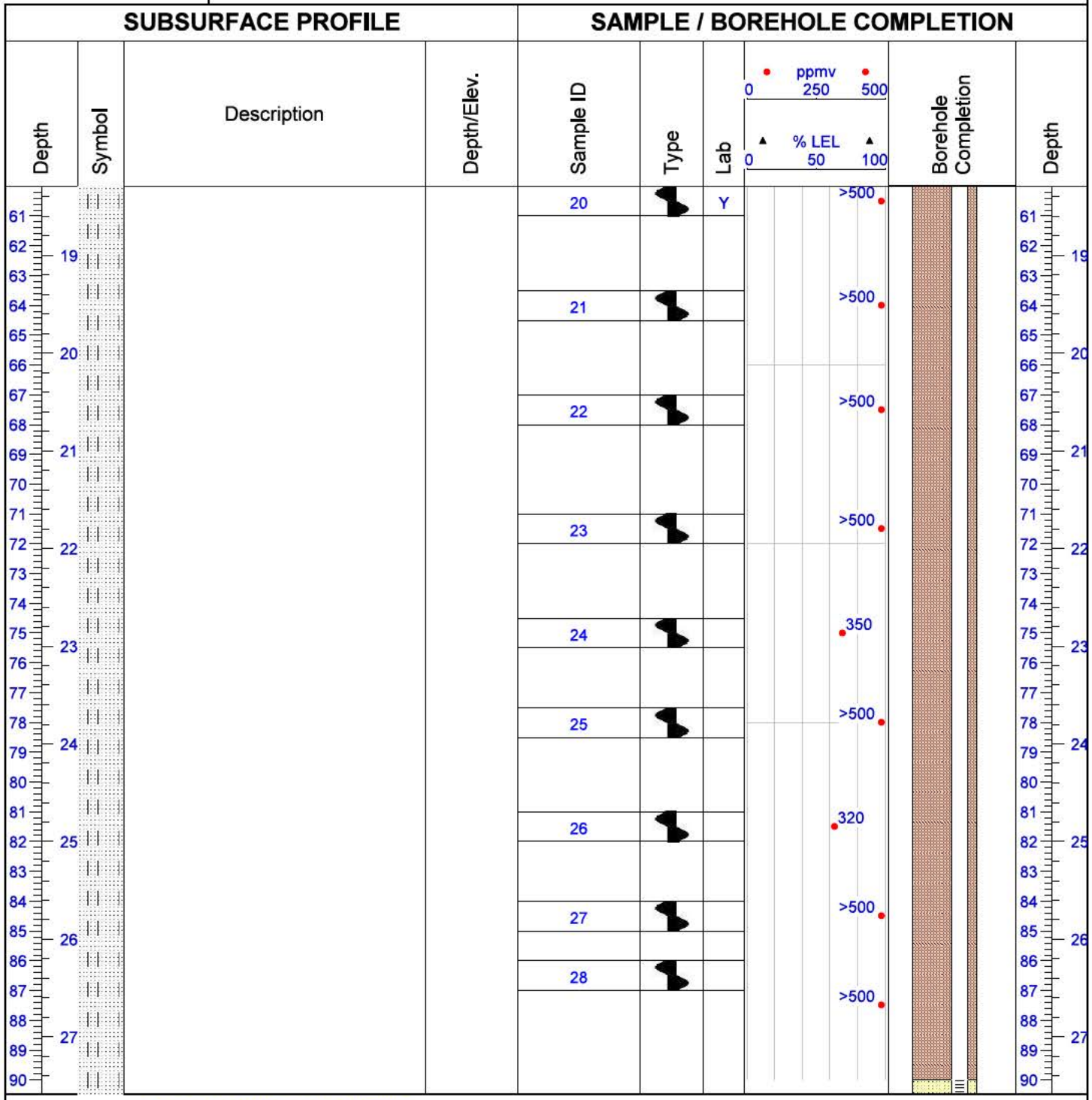
Borehole Log: BH202/BH202v

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: Eastern portion of Site

Site Address: 1350 Johnston Road, White Rock, BC



Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 09, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: Y

Sheet: 3 of 4

NEXT Environmental Inc.

Borehole Log: BH202/BH202v

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: Eastern portion of Site

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
28			
29			29.26
30		***SAND AND GRAVEL*** Grey, sand and gravel, loose, poorly sorted, moist to wet, non-odourous.	30.78
31		End of Borehole	
32			
33			
34			
35			
36			

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)
29			>500	
30		Y	>500	
31			260	

Borehole Completion

Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 09, 2018

Depth to Water (below top) (m): N/A

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: Y

Sheet: 4 of 4

NEXT Environmental Inc.

Borehole Log: BH203/BH203v/BH203vn

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By northern property boundary

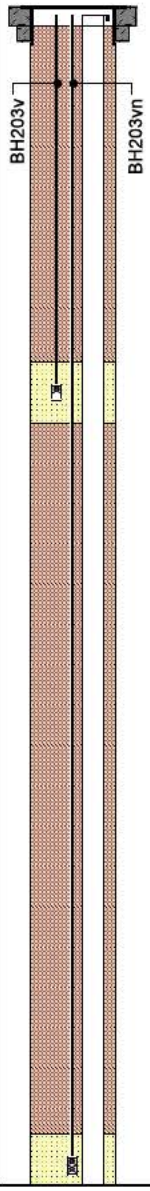
Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
0		Ground Surface	0.00
		Not Logged Please see BH101 for detailed lithology.	

SAMPLE / BOREHOLE COMPLETION

Sample ID | Type | Lab | ppmv (0 250 500) | % LEL (0 50 100) | Borehole Completion | Depth



Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 10, 2018

Depth to Water (below top) (m):

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 1 of 6

NEXT Environmental Inc.

Borehole Log: BH203/BH203v/BH203vn

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By northern property boundary

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE				SAMPLE / BOREHOLE COMPLETION					
Depth	Symbol	Description	Depth/Elev.	Sample ID	Type	Lab	ppmv 0 250 500 / % LEL 0 50 100	Borehole Completion	Depth
31–60		***Not Logged*** Please see BH101 for detailed lithology.							31–60

Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 10, 2018

Depth to Water (below top) (m):

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 2 of 6

NEXT Environmental Inc.

Borehole Log: BH203/BH203v/BH203vn

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By northern property boundary

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

SAMPLE / BOREHOLE COMPLETION

Depth	Symbol	Description	Depth/Elev.	Sample ID	Type	Lab	ppmv 0 250 500 / % LEL 0 50 100	Borehole Completion	Depth
61–90		**Not Logged** Please see BH101 for detailed lithology.							61–90

Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 10, 2018

Depth to Water (below top) (m):

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 3 of 6

NEXT Environmental Inc.

Borehole Log: BH203/BH203v/BH203vn

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By northern property boundary

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
91–100	28–30	**Not Logged** Please see BH101 for detailed lithology.	30.48
01–13	31–34	**Silty SAND AND GRAVEL** Grey, silty sand and gravel, poorly sorted, medium dense, moist, non-odourous.	34.44
13–20	35–36	**SAND AND GRAVEL** Grey, sand and gravel, poorly sorted, loose, moist, non-odourous.	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)
01				>500
02				>500
03		Y		>500
04			105	
05				>500
06				>500

Borehole Completion

Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 10, 2018

Depth to Water (below top) (m):

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

NEXT Environmental Inc.

Borehole Log: BH203/BH203v/BH203vn

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By northern property boundary

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
37–45			
40			42.67
40–50		**Silty SAND AND GRAVEL** Grey, silty sand and gravel, poorly sorted, medium dense, moist to wet, non-odourous.	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)
07			190	
08			>500	
09			>500	
10			>500	
11			320	
12			160	
13		Y	>500	
14			165	
15/16			0	

Borehole Completion: BH203

Depth: 37–45

Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 10, 2018

Depth to Water (below top) (m):

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 5 of 6

NEXT Environmental Inc.

Borehole Log: BH203/BH203v/BH203vn

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By northern property boundary

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
46			46.02
		End of Borehole	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv 0 250 500 / % LEL 0 50 100	Borehole Completion

Depth: 46 47 48 49 50 51 52 53 54

Drilled By: Omega Environmental Drilling

Drill (Sample) Method: Sonic

Drill Date: May 10, 2018

Depth to Water (below top) (m):

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: N

Sheet: 6 of 6

NEXT Environmental Inc.

Borehole Log: BH204/BH204v

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By southern property boundary

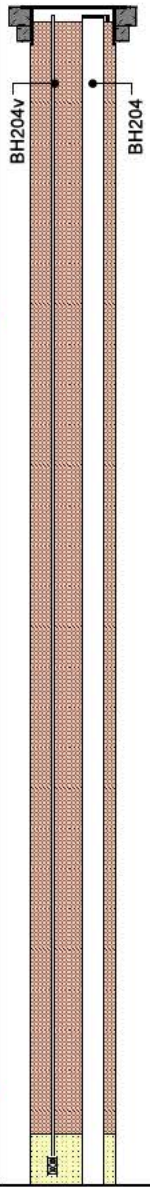
Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
0		Ground Surface	0.00
0–3 ft		**SAND AND GRAVEL** Brown, sand and gravel, poorly sorted, medium dense, non-odourous.	0.91
3–20 ft		**Silty SAND AND GRAVEL** Grey, silty sand and gravel, poorly sorted, medium dense, moist, non-odourous.	6.10
20–25 ft		**SAND AND GRAVEL** Grey, sand and gravel, poorly sorted, loose, moist. non-odourous.	7.62
25–30 ft		**Silty SAND AND GRAVEL** Grey, silty sand and gravel, poorly sorted, medium dense, moist, non-odourous.	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv	% LEL
01			0	
02			15	
03			5	
04			>500	
05			55	
06			5	
07			330	
08			70	
09			115	
10		Y	>500	



Drilled By: Omega Environmental Drilling.

Drill (Sample) Method: Sonic

Drill Date: May 11, 2018

Depth to Water (below top) (m):

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: Y

Sheet: 1 of 4

NEXT Environmental Inc.

Borehole Log: BH204/BH204v

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By southern property boundary

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
			13.41
		Silty CLAY AND GRAVEL Grey, silty clay and gravel, poorly sorted, medium stiff, moist, non-odourous.	14.94
		Silty SAND AND GRAVEL Grey, silty sand and gravel, poorly sorted, medium dense, moist, non-odourous.	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)	Borehole Completion
11			>500		
12			45		
13			>500		
14			450		
15			>500		
16			>500		
18			220	135	
19			>500		

Drilled By: Omega Environmental Drilling.

Drill (Sample) Method: Sonic

Drill Date: May 11, 2018

Depth to Water (below top) (m):

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: Y

Sheet: 2 of 4

NEXT Environmental Inc.

Borehole Log: BH204/BH204v

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By southern property boundary

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
			24.38
		SAND AND GRAVEL Grey, sand and gravel, poorly sorted, moist to wet, non-odourous.	

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)	Borehole Completion
20			340		
21			430		
22			450		
23			220		
24			0		
25			300		
26			350		
28		Y			
27			170		
			>500		

Drilled By: Omega Environmental Drilling.

Drill (Sample) Method: Sonic

Drill Date: May 11, 2018

Depth to Water (below top) (m):

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: Y

Sheet: 3 of 4

NEXT Environmental Inc.

Borehole Log: BH204/BH204v

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By southern property boundary

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.
28			
29			
30			
30.78		End of Borehole	
31			
32			
33			
34			
35			
36			

SAMPLE / BOREHOLE COMPLETION

Sample ID	Type	Lab	ppmv (0 / 250 / 500)	% LEL (0 / 50 / 100)	Borehole Completion
29			480		
30			410		
31			210		

Drilled By: Omega Environmental Drilling.

Drill (Sample) Method: Sonic

Drill Date: May 11, 2018

Depth to Water (below top) (m):

Top of Pipe (top) Well Elevation (m): 0

Surface Grade Elevation (m): 0

Groundwater Analysis: N

Vapour Analysis: Y

Sheet: 4 of 4

NEXT Environmental Inc.

Borehole Log: BH205v

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By western property boundary (Beside BH201)

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE				SAMPLE / BOREHOLE COMPLETION					
Depth	Symbol	Description	Depth/Elev.	Sample ID	Type	Lab	ppmv 0 250 500 / % LEL 0 50 100	Borehole Completion	Depth
ft m		Ground Surface	0.00						ft m
0 0		***Not Logged*** Please refer to BH201 for detailed lithology.							0 0
1									1
2									2
3 1									3 1
4									4
5									5
6 2									6 2
7									7
8									8
9 3									9 3
10									10
11									11
12 4									12 4
13									13
14									14
15 5									15 5
16									16
17									17
18 6									18 6
19									19
20									20
21 7									21 7
22									22
23									23
24 8									24 8
25									25
26									26
27 9									27 9
28									28
29									29
30									30

Vapour Well Installed by: Omega Environmental Drilling.

Vapour Well Installation Method: Sonic

Installation Date: May 10, 2018

Surface Grade Elevation (m): 0

Vapour Analysis: Y

Sheet: 1 of 2

NEXT Environmental Inc.

Borehole Log: BH205v

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By western property boundary (Beside BH201)

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE				SAMPLE / BOREHOLE COMPLETION					
Depth	Symbol	Description	Depth/Elev.	Sample ID	Type	Lab	ppmv 0 250 500 / % LEL 0 50 100	Borehole Completion	Depth
31		**Not Logged** Please refer to BH201 for detailed lithology.	9.45						31
32		End of Borehole							32
33 10									33 10
34									34
35									35
36 11									36 11
37									37
38									38
39									39
40 12									40 12
41									41
42									42
43 13									43 13
44									44
45									45
46 14									46 14
47									47
48									48
49 15									49 15
50									50
51									51
52 16									52 16
53									53
54									54
55									55
56 17									56 17
57									57
58									58
59 18									59 18
60									60

Vapour Well Installed by: Omega Environmental Drilling.

Vapour Well Installation Method: Sonic

Installation Date: May 10, 2018

Surface Grade Elevation (m): 0

Vapour Analysis: Y

Sheet: 2 of 2

NEXT Environmental Inc.

Borehole Log: BH206v/BH206vn

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By northern property boundary (Beside BH203)

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE				SAMPLE / BOREHOLE COMPLETION					
Depth	Symbol	Description	Depth/Elev.	Sample ID	Type	Lab	ppmv 0 250 500 / % LEL 0 50 100	Borehole Completion	Depth
ft m		Ground Surface	0.00						ft m
0 0		***Not Logged*** Not logged, please refer to BH203 for detailed lithology.						BH206v BH206vn	0 0
1									1
2									2
3 1									3 1
4									4
5									5
6 2									6 2
7									7
8									8
9									9
10 3									10 3
11									11
12									12
13 4									13 4
14									14
15									15
16 5									16 5
17									17
18									18
19 6									19 6
20									20
21									21
22 7									22 7
23									23
24									24
25 8									25 8
26									26
27									27
28 9									28 9
29									29
30									30

Vapour Well Installed by: Omega Environmental Drilling. **e Elevation (m):** 0

Vapour Well Installation Method: Sonic **Vapour Analysis:** Y

Installation Date: May 11, 2018 **Sheet:** 1 of 2

NEXT Environmental Inc.

Borehole Log: BH206v/BH206vn

Project No.: SOL040704.02 **Logged By:** JC

Project: DSI **Client:** Solterra Development Corp.

Location of Borehole: By northern property boundary (Beside BH203)

Site Address: 1350 Johnston Road, White Rock, BC

SUBSURFACE PROFILE				SAMPLE / BOREHOLE COMPLETION					
Depth	Symbol	Description	Depth/Elev.	Sample ID	Type	Lab	ppmv 0 250 500 / % LEL 0 50 100	Borehole Completion	Depth
10		**Not Logged** Not logged, please refer to BH203 for detailed lithology.	9.45						10
		End of Borehole							
11									11
12									12
13									13
14									14
15									15
16									16
17									17
18									18

Vapour Well Installed by: Omega Environmental Drilling.

Vapour Well Installation Method: Sonic

Installation Date: May 11, 2018

Surface Grade Elevation (m): 0

Vapour Analysis: Y

Sheet: 2 of 2

Appendix E
QA/QC Methodology and RPD Tables

QUALITY ASSURANCE/QUALITY CONTROL

Next Environmental Inc. ("NEXT") adheres to stringent Quality Assurance/Quality Control ("QA/QC") procedures considering the following documents:

- British Columbia Field Sampling Manual (2013 Edition), January 2003;
- BC Environmental Laboratory Manual, 2015 edition;
- BC Ministry of Environment ("Ministry"), Technical Guidance 1 - Site Characterization and Confirmation Testing, January 2009;
- CSAP Soil Vapour Advice and Practice Guidelines Development Panel, Soil Vapour Advice and Practice Guidelines Development Panel - Stage1, October 30, 2009; and,
- BC Ministry of Environment ("Ministry"), Contaminated Sites – Q&As, October 16, 2015.

NEXT's QA/QC procedures include the following components:

I. **Investigation and Field QA/QC;**
II. **Data processing and reporting QA/QC; and,**
III. **Laboratory QA/QC.**

The subsequent sections provide a detailed description of the methodology for each component.

I. Investigation and Field QA/QC

The QA/QC for field work includes the following tasks:

- Investigation Design: Prior to planning and conducting a Site Investigation, a Conceptual Site Model ("CSM") is developed to ensure that the investigation locations are chosen to adequately assess APECs, and to delineate contamination within the constraints of the Site (i.e. non-movable objects, buildings, utilities, tenant operations, etc.). The CSM contains information including, but not limited to, geological units, hydro stratigraphic units, groundwater tables, contaminant types and source zones, contaminant plumes, contaminant transportation mechanisms, NAPL, preferential pathways, buildings, in-ground structures (basements, USTs, hoists), and potential receptors. A CSM is typically a visual presentation and/or narrative description of the physical, chemical, and biological process occurring or have occurred at the Site. The CSM is continuously updated with data as the investigation progresses.

- Field Investigation: All field staff is familiar with and strictly apply the protocols described in the "Investigation Methodology" Appendix. Adherence to the procedures ensures compliance with regulatory requirements, best practices and comparability of data over the course of an investigation. The sampling protocols are designed to protect the integrity of the samples during collection and shipment. Sample selection for laboratory analysis is based on field observations and screening, and to achieve the investigation requirements.

- Documentation: All field staff use sampling and documentation Forms as described in the "Investigation Methodology" Appendix to establish a comprehensive record of all field activities. The Forms and record system are designed to ensure traceability of samplers and samples, to document adherence to the investigation methodology and to note potential anomalies.

- Instruments and equipment: All in-house and/or rented gear is regularly maintained and calibrated as per the manufacturer's operating manual.

- Sample Containers: Only clean and/or conditioned laboratory provided sample containers are used.

- Sample treatment: To avoid potential false positives in high organic content soils (e.g. peat, woodwaste), in some instances NEXT requests the laboratories to perform a silica-gel cleanup for petroleum hydrocarbons in soil, groundwater, surface water, or sediment samples to remove the effects of naturally occurring hydrocarbons. Sometimes a saturated paste cleanup for sodium and chloride in soils is requested to more accurately reflect the "soluble" concentrations of these ions. Speciation of certain metals may also be performed, for instance chromium III and chromium VI.

- Field duplicates: Field duplicates are multiple (two or more) samples collected at the same location and time using the same method. The purpose of field duplicates is to establish the precision of each substance within the samples and assess the laboratory performance. Guidance on the recommended number of field duplicates relative to the total number of samples (10%) submitted for analysis is provided in TG1 with regards to stockpile sampling. However, this guidance for field duplicates has been widely adopted by the industry as an accepted best practice. Therefore, NEXT submits at least one duplicate sample for every ten samples analyzed and per sampling event. This is done for all environmental media (soil, groundwater, surface water, soil vapour, sediment). Rationale is provided if there is a deviation from this procedure.

II. Data processing and report QA/QC

All analytical results are received from the laboratories in electronic format for import into a centralized in-house database. The database contains a master list of the CSR, CCME and HWR standards for various environmental media. It is regularly maintained to reflect the most recent standards. The database is used to generate tables by completing queries where the analytical results are compared to the standards applicable to the Site. All tables are compared to the laboratory's Certificate of Analysis ("COA") by staff to ensure there are no errors in the automated data processing.

For field duplicate samples, the variability or Relative Percent Difference is calculated using the following equation:

$$RPD\ [\%] = \frac{C_{Max} - C_{Min}}{C_{Max} + C_{Min}} \times 100$$

C_{Max}: higher concentration of sample and duplicate
C_{Min}: lower concentration of sample and duplicate

As per common industry practice, NEXT has adopted the following Data Quality Objectives ("DQO") for the field duplicates.

Parameter Category	Field Duplicate DQO (as RPD) Applicable at Concentrations >5x MDL
Soil and Sediment	20%
Water	20%
Vapour	50%

Note that RPDs are only calculated when the analytical results of the sample and the duplicate are greater than 5 times the laboratory's method detection limit ("MDL"). NEXT generally compares the duplicate with the higher concentration to the standard. Rationale is provided if a different approach is used.

Soil vapour duplicates often show a higher variability compared to soil and water samples. Soil vapour variabilities of ≤50% are not noted in the report, RPDs with ≥50% are noted with a discussion about the implications for the results. For all other environmental media, if the DQOs are not achieved, (i.e. the RDPs are outside the acceptable range), a discussion is provided about how the results may affect the report's validity and conclusion.

III. Laboratory QA/QC

NEXT works exclusively with laboratories that are accredited by the Canadian Association for Laboratory Accreditation ("CALA"). The CALA accredited laboratories are considered qualified laboratories to perform specified chemical analyses as defined by the Environmental Data Quality Assurance Regulation ("EDQA"). The laboratories adhere to strict and standardized QA/QC methods and release data only if all their QA/QC targets are achieved. The laboratories provide the results of their internal QA/QC results in their COA's for each batch of samples that was analysed. These COA's also provide information about the analytical methods, detection limits, method blanks, internal laboratory duplicates, blank spikes, and standard reference materials.

NEXT reviews the laboratory supplied material and data, which includes the following steps:

- Order sampling jars from the laboratory prior to the sampling and ensure correct bottles/jars were delivered (e.g. VOC sampling also needs both 50 ml glass jars for moisture content analysis);

- Check the lab testing parameters on the Sample Receipt Confirmation ("SRC") to see if it matches with the provided PCOC list (especially for VOCs);

Review of COA's received from the laboratories to verify the validity of the data and screen for sample integrity flags.

Field Duplicates (Soil)
Filter: ALL

Lab Report	8021267	8021267	
Field ID	BH101-10	BH101-45	RPD
Sampled Date/Time	2/18/2016	2/18/2016	

ChemName	Units	EQL			
Percentage Solids	%	1	90.7	90.6	0
BTEXS					
Benzene	µg/g	0.02	0.053	0.049	8
Ethylbenzene	µg/g	0.05	0.093	0.082	13
Styrene	µg/g	0.05	<0.05	<0.05	-
Toluene	µg/g	0.2	<0.2	<0.2	-
Xylenes, Total	µg/g	0.1	0.39	0.309	23
VOCs					
Methyl tert-butyl ether [MTBE]	µg/g	0.04	<0.04	<0.04	-
Volatile Hydrocarbons					
VHs6-10	µg/g	20	<20.0	<20.0	-
VPHs	µg/g	20	<20.0	<20.0	-

*RPDs have only been considered where a concentration is greater than 5 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 20 (5-10 x EQL); 20 (10-30 x EQL); 20 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Field Duplicates (Water)
Filter: Lab_Report_Number in('8030(

Lab Report Number	8030689	8030689	
Field ID	BH110	BH160	**RPD**
Sampled Date/Time	3/8/2018 10:30	3/8/2018 10:30	

ChemName	Units	EQL			
BTEXS					
Benzene	µg/L	0.5	**7.0**	**9.5**	**30**
Ethylbenzene	µg/L	1	**48.1**	**69.3**	**36**
Styrene	µg/L	1	<1.0	<1.0	-
Toluene	µg/L	1	**11.8**	**16.1**	**31**
Xylenes, Total	µg/L	2	**90.0**	**118.0**	**27**
VOCs					
Butadiene, 1,3-	µg/L	1	<1.0	<1.0	-
Carbon tetrachloride	µg/L	0.5	<0.5	<0.5	-
Dibromoethane, 1,2-	µg/L	0.3	<0.3	<0.3	-
Dichloroethane, 1,2-	µg/L	1	**67.9**	**83.6**	**21**
Dichloroethylene, 1,1-	µg/L	1	<1.0	<1.0	-
Dichloroethylene, 1,2-trans	µg/L	1	<1.0	<1.0	-
Dichloroethylene, 1,2-cis	µg/L	1	<1.0	<1.0	-
Dichloromethane	µg/L	3	<3.0	<3.0	-
Isopropylbenzene	µg/L	1	2.5	3.3	28
Methyl tert-butyl ether [MTBE]	µg/L	1	<1.0	<1.0	-
Tetrachloroethylene	µg/L	1	<1.0	<1.0	-
Trichloroethane, 1,1,1-	µg/L	1	<1.0	<1.0	-
Trichloroethylene	µg/L	1	<1.0	<1.0	-
Trimethylbenzene, 1,3,5-	µg/L	1	14.0	15.9	13
Vinyl chloride	µg/L	1	<1.0	<1.0	-
Volatile Hydrocarbons					
VHw6-10	µg/L	100	389.0	478.0	21
VPHw	µg/L	100	233.0	265.0	13
Extractable Hydrocarbons					
EPHw10-C19	µg/L	250	<250.0	<250.0	-
HEPHw	µg/L	250	<250.0	<250.0	-
LEPHw	µg/L	250	<250.0	<250.0	-
PAH					
Acenaphthene	µg/L	0.05	<0.05	<0.05	-
Anthracene	µg/L	0.01	<0.01	<0.01	-
Benz(a)anthracene	µg/L	0.01	<0.01	<0.01	-
Benzo(a)pyrene	µg/L	0.01	<0.01	<0.01	-
Benzo(b+j)fluoranthenes	µg/L	0.05	<0.05	<0.05	-
Chrysene	µg/L	0.05	<0.05	<0.05	-
Dibenz(a,h)anthracene	µg/L	0.01	<0.01	<0.01	-
Fluoranthene	µg/L	0.03	<0.03	<0.03	-
Fluorene	µg/L	0.05	<0.05	<0.05	-
Methylnaphthalene, 1-	µg/L	0.1	0.177	0.179	1
Methylnaphthalene, 2-	µg/L	0.1	0.347	0.346	0
Naphthalene	µg/L	0.2	0.492	0.498	1
Pyrene	µg/L	0.02	<0.02	<0.02	-
Quinoline	µg/L	0.05	<0.05	<0.05	-
Inorganics					
Hardness	mg/l	0.5	167.0	170.0	2
Metals					
Arsenic (Filtered)	µg/L	0.5	1.29	1.28	1
Barium (Filtered)	µg/L	5	32.5	33.1	2
Cadmium (Filtered)	µg/L	0.01	0.032	0.034	6
Chromium (III+VI) (Filtered)	µg/L	0.5	<0.5	<0.5	-
Copper (Filtered)	µg/L	0.4	**2.57**	**2.0**	**25**
Lead (Filtered)	µg/L	0.2	<0.2	<0.2	-
Zinc (Filtered)	µg/L	4	11.5	8.6	29
MAH					
Butylbenzene, n-	µg/L	1	<1.0	<1.0	-
Butylbenzene, sec-	µg/L	1	<1.0	<1.0	-
Butylbenzene, tert-	µg/L	1	<1.0	<1.0	-
Propylbenzene, 1-	µg/L	1	2.8	3.3	16

*RPDs have only been considered where a concentration is greater than 5 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 20 (5-10 x EQL); 20 (10-30 x EQL); 20 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Appendix F
Field Forms

GROUNDWATER DEVELOPMENT FIELD FORM

Well ID: BH101

PROJECT NO: SOL040704.01 **ADDRESS:** 1350 Johnston Rd

DATE: Feb 22, 2018 **NEXT STAFF:** AM

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
2 Inches	Yes / No Height: _____ m	Yes / No	Yes / No

GAUGING INFORMATION

GAUGING INFORMATION		
Well Depth	17.15	m
Water Level	Dry	m
Water Column Thickness (1)		m

PURGING REQUIREMENTS	
1 Well Volume (2)	Litres
3 Well Volume (3)	Litres
10 Well Volume (4)	Litres

The well was blocked at ~17.15m
Further investigations revealed that it has been damaged at ~15ft

PURGING INFORMATION

☐ Waterra Inertia Pumping ☐ Whale Pump ☐ Bailer ☐ Other:

☐ 1st Purge	
Date	
Time	:
Volume	Litres
Purged Dry?	Yes / No

☐ 2nd Purge	
Date	
Time	:
Volume	Litres
Purged Dry?	Yes / No

☐ 3rd Purge	
Date	
Time	:
Volume	Litres
Purged Dry?	Yes / No

Total Volume Purged
Litres

ONLY COMPLETE IF USING REASON #3 (below) FOR CEASING DEVELOPMENT					
Volume					
pH					
EC					
Temp					

COMMENTS / CALCULATIONS

WATER CHARACTERISTICS												
Well Recovery Rate	Slow	1	2	3	4	5	6	7	8	9	10	Very Fast
Turbidity Start	Low	1	2	3	4	5	6	7	8	9	10	Extreme
Turbidity End	Low	1	2	3	4	5	6	7	8	9	10	Extreme
Sheen/Product/Odours												

(1) Thickness = Well Depth - Water Level

(2) One Well Volume Calculations:
2" Well: [water column] x 2
1.5" Well: [water column] x 1.2
1.0" Well: [water column] x 0.5

Target Well Volume Calculations:
(3) 3 Well Volumes = 1 Well Volume x 3
(4) 10 Well Volumes = 1 Well Volume x 10

Okay to stop developing when:
1. 10 well volumes purged;
2. Well goes dry 3 times (after reasonable re-charging); or
3. Stabilized readings (pH, EC, Temp) after 3 well volumes purged and water is clear

GROUNDWATER DEVELOPMENT FIELD FORM

Well ID: BH19/BH19R

PROJECT NO: SoL040764.01 **ADDRESS:** 1350 Johnston Rd.

DATE: Mar 06, 2018 **NEXT STAFF:** AY

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
2 Inches	Yes / No Height: _____ m	Yes / No	Yes / No

GAUGING INFORMATION

GAUGING INFORMATION		
Well Depth	30.45	m
Water Level	26.65	m
Water Column Thickness (1)	3.80	m

PURGING REQUIREMENTS		
1 Well Volume (2)	7.60	Litres
3 Well Volume (3)	22.80	Litres
10 Well Volume (4)	76.0	Litres

PURGING INFORMATION

☐ Waterra Inertia Pumping ☐ Whale Pump ☑ Bailer ☐ Other:

☑ 1st Purge	
Date	Mar 06, 2018
Time	13 : 40
Volume	44 Litres
Purged Dry?	(Yes) / No

☑ 2nd Purge	
Date	Mar 06, 2018
Time	14 : 15
Volume	1 Litres
Purged Dry?	(Yes) / No

☑ 3rd Purge	
Date	Mar 06, 2018
Time	14 : 45
Volume	0.5 Litres
Purged Dry?	(Yes) / No

Total Volume Purged
45.5 Litres

ONLY COMPLETE IF USING REASON #3 (below) FOR CEASING DEVELOPMENT					
Volume					
pH					
EC					
Temp					

COMMENTS / CALCULATIONS

WATER CHARACTERISTICS												
Well Recovery Rate	Slow	1	2	3	4	5	6	7	8	9	10	Very Fast
Turbidity Start	Low	1	2	3	4	5	6	7	8	9	10	Extreme
Turbidity End	Low	1	2	3	4	5	6	7	8	9	10	Extreme
Sheen/Product/Odours	N/A											

(1) Thickness = Well Depth - Water Level

(2) One Well Volume Calculations:
2" Well: [water column] x 2
1.5" Well: [water column] x 1.2
1.0" Well: [water column] x 0.5

Target Well Volume Calculations:
(3) 3 Well Volumes = 1 Well Volume x 3
(4) 10 Well Volumes = 1 Well Volume x 10

Okay to stop developing when:
1. 10 well volumes purged;
2. Well goes dry 3 times (after reasonable re-charging); or
3. Stabilized readings (pH, EC, Temp) after 3 well volumes purged and water is clear

GROUNDWATER SAMPLING FIELD FORM

Well ID: BH110

PROJECT NO: SL04070440 **ADDRESS:** 1350 Johnston Rd. White Rock

DATE: Mar 08, 2018 **NEXT STAFF:** AM

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
2 inches	Yes / No Height: ____ m	Yes / No	Yes / No

GAUGING INFORMATION

GAUGING INFORMATION	
Well Depth	30 m
Water Level	28.70 m
Water Column Thickness	1.30 m

PURGING REQUIREMENTS	
One Well Volume (Min. purge)	2.60 Litres
Three Well Volumes (Max. purge)	7.80 Litres

NOTE: See well development field form for well volume calculations

PURGING & SAMPLING INFORMATION

☐ Low Flow—Peristaltic Pump ☐ Low Flow—Bladder Pump ☑ Bailer ☐ Other:

Volume (L)	pH	EC (µS/cm)	Temp (°C)	TDS (PPM)	Comments (pump rate / turbidity / odour / sheen etc.)
Start Purging: :					
Due to the slow recharge, Samples were collected directly from the well. Since the volume of water, present in the well, was limited & at the depth of 28m a peristaltic pump could not be used; therefore all samples were collected using a bailer. Metal samples were filtered					
Finish Sampling :					

SAMPLE COLLECTION

Sample Turbiudty	Low 1 2 3 4 (5) 6 7 8 9 10 Extreme
Analyses	BTEX / VPH, L,H, PAH, Metals, Glycols
Duplicate Sample ID	BH160
Laboratory	CARO

COMMENTS (sample preservation / field filtering etc.)

GROUNDWATER DEVELOPMENT FIELD FORM

Well ID: BH201

PROJECT NO: SOL040704.02 **ADDRESS:** 1350 Johnston Rd, White Rock

DATE: May 11 & 14, 2018 **NEXT STAFF:** JC

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
2 Inches	(Yes) / No Height: 0.85 m	~~Yes / No~~	(Yes) / No

FIELD MEASUREMENTS/CALCULATIONS

GAUGING INFORMATION		
Well Depth (from top of pipe)	31.72	m
Water Level (from top of pipe)	30.51	m
Water Column Thickness (1)	1.21	m

PURGING REQUIREMENTS		
1 Well Volume (2)	2.42	Litres
3 Well Volume (3)	7.26	Litres
10 Well Volume (4)	24.2	Litres

PURGING INFORMATION

☐ Waterra Inertia Pumping ☐ Whale Pump ☒ Bailer ☐ Other:

1st Purge	
Date	May 11, 2018
Time	12 : 05
Volume	0.5 Litres
Purged Dry?	Yes / No

2nd Purge	
Date	May 14, 2018
Time	17 : 15
Volume	2 Litres
Purged Dry?	(Yes) / No

3rd Purge	
Date	May 14, 2018
Time	19 : 50
Volume	2 Litres
Purged Dry?	(Yes) / No

Total Volume Purged	
4.5	Litres

ONLY COMPLETE IF USING REASON #3 (below) FOR CEASING DEVELOPMENT					
Volume					
pH					
EC					
Temp.					

COMMENTS / CALCULATIONS

WATER CHARACTERISTICS												
Well Recovery Rate	Slow	1	2	3	4	(5)	6	7	8	9	10	Very Fast
Turbidity Start	Low	1	2	3	4	5	(6)	7	8	9	10	Extreme
Turbidity End	Low	1	2	(3)	4	5	6	7	8	9	10	Extreme
Sheen/Product/Odours	None.											

(1) Thickness = Well Depth - Water Level

(2) One Well Volume Calculations:
2" Well: [*water column*] x 2
1.5" Well: [*water column*] x 1.2
1.0" Well: [*water column*] x 0.5

Target Well Volume Calculations:
(3) 3 Well Volumes = 1 Well Volume x 3
(4) 10 Well Volumes = 1 Well Volume x 10

Development complete when:
1. 10 well volumes purged;
2. Well goes dry 3 times (after reasonable re-charging); or
3. Stabilized field readings (pH, EC, Temp) after 3 well volumes purged and water is clear

GROUNDWATER SAMPLING FIELD FORM

Well ID: BH201

PROJECT NO: 801040704-02 **ADDRESS:** 1350 Johnston Road, White Rock

DATE: May 15, 2018 **NEXT STAFF:** JC

Well Diameter	Stickup	Cover Secure?	J-Plug Secure?
2 inches	(Yes) / No Height: 0.85 m	~~Yes / No~~	(Yes) / No

FIELD MEASUREMENTS/CALCULATIONS

GAUGING INFORMATION		
Well Depth (from top of pipe)	31.72	m
Water Level (from top of pipe)	30.51	m
Water Column Thickness	1.21	m

PURGING REQUIREMENTS		
One Well Volume (Min. purge)	2.42	Litres
Three Well Volumes (Max. purge)	7.26	Litres

NOTE: See well development field form for well volume calculations

PURGING & SAMPLING INFORMATION

☐ Low Flow - Peristaltic Pump ☐ Low Flow - Bladder Pump ☒ Bailer ☐ Other:

Hanna / YSI

Volume (L)	pH	Temp (°C)	EC (µS/cm)	TDS (ppm / g/L)	DO (mg/L)	ORP (mV)	NOTES (pump rate, odours, salinity etc.)
Start Purging: 13:10							
2	–	–	–	–	–	–	well went dry.
Finish Sampling: 14:12							

SAMPLE COLLECTION

Sample Turbidity	Low	(1)	2	3	4	5	6	7	8	9	10 Extreme
Duplicate Sample ID	BH251										
Laboratory	CARO										
Analysis	BTEX, VPH										

COMMENTS

- well purged dry @ 13:10 with bailer
- sampled @ 14:12 with bailer for VOCs.

VAPOUR SAMPLING FIELD FORM

Well ID: BH101

PROJECT NO: SOL040704.01 **ADDRESS:** 1350 Johnston Rd

DATE: Feb 22, 2018 **NEXT STAFF:** AM

Current Weather	Last 24hr Weather	Ground Cover			
Sunny	Snow / overcast	Permanent Cover (Concrete/Asphalt)	☑	Temporary Cover (Plastic)	☐

PURGING DETAILS

	PURGING VOLUME					
	1" PVC Well (1) ☐		Steel Probe (2) ☑		Subslab (3) ☐	
1 Well / Sand Pack Volume		cm^3	2469	cm^3		
3 Well / Sand Pack Volumes (3)		cm^3	7409	cm^3		
Flow Rate at Calibration		mL/min	200	mL/min		mL/min
Required Purge Time (4)		mins.	37	mins.	2 mins.	

PERFORMANCE TESTS

1. INITIAL VACUUM TEST	
Vacuum	>22 inches H_2O
Acceptable (5)	Yes / (No)

Start purge: 11h26

END purge: 12h03

2. HELIUM LEAK DETECTION	
[Shroud]	% LEL
[Sample]	ppm (9)
[Sample] / [Shroud]	%
Acceptable (6)	Yes / No

3. SHUT-IN VACUUM TEST	
Initial Vacuum	inches H_2O
Final Vacuum	inches H_2O
Test Duration	5 mins
$Q_{leak} : Q_{purge}$ (8)	
Acceptable (7)	Yes / No

SAMPLING

☐ Thermo Desorption Tube	Required Sampling Time: 10 mins Flow Rate (mL/min) Start: 200 End: 200 Avg: 200		
☐ 1.4 L Summa Canister Sampling Time	Regulator Start: -	:	Total mins
	Regulator End: -	:	
Serial Numbers	Tube: G015 4422	Canister	Regulator

Requested Analyses	
Duplicate ID and serial number(s)	BH151R G0156827
Dup. Analyses	
Laboratory	Maxxam ALS CARO

Comments / Calculations

10" SP = 25.4 cm

8" ϕ ⇒ 4" r = 10.16 cm

V = 25.4 x (10.16)² x π x 0.3 = 2469.86 cm³

3V = 7409.57 / 200 = 37 min

Purging Volumes:
(1) Volume = [depth] x 1.6^2 x 3.14
(2) Volume = [sand depth] x [radius]^2 x 3.14 x 0.3
(3) 3 Volumes = 1 Volume * 3
(4) 3 Volumes / Flow Rate

Performance Tests Acceptance Criteria:
(5) Acceptable if < 10 inches H2O
(6) Acceptable if < 2%
(7) Acceptable if <0.01

(8) $Q_{leak} : Q_{purge}$ Formula:
$$\frac{35*(\text{initial vacuum} - \text{final vacuum})}{406*(\text{flow rate})*\Delta t}$$
(9) 10,000 ppm = 1 LEL

VAPOUR SAMPLING FIELD FORM

Well ID: BH110r

PROJECT NO: SOL040704.01 **ADDRESS:** 1350 Johnston Rd.

DATE: Mar 06, 2018 **NEXT STAFF:** AM

Current Weather	Last 24hr Weather	Ground Cover	
Sunny	Overcast	Permanent Cover (Concrete/Asphalt) ☑	Temporary Cover (Plastic) ☐

PURGING DETAILS

	PURGING VOLUME		
	1" PVC Well (1) ☐	Steel Probe (2) ☐	Subslab (3) ☐
1 Well / Sand Pack Volume	cm^3	cm^3	
3 Well / Sand Pack Volumes (3)	cm^3	cm^3	
Flow Rate at Calibration	mL/min	mL/min	mL/min
Required Purge Time (4)	mins.	mins.	2 mins.

PERFORMANCE TESTS

1. INITIAL VACUUM TEST	
Vacuum	>22 inches H_2O
Acceptable (5)	Yes / (No)

Failed the Vaccuum test

2. HELIUM LEAK DETECTION	
[Shroud]	% LEL
[Sample]	ppm (9)
[Sample] / [Shroud]	%
Acceptable (6)	Yes / No

3. SHUT-IN VACUUM TEST	
Initial Vacuum	inches H_2O
Final Vacuum	inches H_2O
Test Duration	5 mins
$Q_{leak} : Q_{purge}$ (8)	
Acceptable (7)	Yes / No

SAMPLING

☐ Thermo Desorption Tube	Required Sampling Time: _____ mins Flow Rate (mL/min) Start: _____ End: _____ Avg: _____		
☐ 1.4 L Summa Canister Sampling Time	Regulator Start: -	:	Total mins
	Regulator End: -	:	
Serial Numbers	Tube	Canister	Regulator

Requested Analyses	
Duplicate ID and serial number(s)	
Dup. Analyses	
Laboratory	Maxxam ALS CARO

Comments / Calculations

Purging Volumes:
(1) Volume = [depth] x 1.6^2 x 3.14
(2) Volume = [sand depth] x $[radius]^2$ x 3.14 x 0.3
(3) 3 Volumes = 1 Volume * 3
(4) 3 Volumes / Flow Rate

Performance Tests Acceptance Criteria:
(5) Acceptable if < 10 inches H2O
(6) Acceptable if < 2%
(7) Acceptable if <0.01

(8) $Q_{leak} : Q_{purge}$ Formula:
$$\frac{35*(\text{initial vacuum} - \text{final vacuum})}{406*(\text{flow rate})*\Delta t}$$
(9) 10,000 ppm = 1 LEL

VAPOUR SAMPLING FIELD FORM

Well ID: BH202v

PROJECT NO: SOL040704.02 **ADDRESS:** 1350 Johnston Road, White Rock.

DATE: May 14, 2018 **NEXT STAFF:** JL

Current Weather	Last 24hr Weather	Ground Cover	
sunny	sunny	Permanent Cover (Concrete/Asphalt) ☐	Temporary Cover (Plastic) ☒

PURGING DETAILS

	PURGING VOLUME		
	1" PVC Well (1) ☐	Steel Probe (2) ☒	Subslab (3) ☐
1 Well / Sand Pack Volume	cm^3	2500 cm^3	
3 Well / Sand Pack Volumes (3)	cm^3	7500 cm^3	
Flow Rate at Calibration	mL/min	150 mL/min	mL/min
Required Purge Time (4)	mins.	50 mins.	2 mins.

PERFORMANCE TESTS

1. INITIAL VACUUM TEST	
Vacuum	1.2 inches H_2O
Acceptable (5)	(Yes) / No

2. HELIUM LEAK DETECTION	
[Shroud]	95 % LEL
[Sample]	0 ppm (9)
[Sample] / [Shroud]	0 %
Acceptable (6)	(Yes) / No

3. SHUT-IN VACUUM TEST	
Initial Vacuum	inches H_2O
Final Vacuum	inches H_2O
Test Duration	5 mins
$Q_{leak} : Q_{purge}$ (8)	
Acceptable (7)	Yes / No

SAMPLING

☒ Thermo Desorption Tube	Required Sampling Time: 26 mins Flow Rate (mL/min) Start: _____ End: _____ Avg: 153		
☐ 1.4 L Summa Canister Sampling Time	Regulator Start: -	:	Total mins
	Regulator End: -	:	
Serial Numbers	Tube G0154941	Canister	Regulator

Requested Analyses	VOCs, naphthalene
Duplicate ID and serial number(s)	—
Dup. Analyses	
Laboratory	Maxxam ALS (CARO)

Comments / Calculations

Purging Volumes:
(1) Volume = [depth] x 1.6^2 x 3.14
(2) Volume = [sand depth] x [radius]^2 x 3.14 x 0.3
(3) 3 Volumes = 1 Volume * 3
(4) 3 Volumes / Flow Rate

Performance Tests Acceptance Criteria:
(5) Acceptable if < 10 inches H2O
(6) Acceptable if < 2%
(7) Acceptable if <0.01

(8) $Q_{leak} : Q_{purge}$ Formula:
$$\frac{35*(\text{initial vacuum} - \text{final vacuum})}{406*(\text{flow rate})*\Delta t}$$
(9) 10,000 ppm = 1 LEL

VAPOUR SAMPLING FIELD FORM

Well ID: BH204V

PROJECT NO: 801040704.02 **ADDRESS:** 1350 Johnston Road, White Rock

DATE: May 14, 2018 **NEXT STAFF:** JC

Current Weather	Last 24hr Weather	Ground Cover	
Sunny	Sunny	Permanent Cover (Concrete/Asphalt) ☒	Temporary Cover (Plastic) ☐

PURGING DETAILS

	PURGING VOLUME		
	1" PVC Well (1) ☐	Steel Probe (2) ☒	Subslab (3) ☐
1 Well / Sand Pack Volume	cm^3	2500 cm^3	
3 Well / Sand Pack Volumes (3)	cm^3	7500 cm^3	
Flow Rate at Calibration	mL/min	150 mL/min	mL/min
Required Purge Time (4)	mins.	50 mins.	2 mins.

PERFORMANCE TESTS

1. INITIAL VACUUM TEST	
Vacuum	6.6 inches H_2O
Acceptable (5)	(Yes) / No

2. HELIUM LEAK DETECTION	
[Shroud]	99 % LEL
[Sample]	0 ppm (9)
[Sample] / [Shroud]	0 %
Acceptable (6)	(Yes) / No

3. SHUT-IN VACUUM TEST	
Initial Vacuum	inches H_2O
Final Vacuum	inches H_2O
Test Duration	5 mins
$Q_{leak} : Q_{purge}$ (8)	
Acceptable (7)	Yes / No

SAMPLING

☒ Thermo Desorption Tube	Required Sampling Time: 26 mins Flow Rate (mL/min) Start: _____ End: _____ Avg: 153		
☐ 1.4 L Summa Canister Sampling Time	Regulator Start: -	:	Total mins
	Regulator End: -	:	
Serial Numbers	Tube G0190474	Canister	Regulator

Requested Analyses	VOC, naphthalene
Duplicate ID and serial number(s)	—
Dup. Analyses	
Laboratory	Maxxam ALS (CARO)

Comments / Calculations

$V_v = \pi r^2 h \times 0.3$ $r = 7.62cm$ $h = 45.72cm$

$V_v = 2500 cm^3$

Purging Volumes:
(1) Volume = [depth] x 1.6^2 x 3.14
(2) Volume = [sand depth] x [radius]^2 x 3.14 x 0.3
(3) 3 Volumes = 1 Volume * 3
(4) 3 Volumes / Flow Rate

Performance Tests Acceptance Criteria:
(5) Acceptable if < 10 inches H2O
(6) Acceptable if < 2%
(7) Acceptable if <0.01

(8) $Q_{leak} : Q_{purge}$ Formula:
$\frac{35*(\text{initial vacuum} - \text{final vacuum})}{406*(\text{flow rate})*\Delta t}$
(9) 10,000 ppm = 1 LEL

VAPOUR SAMPLING FIELD FORM

Well ID: BH205V

PROJECT NO: SOL040704.02 **ADDRESS:** 1350 Johnston Road, White Rock

DATE: May 14, 2018 **NEXT STAFF:** JC

Current Weather	Last 24hr Weather	Ground Cover	
Sunny	Sunny	Permanent Cover (Concrete/Asphalt) ☐	Temporary Cover (Plastic) ☒

PURGING DETAILS

	PURGING VOLUME		
	1" PVC Well (1) ☐	Steel Probe (2) ☒	Subslab (3) ☐
1 Well / Sand Pack Volume	cm^3	2500 cm^3	
3 Well / Sand Pack Volumes (3)	cm^3	7500 cm^3	
Flow Rate at Calibration	mL/min	150 mL/min	mL/min
Required Purge Time (4)	mins.	50 mins.	2 mins.

PERFORMANCE TESTS

1. INITIAL VACUUM TEST	
Vacuum	0.2 inches H_2O
Acceptable (5)	Yes / No

2. HELIUM LEAK DETECTION	
[Shroud]	95 % LEL
[Sample]	0 ppm (9)
[Sample] / [Shroud]	0 %
Acceptable (6)	(Yes) / No

3. SHUT-IN VACUUM TEST	
Initial Vacuum	inches H_2O
Final Vacuum	inches H_2O
Test Duration	5 mins
$Q_{leak} : Q_{purge}$ (8)	
Acceptable (7)	Yes / No

SAMPLING

☒ Thermo Desorption Tube	Required Sampling Time: 26 mins Flow Rate (mL/min) Start: _____ End: _____ Avg: 153		
☐ 1.4 L Summa Canister Sampling Time	Regulator Start: -	:	Total mins
	Regulator End: -	:	
Serial Numbers	Tube 90149775	Canister	Regulator

Requested Analyses	VOC, naphthalene
Duplicate ID and serial number(s)	—
Dup. Analyses	
Laboratory	Maxxam ALS (CARO)

Comments / Calculations

Purging Volumes:
(1) Volume = [depth] x 1.6^2 x 3.14
(2) Volume = [sand depth] x [radius]^2 x 3.14 x 0.3
(3) 3 Volumes = 1 Volume * 3
(4) 3 Volumes / Flow Rate

Performance Tests Acceptance Criteria:
(5) Acceptable if < 10 inches H2O
(6) Acceptable if < 2%
(7) Acceptable if <0.01

(8) $Q_{leak} : Q_{purge}$ Formula:
$$\frac{35*(\text{initial vacuum} - \text{final vacuum})}{406*(\text{flow rate})*\Delta t}$$
(9) 10,000 ppm = 1 LEL

VAPOUR SAMPLING FIELD FORM

Well ID: BH206V

PROJECT NO: SOL040704.02 **ADDRESS:** 1350 Johnston Road, White Rock

DATE: May 14, 2018 **NEXT STAFF:** JC

Current Weather	Last 24hr Weather	Ground Cover	
sunny	sunny	Permanent Cover (Concrete/Asphalt) ☐	Temporary Cover (Plastic) ☒

PURGING DETAILS

	PURGING VOLUME		
	1" PVC Well (1) ☐	Steel Probe (2) ☒	Subslab (3) ☐
1 Well / Sand Pack Volume	cm^3	2500 cm^3	
3 Well / Sand Pack Volumes (3)	cm^3	7500 cm^3	
Flow Rate at Calibration	mL/min	150 mL/min	mL/min
Required Purge Time (4)	mins.	30 mins.	2 mins.

PERFORMANCE TESTS

1. INITIAL VACUUM TEST	
Vacuum	8.9 inches H_2O
Acceptable (5)	(Yes) / No

2. HELIUM LEAK DETECTION	
[Shroud]	95 % LEL
[Sample]	11500 ppm (9)
[Sample] / [Shroud]	0.0121 %
Acceptable (6)	(Yes) / No

3. SHUT-IN VACUUM TEST	
Initial Vacuum	inches H_2O
Final Vacuum	inches H_2O
Test Duration	5 mins
$Q_{leak} : Q_{purge}$ (8)	
Acceptable (7)	Yes / No

SAMPLING

☒ Thermo Desorption Tube	Required Sampling Time: 26 mins Flow Rate (mL/min) Start: _____ End: _____ Avg: 153		
☐ 1.4 L Summa Canister Sampling Time	Regulator Start: -	:	Total mins
	Regulator End: -	:	
Serial Numbers	Tube: G0152188	Canister	Regulator

Requested Analyses	naphthalene, VOC
Duplicate ID and serial number(s)	BH256V G0149882
Dup. Analyses	naphthalene, VOC
Laboratory	Maxxam ALS (CARO)

Comments / Calculations

$V_t = \pi r^2 h \times 0.3$ $r = 7.62cm$ $h = 45.72cm$

Purging Volumes:
(1) Volume = [depth] x 1.6^2 x 3.14
(2) Volume = [sand depth] x $[radius]^2$ x 3.14 x 0.3
(3) 3 Volumes = 1 Volume * 3
(4) 3 Volumes / Flow Rate

Performance Tests Acceptance Criteria:
(5) Acceptable if < 10 inches H2O
(6) Acceptable if < 2%
(7) Acceptable if <0.01

(8) $Q_{leak} : Q_{purge}$ Formula:
$$\frac{35*(\text{initial vacuum} - \text{final vacuum})}{406*(\text{flow rate})*\Delta t}$$
(9) 10,000 ppm = 1 LEL

VAPOUR SAMPLING FIELD FORM

Well ID: BH206vn

PROJECT NO: SOL040704.02 **ADDRESS:** 1350 Johnston Road, White Rock

DATE: May 15, 2018 **NEXT STAFF:** JC

Current Weather	Last 24hr Weather	Ground Cover	
Sunny	Sunny	Permanent Cover (Concrete/Asphalt) ☐	Temporary Cover (Plastic) ☒

PURGING DETAILS

	PURGING VOLUME		
	1" PVC Well (1) ☐	Steel Probe (2) ☒	Subslab (3) ☐
1 Well / Sand Pack Volume	cm^3	2500 cm^3	
3 Well / Sand Pack Volumes (3)	cm^3	7500 cm^3	
Flow Rate at Calibration	mL/min	150 mL/min	mL/min
Required Purge Time (4)	mins.	50 mins.	2 mins.

PERFORMANCE TESTS

1. INITIAL VACUUM TEST	
Vacuum	6.8 inches H_2O
Acceptable (5)	(Yes) / No

2. HELIUM LEAK DETECTION	
[Shroud]	90 % LEL
[Sample]	0 ppm (9)
[Sample] / [Shroud]	0 %
Acceptable (6)	(Yes) / No

3. SHUT-IN VACUUM TEST	
Initial Vacuum	inches H_2O
Final Vacuum	inches H_2O
Test Duration	5 mins
$Q_{leak} : Q_{purge}$ (8)	
Acceptable (7)	Yes / No

SAMPLING

☒ Thermo Desorption Tube	Required Sampling Time: 26 mins Flow Rate (mL/min) Start: _____ End: _____ Avg: 153		
☐ 1.4 L Summa Canister Sampling Time	Regulator Start: -	:	Total mins
	Regulator End: -	:	
Serial Numbers	Tube 90148989	Canister	Regulator

Requested Analyses	VOC, naphthalene
Duplicate ID and serial number(s)	
Dup. Analyses	
Laboratory	Maxxam ALS (CARO)

Comments / Calculations

Background He detector reading before He injection = 16 000ppm
After He test, He detector reading = 16000 ppm
∴ no additional He has infiltrated the well.

Purging Volumes:
(1) Volume = [depth] x 1.6^2 x 3.14
(2) Volume = [sand depth] x $[radius]^2$ x 3.14 x 0.3
(3) 3 Volumes = 1 Volume * 3
(4) 3 Volumes / Flow Rate

Performance Tests Acceptance Criteria:
(5) Acceptable if < 10 inches H2O
(6) Acceptable if < 2%
(7) Acceptable if <0.01

(8) $Q_{leak} : Q_{purge}$ Formula:
$$\frac{35*(\text{initial vacuum} - \text{final vacuum})}{406*(\text{flow rate})*\Delta t}$$
(9) 10,000 ppm = 1 LEL

VAPOUR SAMPLING FIELD FORM

Well ID: BH206V

PROJECT NO: SOL040704.02 **ADDRESS:** 1350 Johnston Rd, White Rock

DATE: May 22, 2018 **NEXT STAFF:** ML

Current Weather	Last 24hr Weather	Ground Cover	
Sunny	Sunny	Permanent Cover (Concrete/Asphalt) ☐	Temporary Cover (Plastic/Vinyl) ☐

↓ cover no longer present

PURGING INFORMATION/CALCULATIONS

PURGING VOLUME	Steel Probe[1]	Subslab	1" PVC Well[2]
1 Well / Sand Pack Volume	2500 cm^3		cm^3
3 Well / Sand Pack Volume[3]	7500 cm^3		cm^3
Purging Flow Rate	300 mL/min	mL/min	mL/min
Required Purge Time[4]	25 mins.	2 mins.	mins.

PERFORMANCE TESTS

1. INITIAL VACUUM TEST	
Vacuum	0.10 Inches H_2O
Acceptable[5]	(Yes) / No

2. HELIUM LEAK TEST	
[Shroud]	%
[Sample]	ppm[9]
[Sample]/[Shroud]	%
Acceptable[6]	Yes / No

3. SHUT-IN VACCUM TEST	
Initial Vacuum	Inches H_2O
Final Vacuum	Inches H_2O
Test Duration	5 mins.
$Q_{leak} : Q_{purge}$[8]	
Acceptable[7]	Yes / No

SAMPLE COLLECTION

THERMO DESPORTION (TD) TUBE	
Sampling Time	2 / 10 mins.
Flow Rates (mL/min)	Start: 50 End: 50
Serial Number	G0149640 (100) G0141759 (500)

SUMMA CANISTER	
Regulator (mmHg)	Start: _____ End: _____
Time (HH:MM)	Start: ____:____ End: ____:____
Sampling Time	Total mins.
Serial Number	

DUPLICATES	
Duplicate ID	
Serial Number	

LAB ANALYSES	
Package	VOCs, naphthelene
Laboratory	CARO

COMMENTS & CALCULATIONS

t_i = 12:37
t_f = 1:06
Δt = 25min purge = 7500mL

- BH206V - 100 (100mL)
- BH206V - 500 (500mL)

Common Installs:
12" depth & 6" diameter
1 Volume: 1800 cm^3
3 Volumes: 5400 cm^3
12" depth & 4" diameter
1 Volume: 800 cm^3
3 Volumes: 2400 cm^3

Purging Volumes [lengths in cm]
(1) Volume = [sand depth] x [radius]^2 x 3.14 x 0.3
(2) 3 Volumes = 1 Volume * 3
(3) 3 Volumes / Flow Rate
(4) Volume = [depth] x 1.6^2 x 3.14

Performance Tests Acceptance Criteria
(5) Acceptable if < 10 inches H2O
(6) Acceptable if < 2%
(7) Acceptable if <0.01 x 10

Calculations & Conversions
(8) 35 x (Initial Vacuum – Final Vacuum) / 406 x (flow rate) x Δt
(9) 10,000 ppm = 1 %

VAPOUR SAMPLING FIELD FORM

Well ID: BH206vn

PROJECT NO: SOL040704.02 **ADDRESS:** 1350 Johnston Rd, White Rock

DATE: May 22, 2018 **NEXT STAFF:** ML

Current Weather	Last 24hr Weather	Ground Cover	
Sunny	Sunny	Permanent Cover (Concrete/Asphalt) ☐	Temporary Cover (Plastic/Vinyl) ☐

↓ cover no longer present

PURGING INFORMATION/CALCULATIONS

PURGING VOLUME	Steel Probe[1]	Subslab	1" PVC Well[2]
1 Well / Sand Pack Volume	2500 cm^3		cm^3
3 Well / Sand Pack Volume[3]	7500 cm^3		cm^3
Purging Flow Rate	150 mL/min	mL/min	mL/min
Required Purge Time[4]	50 mins.	2 mins.	mins.

PERFORMANCE TESTS

1. INITIAL VACUUM TEST	
Vacuum	8.8 Inches H_2O
Acceptable[5]	(Yes) / No

2. HELIUM LEAK TEST	
[Shroud]	%
[Sample]	ppm[9]
[Sample]/[Shroud]	%
Acceptable[6]	Yes / No

3. SHUT-IN VACCUM TEST	
Initial Vacuum	Inches H_2O
Final Vacuum	Inches H_2O
Test Duration	5 mins.
$Q_{leak} : Q_{purge}$[8]	
Acceptable[7]	Yes / No

SAMPLE COLLECTION

THERMO DESPORTION (TD) TUBE	
Sampling Time	2 / 10 mins.
Flow Rates (mL/min)	Start: 50 End: 50
Serial Number	G0192371 (100) G0155807 (500)

1.2L

SUMMA CANISTER	
Regulator (mmHg)	Start: _____ End: _____
Time (HH:MM)	Start: ____:____ End: ____:____
Sampling Time	Total mins.
Serial Number	

DUPLICATES	
Duplicate ID	
Serial Number	

LAB ANALYSES	
Package	VOCs, napthalene
Laboratory	CARO

COMMENTS & CALCULATIONS

1.2L
ti = 12:30
tf = 1:20
Δt = 50 min ≈ 7500mL

- BH206vn - 100 (100mL)
- BH206vn - 500 (500mL)

Common Installs:
12" depth & 6" diameter
1 Volume: 1800 cm^3
3 Volumes: 5400 cm^3
12" depth & 4" diameter
1 Volume: 800 cm^3
3 Volumes: 2400 cm^3

Purging Volumes [lengths in cm]
(1) Volume = [sand depth] x [radius]^2 x 3.14 x 0.3
(2) 3 Volumes = 1 Volume * 3
(3) 3 Volumes / Flow Rate
(4) Volume = [depth] x 1.6^2 x 3.14

Performance Tests Acceptance Criteria
(5) Acceptable if < 10 inches H2O
(6) Acceptable if < 2%
(7) Acceptable if <0.01 x 10

Calculations & Conversions
(8) 35 x (Initial Vacuum – Final Vacuum) / 406 x (flow rate) x Δt
(9) 10,000 ppm = 1 %

Appendix G
Laboratory Reports and Certificates

CERTIFICATE OF ANALYSIS

REPORTED TO	Next Environmental Inc 215 - 2550 Boundary Road Burnaby, BC V5M 3Z3		
ATTENTION	Ardavan Mansourpour	**WORK ORDER**	8021267
PO NUMBER		**RECEIVED / TEMP**	2018-02-19 13:30 / 10°C
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43
PROJECT INFO		**COC NUMBER**	B60692/93/94/96

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

Work Order Comments:

This is a revised report; please refer to Appendix 3 for details.

If you have any questions or concerns, please contact me at bshaw@caro.ca

Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Client Service Coordinator

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021267
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43

Analyte	Result	RL	Units	Analyzed	Qualifier
BH101-02 (8021267-02) | Matrix: Soil | Sampled: 2018-02-16					
General Parameters					
Moisture	**10.3**	1.0	% wet	2018-02-22	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	**100**	20	µg/g dry	2018-02-23	
VPHs	**100**	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-02-23	
Ethylbenzene	**0.223**	0.050	µg/g dry	2018-02-23	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-02-23	
Styrene	< 0.050	0.050	µg/g dry	2018-02-23	
Toluene	< 0.200	0.200	µg/g dry	2018-02-23	
Xylenes (total)	**1.51**	0.100	µg/g dry	2018-02-23	
Surrogate: Toluene-d8	*124*	*60-140*	%	*2018-02-23*	
Surrogate: 4-Bromofluorobenzene	*111*	*60-140*	%	*2018-02-23*	
Surrogate: 1,4-Dichlorobenzene-d4	*117*	*60-140*	%	*2018-02-23*	
BH101-06 (8021267-06) | Matrix: Soil | Sampled: 2018-02-16					
General Parameters					
Moisture	**9.1**	1.0	% wet	2018-02-22	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	**2300**	20	µg/g dry	2018-02-24	
VPHs	**1400**	200	mg/kg dry	N/A	
Glycols					HT1
Propylene glycol	< 10	10	mg/kg dry	2018-03-14	
Ethylene glycol	< 10	10	mg/kg dry	2018-03-14	
Diethylene glycol	< 10	10	mg/kg dry	2018-03-14	
Triethylene glycol	< 10	10	mg/kg dry	2018-03-14	
Surrogate: Tetramethylene Glycol	*92*	*70-119*	%	*2018-03-14*	
Volatile Organic Compounds (VOC)					
Benzene	< 0.474	0.020	µg/g dry	2018-02-23	
Ethylbenzene	**88.5**	0.050	µg/g dry	2018-02-24	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-02-23	
Styrene	< 0.108	0.050	µg/g dry	2018-02-23	RA1
Toluene	**277**	0.200	µg/g dry	2018-02-24	
Xylenes (total)	**543**	0.100	µg/g dry	2018-02-24	
Surrogate: Toluene-d8	*109*	*60-140*	%	*2018-02-23*	
Surrogate: 4-Bromofluorobenzene	*118*	*60-140*	%	*2018-02-23*	
Surrogate: 1,4-Dichlorobenzene-d4	*137*	*60-140*	%	*2018-02-23*	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021267
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43

Analyte	Result	RL	Units	Analyzed	Qualifier
BH101-10 (8021267-10) | Matrix: Soil | Sampled: 2018-02-16					
General Parameters					
Moisture	**9.3**	1.0	% wet	2018-02-28	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-02-27	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	**0.053**	0.020	µg/g dry	2018-02-27	
Ethylbenzene	**0.093**	0.050	µg/g dry	2018-02-27	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-02-27	
Styrene	< 0.050	0.050	µg/g dry	2018-02-27	
Toluene	< 0.200	0.200	µg/g dry	2018-02-27	
Xylenes (total)	**0.390**	0.100	µg/g dry	2018-02-27	
Surrogate: Toluene-d8	*107*	*60-140*	%	*2018-02-27*	
Surrogate: 4-Bromofluorobenzene	*94*	*60-140*	%	*2018-02-27*	
Surrogate: 1,4-Dichlorobenzene-d4	*96*	*60-140*	%	*2018-02-27*	
BH101-13 (8021267-13) | Matrix: Soil | Sampled: 2018-02-16					
General Parameters					
Moisture	**6.2**	1.0	% wet	2018-03-05	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-03-06	
Surrogate: Toluene-d8	*103*	*60-140*	%	*2018-03-06*	
BH101-15 (8021267-15) | Matrix: Soil | Sampled: 2018-02-16					
General Parameters					
Moisture	**8.4**	1.0	% wet	2018-03-14	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-03-16	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	**0.134**	0.020	µg/g dry	2018-03-16	
1,3-Butadiene	< 0.100	0.100	µg/g dry	2018-03-16	
Carbon tetrachloride	< 0.050	0.050	µg/g dry	2018-03-16	
Chloroethane	< 0.100	0.100	µg/g dry	2018-03-16	
n-Decane	< 2.00	0.200	µg/g dry	2018-03-16	
1,2-Dibromoethane	< 0.100	0.100	µg/g dry	2018-03-16	
1,2-Dichloroethane	< 0.050	0.050	µg/g dry	2018-03-16	

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021267
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43

Analyte	Result	RL	Units	Analyzed	Qualifier
BH101-15 (8021267-15) | Matrix: Soil | Sampled: 2018-02-16, Continued					
Volatile Organic Compounds (VOC), Continued					
1,1-Dichloroethylene	< 0.050	0.050	µg/g dry	2018-03-16	
cis-1,2-Dichloroethylene	< 0.050	0.050	µg/g dry	2018-03-16	
trans-1,2-Dichloroethylene	< 0.050	0.050	µg/g dry	2018-03-16	
Dichloromethane	< 0.100	0.100	µg/g dry	2018-03-16	
Ethylbenzene	**0.088**	0.050	µg/g dry	2018-03-16	
n-Hexane	< 0.500	0.200	µg/g dry	2018-03-16	
Isopropylbenzene (Cumene)	< 0.050	0.050	µg/g dry	2018-03-16	
Methyl cyclohexane	< 0.050	0.050	µg/g dry	2018-03-16	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-03-16	
Styrene	< 0.050	0.050	µg/g dry	2018-03-16	
Tetrachloroethylene	< 0.050	0.050	µg/g dry	2018-03-16	
Toluene	< 0.200	0.200	µg/g dry	2018-03-16	
1,1,1-Trichloroethane	< 0.050	0.050	µg/g dry	2018-03-16	
Trichloroethylene	< 0.040	0.040	µg/g dry	2018-03-16	
1,2,4-Trimethylbenzene	< 0.100	0.100	µg/g dry	2018-03-16	
1,3,5-Trimethylbenzene	< 0.100	0.100	µg/g dry	2018-03-16	
Vinyl chloride	< 0.100	0.100	µg/g dry	2018-03-16	
Xylenes (total)	**0.236**	0.100	µg/g dry	2018-03-16	
BH101-16 (8021267-16) | Matrix: Soil | Sampled: 2018-02-16					
General Parameters					
Moisture	**4.0**	1.0	% wet	2018-04-04	
Volatile Organic Compounds (VOC)					HT1
Benzene	**0.039**	0.020	µg/g dry	2018-04-03	
Surrogate: Toluene-d8	*90*	*60-140*	%	*2018-04-03*	
BH101-21 (8021267-21) | Matrix: Soil | Sampled: 2018-02-16					
General Parameters					
Moisture	**10.0**	1.0	% wet	2018-04-04	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-04-03	HT1
VPHs	< 20	20	mg/kg dry	N/A	
Surrogate: 2,4-Dichlorotoluene (VH/F1)	*80*	*60-140*	%	*2018-04-03*	HT1
Volatile Organic Compounds (VOC)					HT1
Benzene	**0.356**	0.020	µg/g dry	2018-04-03	
Ethylbenzene	**0.094**	0.050	µg/g dry	2018-04-03	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-04-03	
Styrene	< 0.050	0.050	µg/g dry	2018-04-03	

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021267
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43

Analyte	Result	RL	Units	Analyzed	Qualifier
BH101-21 (8021267-21) | Matrix: Soil | Sampled: 2018-02-16, Continued					
Volatile Organic Compounds (VOC), Continued					HT1
Toluene	**0.247**	0.200	µg/g dry	2018-04-03	
Xylenes (total)	**0.345**	0.100	µg/g dry	2018-04-03	
Surrogate: Toluene-d8	*83*	*60-140*	%	*2018-04-03*	
Surrogate: 4-Bromofluorobenzene	*66*	*60-140*	%	*2018-04-03*	
Surrogate: 1,4-Dichlorobenzene-d4	*70*	*60-140*	%	*2018-04-03*	
BH101-31 (8021267-31) | Matrix: Soil | Sampled: 2018-02-16					
General Parameters					
Moisture	**10.6**	1.0	% wet	2018-04-04	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-04-03	HT1
VPHs	< 20	20	mg/kg dry	N/A	
Surrogate: 2,4-Dichlorotoluene (VH/F1)	*73*	*60-140*	%	*2018-04-03*	HT1
Volatile Organic Compounds (VOC)					HT1
Benzene	**0.511**	0.020	µg/g dry	2018-04-03	
Ethylbenzene	**0.283**	0.050	µg/g dry	2018-04-03	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-04-03	
Styrene	< 0.050	0.050	µg/g dry	2018-04-03	
Toluene	**0.902**	0.200	µg/g dry	2018-04-03	
Xylenes (total)	**0.288**	0.100	µg/g dry	2018-04-03	
Surrogate: Toluene-d8	*85*	*60-140*	%	*2018-04-03*	
Surrogate: 4-Bromofluorobenzene	*67*	*60-140*	%	*2018-04-03*	
Surrogate: 1,4-Dichlorobenzene-d4	*74*	*60-140*	%	*2018-04-03*	
BH101-45 (8021267-38) | Matrix: Soil | Sampled: 2018-02-16					
General Parameters					
Moisture	**9.4**	1.0	% wet	2018-02-28	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-02-27	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	**0.049**	0.020	µg/g dry	2018-02-27	
Ethylbenzene	**0.082**	0.050	µg/g dry	2018-02-27	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-02-27	
Styrene	< 0.050	0.050	µg/g dry	2018-02-27	
Toluene	< 0.200	0.200	µg/g dry	2018-02-27	
Xylenes (total)	**0.309**	0.100	µg/g dry	2018-02-27	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021267
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43

Analyte	Result	RL	Units	Analyzed	Qualifier
BH101-45 (8021267-38) | Matrix: Soil | Sampled: 2018-02-16, Continued					
Volatile Organic Compounds (VOC), Continued					
Surrogate: Toluene-d8	*97*	*60-140*	*%*	*2018-02-27*	
Surrogate: 4-Bromofluorobenzene	*84*	*60-140*	*%*	*2018-02-27*	
Surrogate: 1,4-Dichlorobenzene-d4	*88*	*60-140*	*%*	*2018-02-27*	

Sample Qualifiers:

HT1 The sample was prepared and/or analyzed past the recommended holding time.

RA1 The Reporting Limit has been raised due to matrix interference.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021267
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43

Analysis Description	Method Ref.	Technique	Location
BTEX in Soil	EPA 5035A/5030B / EPA 8260D	Methanol Extract, Purge&Trap / GC-MSD (SIM)	Richmond
Glycols in Soil	EPA 8015B*	Water Extraction / Gas Chromatography (GC-FID)	Richmond
Moisture in Soil	ASTM D2974-87*	Gravimetry (Dried at 105C)	N/A
VH in Soil	EPA 5035A/5030B / BCMOE VHs	Methanol Extract, Purge&Trap / Purge&Trap or Headspace, Gas Chromatography (GC-FID)	Richmond
Volatile Organic Compounds in Soil	EPA 5035A/5030B / EPA 8260D	Methanol Extract, Purge&Trap / GC-MSD (SIM)	Richmond
VPHs in Soil	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)	N/A

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
% wet	Percent (as received basis)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
mg/kg dry	Milligrams per kilogram (dry weight basis)
µg/g dry	Micrograms per gram (dry weight basis)
ASTM	ASTM International Test Methods
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021267
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
BCMOE Aggregate Hydrocarbons, Batch B8B1315										
Blank (B8B1315-BLK1)				Prepared: 2018-02-22, Analyzed: 2018-02-23						
VHs (6-10)	< 20	20	µg/g wet							
LCS (B8B1315-BS2)				Prepared: 2018-02-22, Analyzed: 2018-02-23						
VHs (6-10)	380	20	µg/g wet	412		93	70-130			
BCMOE Aggregate Hydrocarbons, Batch B8B1620										
Blank (B8B1620-BLK1)				Prepared: 2018-02-27, Analyzed: 2018-02-27						
VHs (6-10)	< 20	20	µg/g wet							
LCS (B8B1620-BS2)				Prepared: 2018-02-27, Analyzed: 2018-02-27						
VHs (6-10)	380	20	µg/g wet	412		92	70-130			
Duplicate (B8B1620-DUP1)		**Source: 8021267-10**		Prepared: 2018-02-16, Analyzed: 2018-02-27						
VHs (6-10)	< 20	20	µg/g dry		< 20				27	
BCMOE Aggregate Hydrocarbons, Batch B8C0924										
Blank (B8C0924-BLK1)				Prepared: 2018-03-20, Analyzed: 2018-03-20						
VHs (6-10)	< 20	20	µg/g wet							
LCS (B8C0924-BS2)				Prepared: 2018-03-20, Analyzed: 2018-03-20						
VHs (6-10)	400	20	µg/g wet	412		96	70-130			
Duplicate (B8C0924-DUP1)		**Source: 8021267-15**		Prepared: 2018-03-20, Analyzed: 2018-03-20						
VHs (6-10)	< 20	20	µg/g dry		< 20				27	
BCMOE Aggregate Hydrocarbons, Batch B8D0067										
Blank (B8D0067-BLK1)				Prepared: 2018-04-03, Analyzed: 2018-04-03						
VHs (6-10)	< 20	20	µg/g wet							
Surrogate: 2,4-Dichlorotoluene (VH/F1)	*12.8*		*µg/g wet*	16.0		*80*	*60-140*			
LCS (B8D0067-BS2)				Prepared: 2018-04-03, Analyzed: 2018-04-03						
VHs (6-10)	470	20	µg/g wet	412		114	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021267
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
BCMOE Aggregate Hydrocarbons, Batch B8D0067, Continued										
LCS (B8D0067-BS2), Continued				Prepared: 2018-04-03, Analyzed: 2018-04-03						
Surrogate: 2,4-Dichlorotoluene (VH/F1)	*36.6*		*µg/g wet*	16.0		*229*	*60-140*			*S02*
General Parameters, Batch B8D0066										
Duplicate (B8D0066-DUP1)	**Source: 8021267-16**			Prepared: 2018-04-04, Analyzed: 2018-04-04						
Moisture	2.9	1.0	% wet		4.0			31.9	40	
Glycols, Batch B8C0860										
Blank (B8C0860-BLK1)				Prepared: 2018-03-12, Analyzed: 2018-03-14						
Propylene glycol	< 10	10	mg/kg wet							
Ethylene glycol	< 10	10	mg/kg wet							
Diethylene glycol	< 10	10	mg/kg wet							
Triethylene glycol	< 10	10	mg/kg wet							
Surrogate: Tetramethylene Glycol	*197*		*mg/kg wet*	206		*95*	*70-119*			
LCS (B8C0860-BS1)				Prepared: 2018-03-12, Analyzed: 2018-03-14						
Propylene glycol	19	10	mg/kg wet	20.0		96	64-124			
Ethylene glycol	23	10	mg/kg wet	20.0		113	69-124			
Diethylene glycol	20	10	mg/kg wet	20.0		98	77-117			
Triethylene glycol	20	10	mg/kg wet	20.0		101	60-129			
Surrogate: Tetramethylene Glycol	*176*		*mg/kg wet*	206		*86*	*70-119*			
LCS Dup (B8C0860-BSD1)				Prepared: 2018-03-12, Analyzed: 2018-03-14						
Propylene glycol	20	10	mg/kg wet	20.0		100	64-124	4	30	
Ethylene glycol	23	10	mg/kg wet	20.0		114	69-124	< 1	30	
Diethylene glycol	20	10	mg/kg wet	20.0		98	77-117	< 1	30	
Triethylene glycol	22	10	mg/kg wet	20.0		109	60-129	8	30	
Surrogate: Tetramethylene Glycol	*180*		*mg/kg wet*	206		*87*	*70-119*			
Volatile Organic Compounds (VOC), Batch B8B1315										
Blank (B8B1315-BLK1)				Prepared: 2018-02-22, Analyzed: 2018-02-23						
Benzene	< 0.020	0.020	µg/g wet							
Ethylbenzene	< 0.050	0.050	µg/g wet							
Methyl tert-butyl ether	< 0.040	0.040	µg/g wet							
Styrene	< 0.050	0.050	µg/g wet							
Toluene	< 0.200	0.200	µg/g wet							
Xylenes (total)	< 0.100	0.100	µg/g wet							
Surrogate: Toluene-d8	*4.16*		*µg/g wet*	3.94		*105*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.64*		*µg/g wet*	4.00		*91*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.71*		*µg/g wet*	4.00		*93*	*60-140*			
LCS (B8B1315-BS1)				Prepared: 2018-02-22, Analyzed: 2018-02-23						
Benzene	2.19	0.020	µg/g wet	2.00		110	73-131			
Ethylbenzene	2.15	0.050	µg/g wet	2.00		107	71-127			
Methyl tert-butyl ether	2.04	0.040	µg/g wet	1.72		118	60-131			
Styrene	1.90	0.050	µg/g wet	2.00		95	65-126			
Toluene	2.12	0.200	µg/g wet	2.00		106	74-136			
Xylenes (total)	6.30	0.100	µg/g wet	6.00		105	71-125			
Surrogate: Toluene-d8	*4.22*		*µg/g wet*	3.94		*107*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*4.13*		*µg/g wet*	4.00		*103*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*4.65*		*µg/g wet*	4.00		*116*	*60-140*			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021267
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8B1620										
Blank (B8B1620-BLK1)				Prepared: 2018-02-27, Analyzed: 2018-02-27						
Benzene	< 0.020	0.020	µg/g wet							
Ethylbenzene	< 0.050	0.050	µg/g wet							
Methyl tert-butyl ether	< 0.040	0.040	µg/g wet							
Styrene	< 0.050	0.050	µg/g wet							
Toluene	< 0.200	0.200	µg/g wet							
Xylenes (total)	< 0.100	0.100	µg/g wet							
Surrogate: Toluene-d8	*4.06*		*µg/g wet*	3.94		*103*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.86*		*µg/g wet*	4.00		*96*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*4.02*		*µg/g wet*	4.00		*101*	*60-140*			
LCS (B8B1620-BS1)				Prepared: 2018-02-27, Analyzed: 2018-02-27						
Benzene	2.53	0.020	µg/g wet	2.00		127	73-131			
Ethylbenzene	2.45	0.050	µg/g wet	2.00		122	71-127			
Methyl tert-butyl ether	2.63	0.040	µg/g wet	1.72		153	60-131			
Styrene	2.28	0.050	µg/g wet	2.00		114	65-126			
Toluene	2.49	0.200	µg/g wet	2.00		124	74-136			
Xylenes (total)	7.05	0.100	µg/g wet	6.00		117	71-125			
Surrogate: Toluene-d8	*5.11*		*µg/g wet*	3.94		*130*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*5.21*		*µg/g wet*	4.00		*130*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*5.64*		*µg/g wet*	4.00		*141*	*60-140*			*S02*
Duplicate (B8B1620-DUP1)		**Source: 8021267-10**		Prepared: 2018-02-16, Analyzed: 2018-02-27						
Benzene	0.064	0.020	µg/g dry		0.053				50	
Ethylbenzene	0.108	0.050	µg/g dry		0.093				50	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry		< 0.040				50	
Styrene	< 0.050	0.050	µg/g dry		< 0.050				50	
Toluene	0.222	0.200	µg/g dry		< 0.200				50	
Xylenes (total)	0.455	0.100	µg/g dry		0.390				50	
Surrogate: Toluene-d8	*2.58*		*µg/g dry*	1.96		*131*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*2.15*		*µg/g dry*	1.99		*108*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*2.18*		*µg/g dry*	1.99		*110*	*60-140*			
Matrix Spike (B8B1620-MS1)		**Source: 8021267-10**		Prepared: 2018-02-16, Analyzed: 2018-02-27						S09
Benzene	5.02	0.020	µg/g dry	3.59	0.053	138	60-140			
Ethylbenzene	4.67	0.050	µg/g dry	3.59	0.093	128	60-140			
Methyl tert-butyl ether	5.00	0.040	µg/g dry	3.08	< 0.040	162	60-140			SPK1
Styrene	4.33	0.050	µg/g dry	3.59	< 0.050	121	60-140			
Toluene	5.24	0.200	µg/g dry	3.59	< 0.200	146	60-140			SPK1
Xylenes (total)	13.7	0.100	µg/g dry	10.8	0.390	123	60-140			
Surrogate: Toluene-d8	*3.15*		*µg/g dry*	1.96		*160*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*2.92*		*µg/g dry*	1.99		*147*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.23*		*µg/g dry*	1.99		*162*	*60-140*			
Volatile Organic Compounds (VOC), Batch B8C0309										
Blank (B8C0309-BLK1)				Prepared: 2018-03-05, Analyzed: 2018-03-06						
Benzene	< 0.020	0.020	µg/g wet							
Ethylbenzene	< 0.050	0.050	µg/g wet							
Methyl tert-butyl ether	< 0.040	0.040	µg/g wet							
Styrene	< 0.050	0.050	µg/g wet							
Toluene	< 0.200	0.200	µg/g wet							
Xylenes (total)	< 0.100	0.100	µg/g wet							
Surrogate: Toluene-d8	*4.76*		*µg/g wet*	3.94		*121*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*4.05*		*µg/g wet*	4.00		*101*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.58*		*µg/g wet*	4.00		*90*	*60-140*			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021267
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8C0309, Continued										
LCS (B8C0309-BS1)				Prepared: 2018-03-05, Analyzed: 2018-03-05						
Benzene	2.13	0.020	µg/g wet	2.00		107	73-131			
Ethylbenzene	2.11	0.050	µg/g wet	2.00		106	71-127			
Methyl tert-butyl ether	2.21	0.040	µg/g wet	1.72		128	60-131			
Styrene	1.83	0.050	µg/g wet	2.00		92	65-126			
Toluene	2.29	0.200	µg/g wet	2.00		115	74-136			
Xylenes (total)	6.16	0.100	µg/g wet	6.00		103	71-125			
Surrogate: Toluene-d8	*4.91*		*µg/g wet*	3.94		*125*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*4.63*		*µg/g wet*	4.00		*116*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*4.81*		*µg/g wet*	4.00		*120*	*60-140*			
Volatile Organic Compounds (VOC), Batch B8D0067										
Blank (B8D0067-BLK1)				Prepared: 2018-04-03, Analyzed: 2018-04-03						
Benzene	< 0.030	0.030	µg/g wet							
Ethylbenzene	< 0.050	0.050	µg/g wet							
Methyl tert-butyl ether	< 0.040	0.040	µg/g wet							
Styrene	< 0.050	0.050	µg/g wet							
Toluene	< 0.200	0.200	µg/g wet							
Xylenes (total)	< 0.100	0.100	µg/g wet							
Surrogate: Toluene-d8	*3.26*		*µg/g wet*	3.94		*83*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*2.68*		*µg/g wet*	4.00		*67*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*2.84*		*µg/g wet*	4.00		*71*	*60-140*			
LCS (B8D0067-BS1)				Prepared: 2018-04-03, Analyzed: 2018-04-04						
Benzene	1.81	0.030	µg/g wet	2.00		91	73-131			
Ethylbenzene	1.47	0.050	µg/g wet	2.00		74	71-127			
Methyl tert-butyl ether	1.91	0.040	µg/g wet	1.72		111	60-131			
Styrene	1.41	0.050	µg/g wet	2.00		71	65-126			
Toluene	1.85	0.200	µg/g wet	2.00		93	74-136			
Xylenes (total)	4.52	0.100	µg/g wet	6.00		75	71-125			
Surrogate: Toluene-d8	*2.91*		*µg/g wet*	3.94		*74*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.41*		*µg/g wet*	4.00		*85*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*4.61*		*µg/g wet*	4.00		*115*	*60-140*			

QC Qualifiers:

S02	Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
S09	The surrogate recovery for this sample is outside of established control limits .
SPK1	The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

APPENDIX 3: REVISION HISTORY

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021267
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:43

Sample ID	Changed	Change	Analysis	Analyte(s)
8021267-10	2018-02-27	Added	BTEX/VH/VPH Pkg	
8021267-10	2018-02-27	Added	Moisture	
8021267-13	2018-03-02	Added	BTEX	
8021267-13	2018-03-02	Added	Moisture	
8021267-06	2018-03-12	Added	Glycols	
8021267-15	2018-03-12	Added	Moisture	
8021267-15	2018-03-12	Added	VOC/VH/VPH Pkg	
8021267-16	2018-04-03	Added	BTEX	
8021267-16	2018-04-03	VersionID	BTEX	
8021267-16	2018-04-03	Added	Moisture	
8021267-21	2018-04-03	Added	BTEX/VH/VPH Pkg	
8021267-21	2018-04-03	Added	Moisture	
8021267-31	2018-04-03	Added	BTEX/VH/VPH Pkg	
8021267-31	2018-04-03	Added	Moisture	

CARO ANALYTICAL SERVICES

Caring About Results, Obviously.

CARO.ca 1-888-311-8846

CARO BC COC, Rev 2017-

CHAIN OF CUSTODY RECORD COC# B 60692 PAGE 1 OF 2

V6V 2K9
C V1X 5C3
B T5S 1H7

80212677

PORT TO ☑

RELINQUISHED BY:	DATE: Feb 16, 18	RECEIVED BY:	DATE: 02/19
Ardavan MPour	TIME:	NOVEX TC	TIME: 1330

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☑
Other*
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Show on Report
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: _____ OTHER: _____

REPORT TO:

COMPANY: Next Environmental
ADDRESS:
CONTACT: Ardavan MPour
TEL/FAX:
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☑ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: amansourpour@
EMAIL 2: cSteele@
EMAIL 3: gleung@

COMPANY:
ADDRESS:
CONTACT: Graham Marshall
TEL/FAX:
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@
EMAIL 2:
EMAIL 3:
PO #:

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: ☐

PROJECT NUMBER / INFO: SOL040704.01

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

SAMPLED BY: AM

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	MATRIX: OTHER WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE YYYY-MM-DD	SAMPLING: TIME HH:MM	COMMENTS: CHLORINATED	COMMENTS: FILTERED	COMMENTS: PRESERVED	COMMENTS: (e.g. flow/volume media ID/notes)
BH101-01			✓			2018-02-16	AM				
BH101-02											
BH101-03											
BH101-04											
BH101-05											
BH101-06											
BH101-07											
BH101-08											
BH101-09											
BH101-10											
BH101-11											
BH101-12											

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐
VOC ☐ VPH ☐
EPH ☐ PHC F2-F4 ☐
PAH ☐ L/HEPH ☐
PHENOLS Chlorinated ☐ Non-Chlor. ☐
PCB ☐ GLYCOLS ☐ HAA ☐
PESTICIDES ☐ ACID HERBICIDES ☐
METALS - WATER TOTAL ☐ Hg ☐
METALS - WATER DISSOLVED ☐ Hg ☐
METALS - SOIL (SALM) ☐ inc. pH ☐
pH ☐ EC ☐ ALK ☐
TSS ☐ VSS ☐ TDS ☐
BOD ☐ COD ☐
TOG ☐ MOG ☐
FECAL COLIFORMS ☐ HPC ☐
TOTAL COLIFORMS ☐ E. coli ☐
ASBESTOS
HOLD
POSSIBLE SAMPLE HAZARD CODE(S)

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply):

*** OTHER INSTRUCTIONS:**

If you would like to talk to a real live Scientist about your project requirements, please check here: ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 9.9 ICE: Y ☑ N ☐
COOLER 2 (°C): ICE: Y ☐ N ☐
COOLER 3 (°C): ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO ANALYTICAL SERVICES
Caring About Results, Obviously.

CARO.ca **1-888-311-8846**
#110-4011 Viking Way, Richmond, BC V6V 2K9
#102-3677 Highway 97N, Kelowna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7

CARO BC COC, Rev 2017-

CHAIN OF CUSTODY RECORD COC# B 60693 PAGE 2 OF 3

RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
Ardavan MPour	TIME:	NOVEK TC	TIME: 1330

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☑
Other*
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Show on Report ☐
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: _____ OTHER: _____

PROJECT NUMBER / INFO:

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

REPORT TO:
COMPANY: Next Environmental
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☑ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☑
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:
PO #:

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: ☐

SAMPLED BY: AM

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐ | VOC ☐ VPH ☐ | EPH ☐ PHC F2-F4 ☐ | PAH ☐ L/HEPH ☐ | PHENOLS Chlorinated ☐ Non-Chlor. ☐ | PCB ☐ GLYCOLS ☐ HAA ☐ | PESTICIDES ☐ ACID HERBICIDES ☐ | METALS - WATER TOTAL Hg ☐ | METALS - WATER DISSOLVED Hg ☐ | METALS - SOIL (SALM) ☐ inc. pH ☐ | pH ☐ EC ☐ ALK ☐ | TSS ☐ VSS ☐ TDS ☐ | BOD ☐ COD ☐ | TOG ☐ MOG ☐ | FECAL COLIFORMS ☐ HPC ☐ | TOTAL COLIFORMS ☐ *E. coli* ☐ | ASBESTOS | HOLD | POSSIBLE SAMPLE HAZARD CODE(S)

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE YYYY-MM-DD	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)
BH101-13			✓			2018-02-16	PM				
BH101-14			✓								
BH101-15			✓								
BH101-16			✓								
BH101-17			✓								
BH101-18			✓								
BH101-19			✓								
BH101-20			✓								
BH101-21			✓								
BH101-22			✓								
BH101-23			✓								
BH101-24			✓								

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply):

*** OTHER INSTRUCTIONS:**

If you would like to talk to a real live Scientist about your project requirements, please check here: ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 9.9 ICE: Y ☑ N ☐
COOLER 2 (°C): ICE: Y ☐ N ☐
COOLER 3 (°C): ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO
ANALYTICAL SERVICES
Caring About Results, Obviously.

CARO.ca **1-888-311-8846**

#110-4011 Viking Way, Richmond, BC V6V 2K9
#102-3677 Highway 97N, Kelowna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7

CARO BC COC, Rev 2017-

CHAIN OF CUSTODY RECORD COC# B 60694 PAGE 3 OF

RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
Ardavan MPour	TIME:	NOVEX TL	TIME: 1330

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☑
Other* ____
***Contact Lab To Confirm. Surcharge May Apply**

REGULATORY APPLICATION: Show on Report
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: ____ OTHER: ____

PROJECT NUMBER / INFO:

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

REPORT TO:
COMPANY: Next Environmental
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☑ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☑
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:
PO #:

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: ☐

SAMPLED BY: AM

ANALYSES REQUESTED:

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE YYYY-MM-DD	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)	BTEX ☐ VPH ☐ PHC F1 ☐	VOC ☐ VPH ☐	EPH ☐ PHC F2-F4 ☐	PAH ☐ L/HEPH ☐	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL Hg ☐	METALS - WATER DISSOLVED Hg ☐	METALS - SOIL (SALM) ☐ inc. pH ☐	pH ☐ EC ☐ ALK ☐	TSS ☐ VSS ☐ TDS ☐	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ E. coli ☐	ASBESTOS	HOLD	POSSIBLE SAMPLE HAZARD CODE(S)
BH101-25						2018-02-16	PM																							
BH101-26																														
BH101-27																														
BH101-28																														
BH101-29																														
BH101-30																														
BH101-31																														
BH101-32																														
BH101-33																														
BH101-34																														
BH101-35																														
BH101-36																														

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply):

*** OTHER INSTRUCTIONS:**

If you would like to talk to a real live Scientist about your project requirements, please check here: ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 9.9 ICE: Y ☑ N ☐
COOLER 2 (°C): ____ ICE: Y ☐ N ☐
COOLER 3 (°C): ____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO
ANALYTICAL SERVICES
Caring About Results, Obviously.

CARO.ca **1-888-311-8846**

#110-4011 Viking Way, Richmond, BC V6V 2K9
#102-3677 Highway 97N, Kelowna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7

CARO BC COC, Rev 2017-

CHAIN OF CUSTODY RECORD

COC# B 60696 PAGE 4 OF

RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE: 02/19
	TIME:	NOVEX TL	TIME: 1330

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☑
Other* ____
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Show on Report ☐
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: ____ OTHER: ____

REPORT TO:
COMPANY: Next Environmental
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☑ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☑
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:
PO #:

PROJECT NUMBER / INFO:

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: ☐

SAMPLED BY:

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	MATRIX: OTHER WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE YYYY-MM-DD	SAMPLING: TIME HH:MM	COMMENTS: CHLORINATED	COMMENTS: FILTERED	COMMENTS: PRESERVED	COMMENTS: (e.g. flow/volume media ID/notes)	HOLD	POSSIBLE SAMPLE HAZARD CODE(S)
BH101-37			✓			2018-02-16	PM					✓	

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐
VOC ☐ VPH ☐
EPH ☐ PHC F2-F4 ☐
PAH ☐ L/HEPH ☐
PHENOLS Chlorinated ☐ Non-Chlor. ☐
PCB ☐ GLYCOLS ☐ HAA ☐
PESTICIDES ☐ ACID HERBICIDES ☐
METALS - WATER TOTAL Hg ☐
METALS - WATER DISSOLVED Hg ☐
METALS - SOIL (SALM) ☐ inc. pH ☐
pH ☐ EC ☐ ALK ☐
TSS ☐ VSS ☐ TDS ☐
BOD ☐ COD ☐
TOG ☐ MOG ☐
FECAL COLIFORMS ☐ HPC ☐
TOTAL COLIFORMS ☐ *E. coli* ☐
ASBESTOS

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply): ____

*** OTHER INSTRUCTIONS:**

If you would like to talk to a real live Scientist about your project requirements, please check here: ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 9.9 ICE: Y ☑ N ☐
COOLER 2 (°C): ____ ICE: Y ☐ N ☐
COOLER 3 (°C): ____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CERTIFICATE OF ANALYSIS

REPORTED TO	Next Environmental Inc 215 - 2550 Boundary Road Burnaby, BC V5M 3Z3		
ATTENTION	Ardavan Mansourpour	**WORK ORDER**	8021493
PO NUMBER		**RECEIVED / TEMP**	2018-02-21 11:00 / 7°C
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:36
PROJECT INFO		**COC NUMBER**	B60527/28/29/30/31

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

Work Order Comments:

This is a revised report; please refer to Appendix 3 for details.

If you have any questions or concerns, please contact me at bshaw@caro.ca

Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Client Service Coordinator

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021493
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:36

Analyte	Result	RL	Units	Analyzed	Qualifier
BH102-03 (8021493-03) | Matrix: Soil | Sampled: 2018-02-20					
General Parameters					
Moisture	**9.1**	1.0	% wet	2018-02-26	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-02-23	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-02-23	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-02-23	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-02-23	
Styrene	< 0.050	0.050	µg/g dry	2018-02-23	
Toluene	< 0.200	0.200	µg/g dry	2018-02-23	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-02-23	
Surrogate: Toluene-d8	*111*	*60-140*	%	*2018-02-23*	
Surrogate: 4-Bromofluorobenzene	*102*	*60-140*	%	*2018-02-23*	
Surrogate: 1,4-Dichlorobenzene-d4	*106*	*60-140*	%	*2018-02-23*	
BH105-03 (8021493-19) | Matrix: Soil | Sampled: 2018-02-20					
General Parameters					
Moisture	**10.1**	1.0	% wet	2018-02-26	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-02-23	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-02-23	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-02-23	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-02-23	
Styrene	< 0.050	0.050	µg/g dry	2018-02-23	
Toluene	< 0.200	0.200	µg/g dry	2018-02-23	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-02-23	
Surrogate: Toluene-d8	*113*	*60-140*	%	*2018-02-23*	
Surrogate: 4-Bromofluorobenzene	*102*	*60-140*	%	*2018-02-23*	
Surrogate: 1,4-Dichlorobenzene-d4	*105*	*60-140*	%	*2018-02-23*	
BH106-03 (8021493-25) | Matrix: Soil | Sampled: 2018-02-20					
General Parameters					
Moisture	**9.1**	1.0	% wet	2018-02-26	
BCMOE Aggregate Hydrocarbons					

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021493
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:36

Analyte	Result	RL	Units	Analyzed	Qualifier
BH106-03 (8021493-25) | Matrix: Soil | Sampled: 2018-02-20, Continued					
BCMOE Aggregate Hydrocarbons, Continued					
VHs (6-10)	< 20	20	µg/g dry	2018-02-23	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-02-23	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-02-23	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-02-23	
Styrene	< 0.050	0.050	µg/g dry	2018-02-23	
Toluene	< 0.200	0.200	µg/g dry	2018-02-23	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-02-23	
Surrogate: Toluene-d8	*112*	*60-140*	%	*2018-02-23*	
Surrogate: 4-Bromofluorobenzene	*101*	*60-140*	%	*2018-02-23*	
Surrogate: 1,4-Dichlorobenzene-d4	*105*	*60-140*	%	*2018-02-23*	
BH106-05 (8021493-27) | Matrix: Soil | Sampled: 2018-02-20					
General Parameters					
Moisture	**6.8**	1.0	% wet	2018-03-05	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-03-06	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-03-06	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-03-06	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-03-06	
Styrene	< 0.050	0.050	µg/g dry	2018-03-06	
Toluene	< 0.200	0.200	µg/g dry	2018-03-06	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-03-06	
Surrogate: Toluene-d8	*89*	*60-140*	%	*2018-03-06*	
Surrogate: 4-Bromofluorobenzene	*64*	*60-140*	%	*2018-03-06*	
Surrogate: 1,4-Dichlorobenzene-d4	*51*	*60-140*	%	*2018-03-06*	S02
BH109-03 (8021493-42) | Matrix: Soil | Sampled: 2018-02-20					
General Parameters					
Moisture	**6.8**	1.0	% wet	2018-02-26	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-02-23	
VPHs	< 20	20	mg/kg dry	N/A	

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021493
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:36

Analyte	Result	RL	Units	Analyzed	Qualifier
BH109-03 (8021493-42) | Matrix: Soil | Sampled: 2018-02-20, Continued					
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-02-23	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-02-23	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-02-23	
Styrene	< 0.050	0.050	µg/g dry	2018-02-23	
Toluene	< 0.200	0.200	µg/g dry	2018-02-23	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-02-23	
Surrogate: Toluene-d8	*108*	*60-140*	%	*2018-02-23*	
Surrogate: 4-Bromofluorobenzene	*95*	*60-140*	%	*2018-02-23*	
Surrogate: 1,4-Dichlorobenzene-d4	*96*	*60-140*	%	*2018-02-23*	
BH109-05 (8021493-44) | Matrix: Soil | Sampled: 2018-02-20					
General Parameters					
Moisture	**6.7**	1.0	% wet	2018-02-28	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-02-27	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-02-27	
Ethylbenzene	**0.424**	0.050	µg/g dry	2018-02-27	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-02-27	
Styrene	< 0.050	0.050	µg/g dry	2018-02-27	
Toluene	**0.353**	0.200	µg/g dry	2018-02-27	
Xylenes (total)	**2.89**	0.100	µg/g dry	2018-02-27	
Surrogate: Toluene-d8	*104*	*60-140*	%	*2018-02-27*	
Surrogate: 4-Bromofluorobenzene	*94*	*60-140*	%	*2018-02-27*	
Surrogate: 1,4-Dichlorobenzene-d4	*98*	*60-140*	%	*2018-02-27*	
BH101-40 (8021493-47) | Matrix: Soil | Sampled: 2018-02-20					
General Parameters					
Moisture	**6.4**	1.0	% wet	2018-04-04	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-04-03	HT1
VPHs	< 20	20	mg/kg dry	N/A	
Surrogate: 2,4-Dichlorotoluene (VH/F1)	*72*	*60-140*	%	*2018-04-03*	HT1
Volatile Organic Compounds (VOC)					HT1
Benzene	< 0.020	0.020	µg/g dry	2018-04-04	
1,2-Dichloroethane	**0.074**	0.050	µg/g dry	2018-04-04	

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021493
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:36

Analyte	Result	RL	Units	Analyzed	Qualifier
BH101-40 (8021493-47) | Matrix: Soil | Sampled: 2018-02-20, Continued					
Volatile Organic Compounds (VOC), Continued					HT1
Ethylbenzene	**0.138**	0.050	µg/g dry	2018-04-04	
Styrene	< 0.050	0.050	µg/g dry	2018-04-04	
Toluene	**0.678**	0.200	µg/g dry	2018-04-04	
Xylenes (total)	**0.159**	0.100	µg/g dry	2018-04-04	
Surrogate: Toluene-d8	*85*	*60-140*	%	*2018-04-04*	
Surrogate: 4-Bromofluorobenzene	*63*	*60-140*	%	*2018-04-04*	
Surrogate: 1,4-Dichlorobenzene-d4	*62*	*60-140*	%	*2018-04-04*	

Sample Qualifiers:

HT1	The sample was prepared and/or analyzed past the recommended holding time.
S02	Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021493
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:36

Analysis Description	Method Ref.	Technique	Location
BTEX in Soil	EPA 5035A/5030B / EPA 8260D	Methanol Extract, Purge&Trap / GC-MSD (SIM)	Richmond
Moisture in Soil	ASTM D2974-87*	Gravimetry (Dried at 105C)	N/A
VH in Soil	EPA 5035A/5030B / BCMOE VHs	Methanol Extract, Purge&Trap / Purge&Trap or Headspace, Gas Chromatography (GC-FID)	Richmond
Volatile Organic Compounds in Soil	EPA 5035A/5030B / EPA 8260D	Methanol Extract, Purge&Trap / GC-MSD (SIM)	Richmond
VPHs in Soil	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)	N/A

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
% wet	Percent (as received basis)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
mg/kg dry	Milligrams per kilogram (dry weight basis)
µg/g dry	Micrograms per gram (dry weight basis)
ASTM	ASTM International Test Methods
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021493
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:36

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
BCMOE Aggregate Hydrocarbons, Batch B8B1315										
Blank (B8B1315-BLK1)				Prepared: 2018-02-22, Analyzed: 2018-02-23						
VHs (6-10)	< 20	20	µg/g wet							
LCS (B8B1315-BS2)				Prepared: 2018-02-22, Analyzed: 2018-02-23						
VHs (6-10)	380	20	µg/g wet	412		93	70-130			
BCMOE Aggregate Hydrocarbons, Batch B8B1620										
Blank (B8B1620-BLK1)				Prepared: 2018-02-27, Analyzed: 2018-02-27						
VHs (6-10)	< 20	20	µg/g wet							
LCS (B8B1620-BS2)				Prepared: 2018-02-27, Analyzed: 2018-02-27						
VHs (6-10)	380	20	µg/g wet	412		92	70-130			
BCMOE Aggregate Hydrocarbons, Batch B8C0309										
Blank (B8C0309-BLK1)				Prepared: 2018-03-05, Analyzed: 2018-03-06						
VHs (6-10)	< 20	20	µg/g wet							
LCS (B8C0309-BS2)				Prepared: 2018-03-05, Analyzed: 2018-03-07						
VHs (6-10)	840	20	µg/g wet	824		102	70-130			
BCMOE Aggregate Hydrocarbons, Batch B8D0067										
Blank (B8D0067-BLK1)				Prepared: 2018-04-03, Analyzed: 2018-04-03						
VHs (6-10)	< 20	20	µg/g wet							
Surrogate: 2,4-Dichlorotoluene (VH/F1)	*12.8*		*µg/g wet*	16.0		*80*	*60-140*			
LCS (B8D0067-BS2)				Prepared: 2018-04-03, Analyzed: 2018-04-03						
VHs (6-10)	470	20	µg/g wet	412		114	70-130			
Surrogate: 2,4-Dichlorotoluene (VH/F1)	*36.6*		*µg/g wet*	16.0		*229*	*60-140*			*S02*
Duplicate (B8D0067-DUP1)	**Source: 8021493-47**			Prepared: 2018-02-16, Analyzed: 2018-04-03						
VHs (6-10)	< 20	20	µg/g dry		< 20				27	
Surrogate: 2,4-Dichlorotoluene (VH/F1)	*8.58*		*µg/g dry*	12.6		*68*	*60-140*			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021493
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:36

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
General Parameters, Batch B8B1469										
Duplicate (B8B1469-DUP1)		**Source: 8021493-03**		Prepared: 2018-02-26, Analyzed: 2018-02-26						
Moisture	9.4	1.0	% wet		9.1			3.2	40	
Volatile Organic Compounds (VOC), Batch B8B1315										
Blank (B8B1315-BLK1)				Prepared: 2018-02-22, Analyzed: 2018-02-23						
Benzene	< 0.020	0.020	µg/g wet							
Ethylbenzene	< 0.050	0.050	µg/g wet							
Methyl tert-butyl ether	< 0.040	0.040	µg/g wet							
Styrene	< 0.050	0.050	µg/g wet							
Toluene	< 0.200	0.200	µg/g wet							
Xylenes (total)	< 0.100	0.100	µg/g wet							
Surrogate: Toluene-d8	*4.16*		*µg/g wet*	3.94		*105*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.64*		*µg/g wet*	4.00		*91*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.71*		*µg/g wet*	4.00		*93*	*60-140*			
LCS (B8B1315-BS1)				Prepared: 2018-02-22, Analyzed: 2018-02-23						
Benzene	2.19	0.020	µg/g wet	2.00		110	73-131			
Ethylbenzene	2.15	0.050	µg/g wet	2.00		107	71-127			
Methyl tert-butyl ether	2.04	0.040	µg/g wet	1.72		118	60-131			
Styrene	1.90	0.050	µg/g wet	2.00		95	65-126			
Toluene	2.12	0.200	µg/g wet	2.00		106	74-136			
Xylenes (total)	6.30	0.100	µg/g wet	6.00		105	71-125			
Surrogate: Toluene-d8	*4.22*		*µg/g wet*	3.94		*107*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*4.13*		*µg/g wet*	4.00		*103*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*4.65*		*µg/g wet*	4.00		*116*	*60-140*			
Volatile Organic Compounds (VOC), Batch B8B1620										
Blank (B8B1620-BLK1)				Prepared: 2018-02-27, Analyzed: 2018-02-27						
Benzene	< 0.020	0.020	µg/g wet							
Ethylbenzene	< 0.050	0.050	µg/g wet							
Methyl tert-butyl ether	< 0.040	0.040	µg/g wet							
Styrene	< 0.050	0.050	µg/g wet							
Toluene	< 0.200	0.200	µg/g wet							
Xylenes (total)	< 0.100	0.100	µg/g wet							
Surrogate: Toluene-d8	*4.06*		*µg/g wet*	3.94		*103*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.86*		*µg/g wet*	4.00		*96*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*4.02*		*µg/g wet*	4.00		*101*	*60-140*			
LCS (B8B1620-BS1)				Prepared: 2018-02-27, Analyzed: 2018-02-27						
Benzene	2.53	0.020	µg/g wet	2.00		127	73-131			
Ethylbenzene	2.45	0.050	µg/g wet	2.00		122	71-127			
Methyl tert-butyl ether	2.63	0.040	µg/g wet	1.72		153	60-131			
Styrene	2.28	0.050	µg/g wet	2.00		114	65-126			
Toluene	2.49	0.200	µg/g wet	2.00		124	74-136			
Xylenes (total)	7.05	0.100	µg/g wet	6.00		117	71-125			
Surrogate: Toluene-d8	*5.11*		*µg/g wet*	3.94		*130*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*5.21*		*µg/g wet*	4.00		*130*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*5.64*		*µg/g wet*	4.00		*141*	*60-140*			*S02*
Volatile Organic Compounds (VOC), Batch B8C0309										
Blank (B8C0309-BLK1)				Prepared: 2018-03-05, Analyzed: 2018-03-06						
Benzene	< 0.020	0.020	µg/g wet							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021493
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:36

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8C0309, Continued										
Blank (B8C0309-BLK1), Continued				Prepared: 2018-03-05, Analyzed: 2018-03-06						
Ethylbenzene	< 0.050	0.050	µg/g wet							
Methyl tert-butyl ether	< 0.040	0.040	µg/g wet							
Styrene	< 0.050	0.050	µg/g wet							
Toluene	< 0.200	0.200	µg/g wet							
Xylenes (total)	< 0.100	0.100	µg/g wet							
Surrogate: Toluene-d8	*4.76*		*µg/g wet*	3.94		*121*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*4.05*		*µg/g wet*	4.00		*101*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.58*		*µg/g wet*	4.00		*90*	*60-140*			
LCS (B8C0309-BS1)				Prepared: 2018-03-05, Analyzed: 2018-03-05						
Benzene	2.13	0.020	µg/g wet	2.00		107	73-131			
Ethylbenzene	2.11	0.050	µg/g wet	2.00		106	71-127			
Methyl tert-butyl ether	2.21	0.040	µg/g wet	1.72		128	60-131			
Styrene	1.83	0.050	µg/g wet	2.00		92	65-126			
Toluene	2.29	0.200	µg/g wet	2.00		115	74-136			
Xylenes (total)	6.16	0.100	µg/g wet	6.00		103	71-125			
Surrogate: Toluene-d8	*4.91*		*µg/g wet*	3.94		*125*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*4.63*		*µg/g wet*	4.00		*116*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*4.81*		*µg/g wet*	4.00		*120*	*60-140*			
Volatile Organic Compounds (VOC), Batch B8D0067										
Blank (B8D0067-BLK1)				Prepared: 2018-04-03, Analyzed: 2018-04-03						
Benzene	< 0.020	0.020	µg/g wet							
1,2-Dichloroethane	< 0.050	0.050	µg/g wet							
Ethylbenzene	< 0.050	0.050	µg/g wet							
Styrene	< 0.050	0.050	µg/g wet							
Toluene	< 0.200	0.200	µg/g wet							
Xylenes (total)	< 0.100	0.100	µg/g wet							
Surrogate: Toluene-d8	*3.26*		*µg/g wet*	3.94		*83*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*2.68*		*µg/g wet*	4.00		*67*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*2.84*		*µg/g wet*	4.00		*71*	*60-140*			
LCS (B8D0067-BS1)				Prepared: 2018-04-03, Analyzed: 2018-04-04						
Benzene	1.81	0.020	µg/g wet	2.00		91	73-131			
1,2-Dichloroethane	2.04	0.050	µg/g wet	2.02		101	72-140			
Ethylbenzene	1.47	0.050	µg/g wet	2.00		74	71-127			
Styrene	1.41	0.050	µg/g wet	2.00		71	65-126			
Toluene	1.85	0.200	µg/g wet	2.00		93	74-136			
Xylenes (total)	4.52	0.100	µg/g wet	6.00		75	71-125			
Surrogate: Toluene-d8	*2.91*		*µg/g wet*	3.94		*74*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.41*		*µg/g wet*	4.00		*85*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*4.61*		*µg/g wet*	4.00		*115*	*60-140*			
Duplicate (B8D0067-DUP1)	**Source: 8021493-47**			Prepared: 2018-02-16, Analyzed: 2018-04-04						
Benzene	< 0.020	0.020	µg/g dry		< 0.020				50	
1,2-Dichloroethane	0.058	0.050	µg/g dry		0.074				50	
Ethylbenzene	0.107	0.050	µg/g dry		0.138				50	
Styrene	< 0.050	0.050	µg/g dry		< 0.050				50	
Toluene	0.561	0.200	µg/g dry		0.678				50	
Xylenes (total)	0.126	0.100	µg/g dry		0.159				50	
Surrogate: Toluene-d8	*1.31*		*µg/g dry*	1.84		*71*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*1.02*		*µg/g dry*	1.87		*55*	*60-140*			*S02*
Surrogate: 1,4-Dichlorobenzene-d4	*1.07*		*µg/g dry*	1.87		*57*	*60-140*			*S02*

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021493
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:36

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8D0067, Continued										
Matrix Spike (B8D0067-MS1)	**Source: 8021493-47**			Prepared: 2018-02-16, Analyzed: 2018-02-16						
Benzene	3.65	0.020	µg/g dry	2.81	< 0.020	130	60-140			
1,2-Dichloroethane	3.66	0.050	µg/g dry	2.83	0.074	127	60-140			
Ethylbenzene	3.39	0.050	µg/g dry	2.81	0.138	116	60-140			
Styrene	3.13	0.050	µg/g dry	2.81	< 0.050	112	60-140			
Toluene	3.86	0.200	µg/g dry	2.81	0.678	113	60-140			
Xylenes (total)	10.2	0.100	µg/g dry	8.42	0.159	119	60-140			
Surrogate: Toluene-d8	*1.34*		*µg/g dry*	1.84		*72*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*1.45*		*µg/g dry*	1.87		*78*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*1.67*		*µg/g dry*	1.87		*89*	*60-140*			

QC Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.

APPENDIX 3: REVISION HISTORY

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8021493
PROJECT	SOL040704.01	**REPORTED**	2018-04-04 16:36

Sample ID	Changed	Change	Analysis	Analyte(s)
8021493-44	2018-02-27	Added	BTEX/VH/VPH Pkg	
8021493-44	2018-02-27	Added	Moisture	
8021493-27	2018-03-02	Added	BTEX/VH/VPH Pkg	
8021493-27	2018-03-02	Added	Moisture	
8021493-47	2018-04-03	Added	Moisture	
8021493-47	2018-04-03	Added	VOC/VH/VPH Pkg	

CARO
ANALYTICAL SERVICES
Caring About Results, Obviously.

CARO.ca 1-888-311-8846

C V6V 2K9
C V1X 5C3
B T5S 1H7

CARO BC COC, Rev 2017-

CHAIN OF CUSTODY RECORD COC# B 60527 PAGE 1 OF

RELINQUISHED BY:	DATE: Feb 20, 18	RECEIVED BY:	DATE: 02/2
AM	TIME: 13h55	OTHER TC	TIME: 1100

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☑
Other* ____
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Show on Report
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: ____ OTHER: ____

PROJECT NUMBER / INFO: SCL040704.01

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

REPORT TO:
COMPANY: Next Environmental
ADDRESS:
CONTACT: Arslaven Mansourpour
TEL/FAX:
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☑ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: amansourpour@
EMAIL 2: jleung@
EMAIL 3: csteele@

COPY REPORT TO ☑
COMPANY:
ADDRESS:
CONTACT: Graham Marshall
TEL/FAX:
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@
EMAIL 2:
EMAIL 3:
PO #:

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: ☐

SAMPLED BY:

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	MATRIX: OTHER WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE YYYY-MM-DD	SAMPLING: TIME HH:MM	COMMENTS: CHLORINATED	COMMENTS: FILTERED	COMMENTS: PRESERVED	COMMENTS: (e.g. flow/volume media ID/notes)	ANALYSES REQUESTED: BTEX ☑ VPH ☑ PHC F1 ☐	VOC ☐ VPH ☐	EPH ☐ PHC F2-F4 ☐	PAH ☐ L/HEPH ☐	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL ☐ Hg ☐	METALS - WATER DISSOLVED ☐ Hg ☐	METALS - SOIL (SALM) ☐ inc. pH ☐	pH ☐ EC ☐ ALK ☐	TSS ☐ VSS ☐ TDS ☐	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ E. coli ☐	ASBESTOS	HOLD	POSSIBLE SAMPLE HAZARD CODE(S)
1	BH102 - 01						2018-02-20	AM																								
2	BH102 - 02																															
3	BH102 - 03												X																			
4	BH102 - 04																															
5	BH102 - 05																															
6	BH103 - 01																															
7	BH103 - 02																															
8	BH103 - 03																															
9	BH103 - 04																															
10	BH103 - 05																															
11	BH103 - 06																															
12	BH104 - 01																															

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply): ____

*** OTHER INSTRUCTIONS:**

If you would like to talk to a real live Scientist about your project requirements, please check here: ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 7.3 ICE: Y ☑ N ☐
COOLER 2 (°C): ____ ICE: Y ☐ N ☐
COOLER 3 (°C): ____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO
ANALYTICAL SERVICES
Caring About Results, Obviously.

CARO.ca **1-888-311-8846**

#110-4011 Viking Way, Richmond, BC V6V 2K9
#102-3677 Highway 97N, Kelowna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7

CARO BC COC, Rev 2017-

CHAIN OF CUSTODY RECORD

COC# B 60528 PAGE 2 OF

RELINQUISHED BY:	DATE: Feb 20/18	RECEIVED BY:	DATE: 02/21
AM	TIME: 13:55	OTHER TC	TIME: 1100

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☑
Other* ____
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Show on Report
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: ____ OTHER: ____

REPORT TO:
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☐ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☐
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:
PO #:

PROJECT NUMBER / INFO: SoL040704.01

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: ☐

SAMPLED BY:

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE YYYY-MM-DD	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)
13	BH104-02						2018-02-20	AM				
14	BH104-03											
15	BH104-04											
16	BH104-05											
17	BH105-01											
18	BH105-02											
19	BH105-03											
20	BH105-04											
21	BH105-05											
22	BH105-06											
23	BH106-01											
24	BH106-02											

ANALYSES REQUESTED:

	BTEX ☑ VPH ☑ PHC F1 ☐	VOC ☐ VPH ☐	EPH ☐ PHC F2-F4 ☐	PAH ☐ L/HEPH ☐	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL Hg ☐	METALS - WATER DISSOLVED Hg ☐	METALS - SOIL (SALM) ☐ inc. pH ☐	pH ☐ EC ☐ ALK ☐	TSS ☐ VSS ☐ TDS ☐	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ E. coli ☐	ASBESTOS	HOLD	POSSIBLE SAMPLE HAZARD CODE(S)
13																			
14																			
15																			
16																			
17																			
18																			
19	X																		
20																			
21																			
22																			
23																			
24																			

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply):

*** OTHER INSTRUCTIONS:**

If you would like to talk to a real live Scientist about your project requirements, please check here: ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 7.3 ICE: Y ☑ N ☐
COOLER 2 (°C): ____ ICE: Y ☐ N ☐
COOLER 3 (°C): ____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO
ANALYTICAL SERVICES
Caring About Results, Obviously.

CARO.ca **1-888-311-8846**

#110-4011 Viking Way, Richmond, BC V6V 2K9
#102-3677 Highway 97N, Kelowna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7

CHAIN OF CUSTODY RECORD

COC# B 60529 PAGE 3 OF

RELINQUISHED BY:	DATE: Feb 2 2018	RECEIVED BY:	DATE: 02 12
AM	TIME: 1345	OTHER TC	TIME: 1100

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☑
Other* ____
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Show on Report
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: ____ OTHER: ____

PROJECT NUMBER / INFO: SOL040704.01

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

REPORT TO:
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☐ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☐
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:
PO #:

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: ☐

SAMPLED BY:

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE YYYY-MM-DD	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)
25	BH106_03						2018-02-2	AM				
26	BH106_04											
27	BH106_05											
28	BH107_01											
29	BH107_02											
30	BH107_03											
31	BH107_04											
32	BH107_05											
33	BH108_01											
34	BH108_02											
35	BH108_03											
36	BH108_04											

ANALYSES REQUESTED:

	BTEX ☑	VPH ☑	PHC F1 ☐	VOC ☐	VPH ☐	EPH ☐	PHC F2-F4 ☐	PAH ☐	L/HEPH ☐	PHENOLS Chlorinated ☐	Non-Chlor. ☐	PCB ☐	GLYCOLS ☐	HAA ☐	PESTICIDES ☐	ACID HERBICIDES ☐	METALS - WATER TOTAL	Hg ☐	METALS - WATER DISSOLVED	Hg ☐	METALS - SOIL (SALM) ☐	inc. pH ☐	pH ☐	EC ☐	ALK ☐	TSS ☐	VSS ☐	TDS ☐	BOD ☐	COD ☐	TOG ☐	MOG ☐	FECAL COLIFORMS ☐	HPC ☐	TOTAL COLIFORMS ☐	*E. coli* ☐	ASBESTOS	HOLD	POSSIBLE SAMPLE HAZARD CODE(S)
25	X																																				
26																																					
27																																					
28																																					
29																																					
30																																					
31																																					
32																																					
33																																					
34																																					
35																																					
36																																					

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply):

*** OTHER INSTRUCTIONS:**

If you would like to talk to a real live Scientist about your project requirements, please check here: ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 7.3 ICE: Y ☑ N ☐
COOLER 2 (°C): ____ ICE: Y ☐ N ☐
COOLER 3 (°C): ____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO
ANALYTICAL SERVICES
Caring About Results, Obviously.

CARO.ca **1-888-311-8846**

#110-4011 Viking Way, Richmond, BC V6V 2K9
#102-3677 Highway 97N, Kelowna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7

CHAIN OF CUSTODY RECORD

COC# B 60530 PAGE 4 OF 5

RELINQUISHED BY:	DATE: Feb 2 18	RECEIVED BY:	DATE: 02/2
AM	TIME: 13h55	OTHER TC	TIME: 1100

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☑
Other* ____
***Contact Lab To Confirm. Surcharge May Apply**

REGULATORY APPLICATION: Show on Report
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: ____ OTHER: ____

PROJECT NUMBER / INFO: SCL 040704.01

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

REPORT TO:
COMPANY: ____
ADDRESS: ____
CONTACT: ____
TEL/FAX: ____
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☐ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: ____
EMAIL 2: ____
EMAIL 3: ____

INVOICE TO: SAME AS REPORT TO ☐
COMPANY: ____
ADDRESS: ____
CONTACT: ____
TEL/FAX: ____
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: ____
EMAIL 2: ____
EMAIL 3: ____
PO #: ____

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: ☐

SAMPLED BY: ____

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	MATRIX: OTHER WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE YYYY-MM-DD	SAMPLING: TIME HH:MM	COMMENTS: CHLORINATED	COMMENTS: FILTERED	COMMENTS: PRESERVED	COMMENTS: (e.g. flow/volume media ID/notes)	BTEX ☐ VPH ☐ PHC F1 ☐	VOC ☐ VPH ☐	EPH ☐ PHC F2-F4 ☐	PAH ☐ L/HEPH ☐	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL Hg ☐	METALS - WATER DISSOLVED Hg ☐	METALS - SOIL (SALM) ☐ Inc. pH ☐	pH ☐ EC ☐ ALK ☐	TSS ☐ VSS ☐ TDS ☐	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ E. coli ☐	ASBESTOS	HOLD	POSSIBLE SAMPLE HAZARD CODE(S)
37	BH108_05						2018-02-2	AM																									
38	BH108_06																															
39	BH109_01																															
40	BH109_02																															
41	BH109_03												X																			
42	BH109_04																															
43	BH109_05																															
44	BH101_38							PM																								
45	BH101_39							PM																								
46	BH101_40																															
47	BH101_41																															
48	BH101_42																															

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply): ____

*** OTHER INSTRUCTIONS:**

If you would like to talk to a real live Scientist about your project requirements, please check here: ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 7.3 ICE: Y ☑ N ☐
COOLER 2 (°C): ____ ICE: Y ☐ N ☐
COOLER 3 (°C): ____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO
ANALYTICAL SERVICES
Caring About Results, Obviously.

CARO.ca **1-888-311-8846**

#110-4011 Viking Way, Richmond, BC V6V 2K9
#102-3677 Highway 97N, Kelowna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7

CARO BC COC, Rev 2017-

CHAIN OF CUSTODY RECORD

COC# B 60531 PAGE 5 OF 5

RELINQUISHED BY:	DATE: Feb 20, 18	RECEIVED BY:	DATE: 02/2
AM	TIME: 13h55	COURIER	TIME: 1100

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☑
Other* ____
***Contact Lab To Confirm. Surcharge May Apply**

REGULATORY APPLICATION: Show on Report
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: ____ OTHER: ____

PROJECT NUMBER / INFO: SOL 040704.01

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

REPORT TO:
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☐ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☐
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1:
EMAIL 2:
EMAIL 3:
PO #:

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: ☐

SAMPLED BY:

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	MATRIX: OTHER WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE YYYY-MM-DD	SAMPLING: TIME HH:MM	COMMENTS: CHLORINATED	COMMENTS: FILTERED	COMMENTS: PRESERVED	COMMENTS: (e.g. flow/volume media ID/notes)	HOLD	POSSIBLE SAMPLE HAZARD CODE(S)
49	BH101-43						2018-02-20	PM					✓	
50	BH101-44						"	"					✓	

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐
VOC ☐ VPH ☐
EPH ☐ PHC F2-F4 ☐
PAH ☐ L/HEPH ☐
PHENOLS Chlorinated ☐ Non-Chlor. ☐
PCB ☐ GLYCOLS ☐ HAA ☐
PESTICIDES ☐ ACID HERBICIDES ☐
METALS - WATER TOTAL Hg ☐
METALS - WATER DISSOLVED Hg ☐
METALS - SOIL (SALM) ☐ inc. pH ☐
pH ☐ EC ☐ ALK ☐
TSS ☐ VSS ☐ TDS ☐
BOD ☐ COD ☐
TOG ☐ MOG ☐
FECAL COLIFORMS ☐ HPC ☐
TOTAL COLIFORMS ☐ *E. coli* ☐
ASBESTOS

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply): ____

*** OTHER INSTRUCTIONS:**

If you would like to talk to a real live Scientist about your project requirements, please check here: ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 7.3 ICE: Y ☑ N ☐
COOLER 2 (°C): ____ ICE: Y ☐ N ☐
COOLER 3 (°C): ____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CERTIFICATE OF ANALYSIS

REPORTED TO	Next Environmental Inc 215 - 2550 Boundary Road Burnaby, BC V5M 3Z3		
ATTENTION	Chris Steele	**WORK ORDER**	8051104
PO NUMBER		**RECEIVED / TEMP**	2018-05-09 17:45 / 22°C
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 15:06
PROJECT INFO			

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at bshaw@caro.ca

Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Client Service Coordinator

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051104
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 15:06

Analyte	Result	RL	Units	Analyzed	Qualifier
BH201-05 (8051104-05) | Matrix: Soil | Sampled: 2018-05-09 10:30					
General Parameters					
Moisture	**8.8**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*133*	*60-140*	%	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*110*	*60-140*	%	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*104*	*60-140*	%	*2018-05-18*	
BH201-08 (8051104-08) | Matrix: Soil | Sampled: 2018-05-09 10:30					
General Parameters					
Moisture	**7.4**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*91*	*60-140*	%	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*80*	*60-140*	%	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*75*	*60-140*	%	*2018-05-18*	
BH201-17 (8051104-17) | Matrix: Soil | Sampled: 2018-05-09 10:30					
General Parameters					
Moisture	**15.2**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051104
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 15:06

Analyte	Result	RL	Units	Analyzed	Qualifier
BH201-17 (8051104-17) | Matrix: Soil | Sampled: 2018-05-09 10:30, Continued					
BCMOE Aggregate Hydrocarbons, Continued					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*99*	*60-140*	%	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*86*	*60-140*	%	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*82*	*60-140*	%	*2018-05-18*	
BH201-22 (8051104-22) | Matrix: Soil | Sampled: 2018-05-09 10:30					
General Parameters					
Moisture	**6.4**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*99*	*60-140*	%	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*87*	*60-140*	%	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*81*	*60-140*	%	*2018-05-18*	
BH201-29 (8051104-29) | Matrix: Soil | Sampled: 2018-05-09 10:30					
General Parameters					
Moisture	**6.5**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051104
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 15:06

Analyte	Result	RL	Units	Analyzed	Qualifier
BH201-29 (8051104-29) | Matrix: Soil | Sampled: 2018-05-09 10:30, Continued					
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*102*	*60-140*	%	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*89*	*60-140*	%	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*83*	*60-140*	%	*2018-05-18*	
BH201-30 (8051104-30) | Matrix: Soil | Sampled: 2018-05-09 10:30					
General Parameters					
Moisture	**5.7**	1.0	% wet	2018-05-18	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-21	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.030	0.020	µg/g dry	2018-05-22	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-22	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-22	
Styrene	< 0.050	0.050	µg/g dry	2018-05-22	
Toluene	< 0.200	0.200	µg/g dry	2018-05-22	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-22	
Surrogate: Toluene-d8	*74*	*60-140*	%	*2018-05-22*	
Surrogate: 4-Bromofluorobenzene	*70*	*60-140*	%	*2018-05-22*	
Surrogate: 1,4-Dichlorobenzene-d4	*70*	*60-140*	%	*2018-05-22*	
BH202-01 (8051104-32) | Matrix: Soil | Sampled: 2018-05-09 14:00					
General Parameters					
Moisture	**12.6**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051104
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 15:06

Analyte	Result	RL	Units	Analyzed	Qualifier
BH202-01 (8051104-32) | Matrix: Soil | Sampled: 2018-05-09 14:00, Continued					
Volatile Organic Compounds (VOC), Continued					
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*98*	*60-140*	%	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*58*	*60-140*	%	*2018-05-18*	S02
Surrogate: 1,4-Dichlorobenzene-d4	*54*	*60-140*	%	*2018-05-18*	S02
BH202-20 (8051104-51) | Matrix: Soil | Sampled: 2018-05-09 14:00					
General Parameters					
Moisture	**8.6**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*95*	*60-140*	%	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*69*	*60-140*	%	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*65*	*60-140*	%	*2018-05-18*	
BH202-30 (8051104-61) | Matrix: Soil | Sampled: 2018-05-09 14:00					
General Parameters					
Moisture	**5.4**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051104
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 15:06

Analyte	Result	RL	Units	Analyzed	Qualifier
BH202-30 (8051104-61) | Matrix: Soil | Sampled: 2018-05-09 14:00, Continued					
Volatile Organic Compounds (VOC), Continued					
Surrogate: Toluene-d8	*92*	*60-140*	*%*	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*65*	*60-140*	*%*	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*60*	*60-140*	*%*	*2018-05-18*	

Sample Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051104
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 15:06

Analysis Description	Method Ref.	Technique	Location
BTEX in Soil	EPA 5035A/5030B / EPA 8260D	Methanol Extract, Purge&Trap / GC-MSD (SIM)	Richmond
Moisture in Soil	ASTM D2974-87*	Gravimetry (Dried at 105C)	N/A
VH in Soil	EPA 5035A/5030B / BCMOE VHs	Methanol Extract, Purge&Trap / Purge&Trap or Headspace, Gas Chromatography (GC-FID)	Richmond
VPHs in Soil	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)	N/A

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
% wet	Percent (as received basis)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
mg/kg dry	Milligrams per kilogram (dry weight basis)
µg/g dry	Micrograms per gram (dry weight basis)
ASTM	ASTM International Test Methods
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051104
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 15:06

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
BCMOE Aggregate Hydrocarbons, Batch B8E1307										
Blank (B8E1307-BLK1)				Prepared: 2018-05-16, Analyzed: 2018-05-17						
VHs (6-10)	< 20	20	µg/g wet							
LCS (B8E1307-BS2)				Prepared: 2018-05-16, Analyzed: 2018-05-17						
VHs (6-10)	330	20	µg/g wet	412		79	70-130			
Duplicate (B8E1307-DUP1)		**Source: 8051104-05**		Prepared: 2018-05-09, Analyzed: 2018-05-17						
VHs (6-10)	< 20	20	µg/g dry		< 20				27	
BCMOE Aggregate Hydrocarbons, Batch B8E1604										
Blank (B8E1604-BLK1)				Prepared: 2018-05-19, Analyzed: 2018-05-21						
VHs (6-10)	< 20	20	µg/g wet							
LCS (B8E1604-BS2)				Prepared: 2018-05-19, Analyzed: 2018-05-21						
VHs (6-10)	310	20	µg/g wet	410		76	70-130			
Volatile Organic Compounds (VOC), Batch B8E1307										
Blank (B8E1307-BLK1)				Prepared: 2018-05-16, Analyzed: 2018-05-18						
Benzene	< 0.006	0.006	µg/g wet							
Ethylbenzene	< 0.010	0.010	µg/g wet							
Methyl tert-butyl ether	< 0.008	0.008	µg/g wet							
Styrene	< 0.010	0.010	µg/g wet							
Toluene	< 0.040	0.040	µg/g wet							
Xylenes (total)	< 0.020	0.020	µg/g wet							
Surrogate: Toluene-d8	*4.25*		*µg/g wet*	4.20		*101*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.47*		*µg/g wet*	3.99		*87*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.29*		*µg/g wet*	4.00		*82*	*60-140*			
LCS (B8E1307-BS1)				Prepared: 2018-05-16, Analyzed: 2018-05-18						
Benzene	1.87	0.060	µg/g wet	2.00		93	73-131			
Ethylbenzene	1.53	0.100	µg/g wet	2.00		77	71-127			
Methyl tert-butyl ether	0.808	0.080	µg/g wet	2.00		40	60-131			SPK1
Styrene	1.38	0.100	µg/g wet	2.00		69	65-126			
Toluene	1.62	0.400	µg/g wet	2.00		81	74-136			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051104
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 15:06

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8E1307, Continued										
LCS (B8E1307-BS1), Continued				Prepared: 2018-05-16, Analyzed: 2018-05-18						
Xylenes (total)	4.76	0.200	µg/g wet	6.00		79	71-125			
Surrogate: Toluene-d8	*3.42*		*µg/g wet*	4.20		*81*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.05*		*µg/g wet*	3.99		*76*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*2.76*		*µg/g wet*	4.00		*69*	*60-140*			
Duplicate (B8E1307-DUP1)		**Source: 8051104-05**		Prepared: 2018-05-09, Analyzed: 2018-05-18						
Benzene	< 0.006	0.020	µg/g dry		< 0.020				50	
Ethylbenzene	< 0.010	0.050	µg/g dry		< 0.050				50	
Methyl tert-butyl ether	< 0.008	0.040	µg/g dry		< 0.040				50	
Styrene	< 0.010	0.050	µg/g dry		< 0.050				50	
Toluene	< 0.040	0.200	µg/g dry		< 0.200				50	
Xylenes (total)	< 0.020	0.100	µg/g dry		< 0.100				50	
Surrogate: Toluene-d8	*6.36*		*µg/g dry*	4.55		*140*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*4.86*		*µg/g dry*	4.33		*112*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*4.60*		*µg/g dry*	4.33		*106*	*60-140*			
Matrix Spike (B8E1307-MS1)		**Source: 8051104-05**		Prepared: 2018-05-09, Analyzed: 2018-05-18						
Benzene	0.097	0.006	µg/g dry	0.0650	< 0.020	150	60-140			MS1
Ethylbenzene	0.076	0.010	µg/g dry	0.0650	< 0.050	116	60-140			
Methyl tert-butyl ether	0.043	0.008	µg/g dry	0.0650	< 0.040	65	60-140			
Styrene	0.061	0.010	µg/g dry	0.0650	< 0.050	94	60-140			
Toluene	0.117	0.040	µg/g dry	0.0650	< 0.200	119	60-140			
Xylenes (total)	0.226	0.020	µg/g dry	0.195	< 0.100	116	60-140			
Surrogate: Toluene-d8	*4.59*		*µg/g dry*	4.55		*101*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.86*		*µg/g dry*	4.33		*89*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.57*		*µg/g dry*	4.33		*82*	*60-140*			
Volatile Organic Compounds (VOC), Batch B8E1604										
Blank (B8E1604-BLK1)				Prepared: 2018-05-19, Analyzed: 2018-05-22						
Benzene	< 0.030	0.030	µg/g wet							
Ethylbenzene	< 0.050	0.050	µg/g wet							
Methyl tert-butyl ether	< 0.040	0.040	µg/g wet							
Styrene	< 0.050	0.050	µg/g wet							
Toluene	< 0.200	0.200	µg/g wet							
Xylenes (total)	< 0.100	0.100	µg/g wet							
Surrogate: Toluene-d8	*3.51*		*µg/g wet*	4.20		*83*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.15*		*µg/g wet*	3.99		*79*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.15*		*µg/g wet*	4.00		*79*	*60-140*			
LCS (B8E1604-BS1)				Prepared: 2018-05-19, Analyzed: 2018-05-22						
Benzene	1.63	0.030	µg/g wet	2.00		82	73-131			
Ethylbenzene	1.54	0.050	µg/g wet	2.00		77	71-127			
Methyl tert-butyl ether	1.62	0.040	µg/g wet	2.00		81	60-131			
Styrene	1.42	0.050	µg/g wet	2.00		71	65-126			
Toluene	1.75	0.200	µg/g wet	2.00		87	74-136			
Xylenes (total)	4.69	0.100	µg/g wet	6.00		78	71-125			
Surrogate: Toluene-d8	*2.92*		*µg/g wet*	4.20		*69*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.51*		*µg/g wet*	3.99		*88*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.87*		*µg/g wet*	4.00		*97*	*60-140*			
Duplicate (B8E1604-DUP1)		**Source: 8051104-30**		Prepared: 2018-05-10, Analyzed: 2018-05-22						
Benzene	< 0.030	0.020	µg/g dry		< 0.030				50	
Ethylbenzene	< 0.050	0.050	µg/g dry		< 0.050				50	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry		< 0.040				50	

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051104
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 15:06

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8E1604, Continued										
Duplicate (B8E1604-DUP1), Continued		**Source: 8051104-30**		Prepared: 2018-05-10, Analyzed: 2018-05-22						
Styrene	< 0.050	0.050	µg/g dry		< 0.050				50	
Toluene	< 0.200	0.200	µg/g dry		< 0.200				50	
Xylenes (total)	< 0.100	0.100	µg/g dry		< 0.100				50	
Surrogate: Toluene-d8	*3.04*		*µg/g dry*	3.89		*78*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*2.82*		*µg/g dry*	3.70		*76*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*2.88*		*µg/g dry*	3.71		*78*	*60-140*			
Matrix Spike (B8E1604-MS1)		**Source: 8051104-30**		Prepared: 2018-05-10, Analyzed: 2018-05-22						
Benzene	3.74	0.030	µg/g dry	3.71	< 0.030	101	60-140			
Ethylbenzene	3.94	0.050	µg/g dry	3.71	< 0.050	106	60-140			
Methyl tert-butyl ether	3.44	0.040	µg/g dry	3.71	< 0.040	93	60-140			
Styrene	3.81	0.050	µg/g dry	3.71	< 0.050	103	60-140			
Toluene	3.91	0.200	µg/g dry	3.71	< 0.200	105	60-140			
Xylenes (total)	12.0	0.100	µg/g dry	11.1	< 0.100	108	60-140			
Surrogate: Toluene-d8	*3.04*		*µg/g dry*	3.89		*78*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.74*		*µg/g dry*	3.70		*101*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.97*		*µg/g dry*	3.71		*107*	*60-140*			

QC Qualifiers:

MS1	The matrix spike recovery was outside of control limits due to a matrix effect and/or interference.
S02	Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
SPK1	The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

☒ 110-4011 Viking Way, Richmond, BC V6V 2K9
Tel: (604) 279-1499 Fax: (604) 279-1599

☐ 102-3677 Highway 97N, Kelowna, BC V1X 5C3
Tel: (250) 765-9646 Fax: (250) 765-3893

☐ 17225 109 Avenue NW, Edmonton, AB T5S 1H7
Tel: (780) 489-9100 Fax: (780) 489-9700

CARO BC COC, Rev 201

CHAIN OF CUSTODY RECORD

COC# _____ PAGE OF

RELINQUISHED BY:	DATE: 09 may 18	RECEIVED BY:	DATE: 5/9
Judah Chen	TIME: 17 45	BAV WI	TIME: 17:5

PROJECT: SOL040704.02

PROJECT INFO:

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215, Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 3 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

SAMPLED BY: JC

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD-MMM-YY	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)
1	BH201-01			X		4	09 may 18	10:30				
2	BH201-02			X		4						
3	BH201-03			X		4						
4	BH201-04			X		4						
5	BH201-05			X		4						
6	BH201-06			X		4						
7	BH201-07			X		4						
8	BH201-08			X		4						
9	BH201-09			X		4						
10	BH201-10			X		4						
11	BH201-11			X		4						
12	BH201-12			X		4						

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐ | VOC ☐ VPH ☐ | EPH ☐ PHC F2-F4 ☐ | PAH ☐ L/HEPH ☐ | PHENOLS Chlorinated ☐ Non-Chlor. ☐ | PCB ☐ GLYCOLS ☐ HAA ☐ | PESTICIDES ☐ ACID HERBICIDES ☐ | METALS - WATER TOTAL Hg ☐ | METALS - WATER DISSOLVED Hg ☐ | METALS - SOIL (SALM) ☐ inc. pH ☐ | pH ☐ EC ☐ ALK ☐ | TSS ☐ VSS ☐ TDS ☐ | BOD ☐ COD ☐ | TOG ☐ MOG ☐ | FECAL COLIFORMS ☐ HPC ☐ | TOTAL COLIFORMS ☐ *E. coli* ☐ | ASBESTOS | HOLD

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply): _____
* OTHER INSTRUCTIONS:

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 21.0 ICE: Y ☐ N ☑
COOLER 2 (°C): 22.0 ICE: Y ☐ N ☑
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO ANALYTICAL SERVICES
Caring About Results... Obviously

☒ 110-4011 Viking Way, Richmond, BC V6V 2K9
Tel: (604) 279-1499 Fax: (604) 279-1599

☐ 102-3677 Highway 97N, Kelowna, BC V1X 5C3
Tel: (250) 765-9646 Fax: (250) 765-3893

☐ 17225 109 Avenue NW, Edmonton, AB T5S 1H7
Tel: (780) 489-9100 Fax: (780) 489-9700

CHAIN OF CUSTODY RECORD

COC# _____ PAGE OF

RELINQUISHED BY:	DATE: 09 may 18	RECEIVED BY:	DATE:
Judah Chen	TIME: 17 45		TIME:

PROJECT: SOL040704.02

PROJECT INFO:

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215, Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 5 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

SAMPLED BY: JC

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD-MMM-YY	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)
13	BH201-13			x		4	09 may 18	10:30				
14	BH201-14			x		4						
15	BH201-15			x		4						
16	BH201-16			x		4						
17	BH201-17			x		4						
18	BH201-18			x		4						
19	BH201-19			x		4						
20	BH201-20			x		4						
21	BH201-21			x		4						
22	BH201-22			x		4						
23	BH201-23			x		4						
24	BH201-24			x		4						

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐ | VOC ☐ VPH ☐ | EPH ☐ PHC F2-F4 ☐ | PAH ☐ L/HEPH ☐ | PHENOLS Chlorinated ☐ Non-Chlor. ☐ | PCB ☐ GLYCOLS ☐ HAA ☐ | PESTICIDES ☐ ACID HERBICIDES ☐ | METALS - WATER TOTAL Hg ☐ | METALS - WATER DISSOLVED Hg ☐ | METALS - SOIL (SALM) ☐ inc. pH ☐ | pH ☐ EC ☐ ALK ☐ | TSS ☐ VSS ☐ TDS ☐ | BOD ☐ COD ☐ | TOG ☐ MOG ☐ | FECAL COLIFORMS ☐ HPC ☐ | TOTAL COLIFORMS ☐ *E. coli* ☐ | ASBESTOS | HOLD

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply): _____
*** OTHER INSTRUCTIONS:**

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): _____ ICE: Y ☐ N ☐
COOLER 2 (°C): _____ ICE: Y ☐ N ☐
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO ANALYTICAL SERVICES
Caring About Results... Obviously

☒ 110-4011 Viking Way, Richmond, BC V6V 2K9
Tel: (604) 279-1499 Fax: (604) 279-1599

☐ 102-3677 Highway 97N, Kelowna, BC V1X 5C3
Tel: (250) 765-9646 Fax: (250) 765-3893

☐ 17225 109 Avenue NW, Edmonton, AB T5S 1H7
Tel: (780) 489-9100 Fax: (780) 489-9700

CHAIN OF CUSTODY RECORD

COC# _____ PAGE OF

RELINQUISHED BY:	DATE: 09 may 18	RECEIVED BY:	DATE:
	TIME: 17 45		TIME:

PROJECT: SOL040704.02

PROJECT INFO:

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215, Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 3 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION:
Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

SAMPLED BY: JC

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	MATRIX: OTHER WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE DD-MMM-YY	SAMPLING: TIME HH:MM	COMMENTS: CHLORINATED	COMMENTS: FILTERED	COMMENTS: PRESERVED	COMMENTS: (e.g. flow/volume media ID/notes)	ANALYSES REQUESTED: BTEX ☐ VPH ☐ PHC F1 ☐	VOC ☐ VPH ☐	EPH ☐ PHC F2-F4 ☐	PAH ☐ L/HEPH ☐	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL Hg ☐	METALS - WATER DISSOLVED Hg ☐	METALS - SOIL (SALM) ☐ inc. pH ☐	pH ☐ EC ☐ ALK ☐	TSS ☐ VSS ☐ TDS ☐	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ E. coli ☐	ASBESTOS	HOLD
25	BH201-25			X		4	09 may 18	10:20																								
26	BH201-26			X		4																										
27	BH201-27			X		4																										
28	BH201-28			X		4																										
29	BH201-29			X		4																										
30	BH201-30			X		4																										
31	BH201-31			X		4																										
32	BH202-01			X		4		14:00																								
33	BH202-02			X		4																										
34	BH202-03			X		4																										
35	BH202-04			X		4																										
36	BH202-05			X		4																										

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply): _____
*** OTHER INSTRUCTIONS:**

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): _____ ICE: Y ☐ N ☐
COOLER 2 (°C): _____ ICE: Y ☐ N ☐
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO ANALYTICAL SERVICES
Caring About Results... Obviously

☒ 110-4011 Viking Way, Richmond, BC V6V 2K9
Tel: (604) 279-1499 Fax: (604) 279-1599

☐ 102-3677 Highway 97N, Kelowna, BC V1X 5C3
Tel: (250) 765-9646 Fax: (250) 765-3893

☐ 17225 109 Avenue NW, Edmonton, AB T5S 1H7
Tel: (780) 489-9100 Fax: (780) 489-9700

CARO BC COC, Rev 201

CHAIN OF CUSTODY RECORD

COC# _____ PAGE OF

RELINQUISHED BY:	DATE: 09 may 18	RECEIVED BY:	DATE:
Judah Chen	TIME: 1745		TIME:

PROJECT: SOL040704.02

PROJECT INFO:

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215, Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 3 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

SAMPLED BY: JC

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	MATRIX: OTHER WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE DD-MMM-YY	SAMPLING: TIME HH:MM	COMMENTS: CHLORINATED	COMMENTS: FILTERED	COMMENTS: PRESERVED	COMMENTS: (e.g. flow/volume media ID/notes)
37	BH202-06			X		4	09may18	14:00				
38	BH202-07			X		4						
39	BH202-08			X		4						
40	BH202-09			X		4						
41	BH202-10			X		4						
42	BH202-11			X		4						
43	BH202-12			X		4						
44	BH202-13			X		4						
45	BH202-14			X		4						
46	BH202-15			X		4						
47	BH202-16			X		4						
48	BH202-17			X		4						

ANALYSES REQUESTED:

BTEX ☐	VPH ☐	PHC F1 ☐	VOC ☐	VPH ☐	EPH ☐	PHC F2-F4 ☐	PAH ☐	L/HEPH ☐	PHENOLS Chlorinated ☐	Non-Chlor. ☐	PCB ☐	GLYCOLS ☐	HAA ☐	PESTICIDES ☐	ACID HERBICIDES ☐	METALS - WATER TOTAL	Hg ☐	METALS - WATER DISSOLVED	Hg ☐	METALS - SOIL (SALM) ☐	inc. pH ☐	pH ☐	EC ☐	ALK ☐	TSS ☐	VSS ☐	TDS ☐	BOD ☐	COD ☐	TOG ☐	MOG ☐	FECAL COLIFORMS ☐	HPC ☐	TOTAL COLIFORMS ☐	*E. coli* ☐	ASBESTOS	HOLD

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply): _____
*** OTHER INSTRUCTIONS:**

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): _____ ICE: Y ☐ N ☐
COOLER 2 (°C): _____ ICE: Y ☐ N ☐
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO ANALYTICAL SERVICES
Caring About Results... Obviously

☒ 110-4011 Viking Way, Richmond, BC V6V 2K9 Tel: (604) 279-1499 Fax: (604) 279-1599
☐ 102-3677 Highway 97N, Kelowna, BC V1X 5C3 Tel: (250) 765-9646 Fax: (250) 765-3893
☐ 17225 109 Avenue NW, Edmonton, AB T5S 1H7 Tel: (780) 489-9100 Fax: (780) 489-9700

CARO BC COC, Rev 201

CHAIN OF CUSTODY RECORD

COC#: PAGE OF

RELINQUISHED BY:	DATE: 09 May 18	RECEIVED BY:	DATE:
Judah Chen	TIME: 17:45		TIME:

PROJECT: SOL040704.02

PROJECT INFO:

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215
Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 3 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

SAMPLED BY: JC

ANALYSES REQUESTED: BTEX ☐ VPH ☐ PHC F1 ☐; VOC ☐ VPH ☐; EPH ☐ PHC F2-F4 ☐; PAH ☐ L/HEPH ☐; PHENOLS Chlorinated ☐ Non-Chlor. ☐; PCB ☐ GLYCOLS ☐ HAA ☐; PESTICIDES ☐ ACID HERBICIDES ☐; METALS - WATER TOTAL ☐ Hg; METALS - WATER DISSOLVED ☐ Hg; METALS - SOIL (SALM) ☐ inc. pH ☐; pH ☐ EC ☐ ALK ☐; TSS ☐ VSS ☐ TDS ☐; BOD ☐ COD ☐; TOG ☐ MOG ☐; FECAL COLIFORMS ☐ HPC ☐; TOTAL COLIFORMS ☐ E. coli ☐; ASBESTOS; HOLD

	CLIENT SAMPLE ID	DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	DATE DD-MMM-YY	TIME HH:MM	CHLORINATED	FILTERED	PRESERVED	COMMENTS (e.g. flow/volume media ID/notes)
49	BH202-18			X		4	09may18	14:00				
50	BH202-19			X		4	↓	↓				
51	BH202-20			X		4						
52	BH202-21			X		4						
53	BH202-22			X		4						
54	BH202-23			X		4						
55	BH202-24			X		4						
56	BH202-25			X		4						
57	BH202-26			X		4						
58	BH202-27			X		4						
59	BH202-28			X		4						
60	BH202-29			X		4	↓	↓				

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply):

*** OTHER INSTRUCTIONS:**

PAYMENT: CHEQUE ☐ CREDIT ☐ DEBIT ☐ CASH ☐ INVOICE ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): ICE: Y ☐ N ☐
COOLER 2 (°C): ICE: Y ☐ N ☐
COOLER 3 (°C): ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO ANALYTICAL SERVICES
Caring About Results... Obviously

☒ 110-4011 Viking Way, Richmond, BC V6V 2K9
Tel: (604) 279-1499 Fax: (604) 279-1599

☐ 102-3677 Highway 97N, Kelowna, BC V1X 5C3
Tel: (250) 765-9646 Fax: (250) 765-3893

☐ 17225 109 Avenue NW, Edmonton, AB T5S 1H7
Tel: (780) 489-9100 Fax: (780) 489-9700

CHAIN OF CUSTODY RECORD

COC# _____ PAGE OF

RELINQUISHED BY:	DATE: 09 may 18	RECEIVED BY:	DATE:
Judah Chen	TIME: 1445		TIME:

PROJECT: SOL040704.02

PROJECT INFO:

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215
Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 5 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

SAMPLED BY: JC

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD-MMM-YY	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)
61	BH202-30			X		4	09may18	14:00				
62	BH202-31			X		4	↓	4				

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐ | VOC ☐ VPH ☐ | EPH ☐ PHC F2-F4 ☐ | PAH ☐ L/HEPH ☐ | PHENOLS Chlorinated ☐ Non-Chlor. ☐ | PCB ☐ GLYCOLS ☐ HAA ☐ | PESTICIDES ☐ ACID HERBICIDES ☐ | METALS - WATER TOTAL ☐ Hg ☐ | METALS - WATER DISSOLVED ☐ Hg ☐ | METALS - SOIL (SALM) ☐ inc. pH ☐ | pH ☐ EC ☐ ALK ☐ | TSS ☐ VSS ☐ TDS ☐ | BOD ☐ COD ☐ | TOG ☐ MOG ☐ | FECAL COLIFORMS ☐ HPC ☐ | TOTAL COLIFORMS ☐ *E. coli* ☐ | ASBESTOS | HOLD

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply): _____
* OTHER INSTRUCTIONS:

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): _____ ICE: Y ☐ N ☐
COOLER 2 (°C): _____ ICE: Y ☐ N ☐
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CERTIFICATE OF ANALYSIS

REPORTED TO	Next Environmental Inc 215 - 2550 Boundary Road Burnaby, BC V5M 3Z3		
ATTENTION	Chris Steele	**WORK ORDER**	8051105
PO NUMBER		**RECEIVED / TEMP**	2018-05-10 16:40 / 29°C
PROJECT	SOL040704.02	**REPORTED**	2018-05-18 15:11
PROJECT INFO			

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at bshaw@caro.ca

Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Client Service Coordinator

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051105
PROJECT	SOL040704.02	**REPORTED**	2018-05-18 15:11

Analyte	Result	RL	Units	Analyzed	Qualifier
BH203-03 (8051105-03) | Matrix: Soil | Sampled: 2018-05-10 10:30					
General Parameters					
Moisture	**4.4**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*106*	*60-140*	%	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*92*	*60-140*	%	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*87*	*60-140*	%	*2018-05-18*	
BH203-13 (8051105-13) | Matrix: Soil | Sampled: 2018-05-10 10:30					
General Parameters					
Moisture	**5.5**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*99*	*60-140*	%	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*86*	*60-140*	%	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*80*	*60-140*	%	*2018-05-18*	
BH203-63 (8051105-17) | Matrix: Soil | Sampled: 2018-05-10 10:30					
General Parameters					
Moisture	**5.4**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051105
PROJECT	SOL040704.02	**REPORTED**	2018-05-18 15:11

Analyte	Result	RL	Units	Analyzed	Qualifier
BH203-63 (8051105-17) | Matrix: Soil | Sampled: 2018-05-10 10:30, Continued					
BCMOE Aggregate Hydrocarbons, Continued					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*106*	*60-140*	*%*	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*93*	*60-140*	*%*	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*85*	*60-140*	*%*	*2018-05-18*	

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051105
PROJECT	SOL040704.02	**REPORTED**	2018-05-18 15:11

Analysis Description	Method Ref.	Technique	Location
BTEX in Soil	EPA 5035A/5030B / EPA 8260D	Methanol Extract, Purge&Trap / GC-MSD (SIM)	Richmond
Moisture in Soil	ASTM D2974-87*	Gravimetry (Dried at 105C)	N/A
VH in Soil	EPA 5035A/5030B / BCMOE VHs	Methanol Extract, Purge&Trap / Purge&Trap or Headspace, Gas Chromatography (GC-FID)	Richmond
VPHs in Soil	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)	N/A

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
% wet	Percent (as received basis)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
mg/kg dry	Milligrams per kilogram (dry weight basis)
µg/g dry	Micrograms per gram (dry weight basis)
ASTM	ASTM International Test Methods
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051105
PROJECT	SOL040704.02	**REPORTED**	2018-05-18 15:11

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
BCMOE Aggregate Hydrocarbons, Batch B8E1307										
Blank (B8E1307-BLK1)				Prepared: 2018-05-16, Analyzed: 2018-05-17						
VHs (6-10)	< 20	20	µg/g wet							
LCS (B8E1307-BS2)				Prepared: 2018-05-16, Analyzed: 2018-05-17						
VHs (6-10)	330	20	µg/g wet	412		79	70-130			
Volatile Organic Compounds (VOC), Batch B8E1307										
Blank (B8E1307-BLK1)				Prepared: 2018-05-16, Analyzed: 2018-05-18						
Benzene	< 0.006	0.006	µg/g wet							
Ethylbenzene	< 0.010	0.010	µg/g wet							
Methyl tert-butyl ether	< 0.008	0.008	µg/g wet							
Styrene	< 0.010	0.010	µg/g wet							
Toluene	< 0.040	0.040	µg/g wet							
Xylenes (total)	< 0.020	0.020	µg/g wet							
Surrogate: Toluene-d8	*4.25*		*µg/g wet*	4.20		*101*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.47*		*µg/g wet*	3.99		*87*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.29*		*µg/g wet*	4.00		*82*	*60-140*			
LCS (B8E1307-BS1)				Prepared: 2018-05-16, Analyzed: 2018-05-18						
Benzene	1.87	0.060	µg/g wet	2.00		93	73-131			
Ethylbenzene	1.53	0.100	µg/g wet	2.00		77	71-127			
Methyl tert-butyl ether	0.808	0.080	µg/g wet	2.00		40	60-131			SPK1
Styrene	1.38	0.100	µg/g wet	2.00		69	65-126			
Toluene	1.62	0.400	µg/g wet	2.00		81	74-136			
Xylenes (total)	4.76	0.200	µg/g wet	6.00		79	71-125			
Surrogate: Toluene-d8	*3.42*		*µg/g wet*	4.20		*81*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.05*		*µg/g wet*	3.99		*76*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*2.76*		*µg/g wet*	4.00		*69*	*60-140*			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051105
PROJECT	SOL040704.02	**REPORTED**	2018-05-18 15:11

QC Qualifiers:

S02	Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
SPK1	The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

110-4011 Viking Way, Richmond, BC V6V 2K9
Tel: (604) 279-1499 Fax: (604) 279-1599

102-3677 Highway 97N, Kelowna, BC V1X 5C3
Tel: (250) 765-9646 Fax: (250) 765-3893

17225 109 Avenue NW, Edmonton, AB T5S 1H7
Tel: (780) 489-9100 Fax: (780) 489-9700

CARO BC COC, Rev 201

CHAIN OF CUSTODY RECORD

COC# YL PAGE OF

RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
Judah Chen	10 may 18	YL WL	May
	TIME: 1638		TIME: 164

PROJECT: SOL040704.02

PROJECT INFO:

REPORT TO:

COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215
Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒

COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 3 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

SAMPLED BY: JC

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	MATRIX: OTHER WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE DD-MMM-YY	SAMPLING: TIME HH:MM	COMMENTS: CHLORINATED	COMMENTS: FILTERED	COMMENTS: PRESERVED	COMMENTS: (e.g. flow/volume media ID/notes)
1	BH203-01			X		4	10 may 18	10:30				
2	BH203-02			X		4						
3	BH203-03			X		4						
4	BH203-04			X		4						
5	BH203-05			X		4						
6	BH203-06			X		4						
7	BH203-07			X		4						
8	BH203-08			X		4						
9	BH203-09			X		4						
10	BH203-10			X		4						
11	BH203-11			X		4						
12	BH203-12			X		4						

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐
VOC ☐ VPH ☐
EPH ☐ PHC F2-F4 ☐
PAH ☐ L/HEPH ☐
PHENOLS Chlorinated ☐ Non-Chlor. ☐
PCB ☐ GLYCOLS ☐ HAA ☐
PESTICIDES ☐ ACID HERBICIDES ☐
METALS - WATER TOTAL Hg ☐
METALS - WATER DISSOLVED Hg ☐
METALS - SOIL (SALM) ☐ inc. pH ☐
pH ☐ EC ☐ ALK ☐
TSS ☐ VSS ☐ TDS ☐
BOD ☐ COD ☐
TOG ☐ MOG ☐
FECAL COLIFORMS ☐ HPC ☐
TOTAL COLIFORMS ☐ *E. coli* ☐
ASBESTOS
HOLD

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply):

*** OTHER INSTRUCTIONS:**

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 29 ICE: Y ☐ N ☑
COOLER 2 (°C): ICE: Y ☐ N ☐
COOLER 3 (°C): ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO ANALYTICAL SERVICES
Caring About Results... Obviously

☒ 110-4011 Viking Way, Richmond, BC V6V 2K9
Tel: (604) 279-1499 Fax: (604) 279-1599

☐ 102-3677 Highway 97N, Kelowna, BC V1X 5C3
Tel: (250) 765-9646 Fax: (250) 765-3893

☐ 17225 109 Avenue NW, Edmonton, AB T5S 1H7
Tel: (780) 489-9100 Fax: (780) 489-9700

CHAIN OF CUSTODY RECORD

COC# _____ PAGE OF

RELINQUISHED BY:	DATE: 10 May 18	RECEIVED BY:	DATE: May
Judah Chen	TIME: 16:38	YL MI	TIME: 164

PROJECT: SOL040704.02

PROJECT INFO:

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 3 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION:
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐
Regs on Report? ☐

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215
Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

SAMPLED BY: JC

ANALYSES REQUESTED:

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	MATRIX: OTHER WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE (DD-MMM-YY)	SAMPLING: TIME (HH:MM)	COMMENTS: CHLORINATED	COMMENTS: FILTERED	COMMENTS: PRESERVED	COMMENTS: (e.g. flow/volume media ID/notes)	BTEX ☐ VPH ☐ PHC F1 ☐	VOC ☐ VPH ☐	EPH ☐ PHC F2-F4 ☐	PAH ☐ L/HEPH ☐	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL Hg ☐	METALS - WATER DISSOLVED Hg ☐	METALS - SOIL (SALM) ☐ inc. pH ☐	pH ☐ EC ☐ ALK ☐	TSS ☐ VSS ☐ TDS ☐	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ E. coli ☐	ASBESTOS	HOLD
13	BH203-13			X			10 May 18	10:30																							
14	BH203-14			X			↓	↓																							
15	BH203-15			X																											
16	BH203-16			X																											

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply): _____
* OTHER INSTRUCTIONS:

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 29 ICE: Y ☐ N ☑
COOLER 2 (°C): _____ ICE: Y ☐ N ☐
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CERTIFICATE OF ANALYSIS

REPORTED TO	Next Environmental Inc 215 - 2550 Boundary Road Burnaby, BC V5M 3Z3		
ATTENTION	Chris Steele	**WORK ORDER**	8051243
PO NUMBER		**RECEIVED / TEMP**	2018-05-11 16:07 / 28°C
PROJECT	SOL040704.02	**REPORTED**	2018-05-18 15:17
PROJECT INFO			

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at bshaw@caro.ca

Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Client Service Coordinator

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051243
PROJECT	SOL040704.02	**REPORTED**	2018-05-18 15:17

Analyte	Result	RL	Units	Analyzed	Qualifier
BH204-10 (8051243-10) | Matrix: Soil | Sampled: 2018-05-11 10:30					
General Parameters					
Moisture	**6.1**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*92*	*60-140*	%	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*81*	*60-140*	%	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*74*	*60-140*	%	*2018-05-18*	
BH204-28 (8051243-28) | Matrix: Soil | Sampled: 2018-05-11 10:30					
General Parameters					
Moisture	**7.1**	1.0	% wet	2018-05-17	
BCMOE Aggregate Hydrocarbons					
VHs (6-10)	< 20	20	µg/g dry	2018-05-17	
VPHs	< 20	20	mg/kg dry	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.020	0.020	µg/g dry	2018-05-18	
Ethylbenzene	< 0.050	0.050	µg/g dry	2018-05-18	
Methyl tert-butyl ether	< 0.040	0.040	µg/g dry	2018-05-18	
Styrene	< 0.050	0.050	µg/g dry	2018-05-18	
Toluene	< 0.200	0.200	µg/g dry	2018-05-18	
Xylenes (total)	< 0.100	0.100	µg/g dry	2018-05-18	
Surrogate: Toluene-d8	*104*	*60-140*	%	*2018-05-18*	
Surrogate: 4-Bromofluorobenzene	*92*	*60-140*	%	*2018-05-18*	
Surrogate: 1,4-Dichlorobenzene-d4	*85*	*60-140*	%	*2018-05-18*	

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051243
PROJECT	SOL040704.02	**REPORTED**	2018-05-18 15:17

Analysis Description	Method Ref.	Technique	Location
BTEX in Soil	EPA 5035A/5030B / EPA 8260D	Methanol Extract, Purge&Trap / GC-MSD (SIM)	Richmond
Moisture in Soil	ASTM D2974-87*	Gravimetry (Dried at 105C)	N/A
VH in Soil	EPA 5035A/5030B / BCMOE VHs	Methanol Extract, Purge&Trap / Purge&Trap or Headspace, Gas Chromatography (GC-FID)	Richmond
VPHs in Soil	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)	N/A

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
% wet	Percent (as received basis)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
mg/kg dry	Milligrams per kilogram (dry weight basis)
µg/g dry	Micrograms per gram (dry weight basis)
ASTM	ASTM International Test Methods
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051243
PROJECT	SOL040704.02	**REPORTED**	2018-05-18 15:17

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
BCMOE Aggregate Hydrocarbons, Batch B8E1307										
Blank (B8E1307-BLK1)				Prepared: 2018-05-16, Analyzed: 2018-05-17						
VHs (6-10)	< 20	20	µg/g wet							
LCS (B8E1307-BS2)				Prepared: 2018-05-16, Analyzed: 2018-05-17						
VHs (6-10)	330	20	µg/g wet	412		79	70-130			
Volatile Organic Compounds (VOC), Batch B8E1307										
Blank (B8E1307-BLK1)				Prepared: 2018-05-16, Analyzed: 2018-05-18						
Benzene	< 0.006	0.006	µg/g wet							
Ethylbenzene	< 0.010	0.010	µg/g wet							
Methyl tert-butyl ether	< 0.008	0.008	µg/g wet							
Styrene	< 0.010	0.010	µg/g wet							
Toluene	< 0.040	0.040	µg/g wet							
Xylenes (total)	< 0.020	0.020	µg/g wet							
Surrogate: Toluene-d8	*4.25*		*µg/g wet*	4.20		*101*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.47*		*µg/g wet*	3.99		*87*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*3.29*		*µg/g wet*	4.00		*82*	*60-140*			
LCS (B8E1307-BS1)				Prepared: 2018-05-16, Analyzed: 2018-05-18						
Benzene	1.87	0.060	µg/g wet	2.00		93	73-131			
Ethylbenzene	1.53	0.100	µg/g wet	2.00		77	71-127			
Methyl tert-butyl ether	0.808	0.080	µg/g wet	2.00		40	60-131			SPK1
Styrene	1.38	0.100	µg/g wet	2.00		69	65-126			
Toluene	1.62	0.400	µg/g wet	2.00		81	74-136			
Xylenes (total)	4.76	0.200	µg/g wet	6.00		79	71-125			
Surrogate: Toluene-d8	*3.42*		*µg/g wet*	4.20		*81*	*60-140*			
Surrogate: 4-Bromofluorobenzene	*3.05*		*µg/g wet*	3.99		*76*	*60-140*			
Surrogate: 1,4-Dichlorobenzene-d4	*2.76*		*µg/g wet*	4.00		*69*	*60-140*			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051243
PROJECT	SOL040704.02	**REPORTED**	2018-05-18 15:17

QC Qualifiers:

S02	Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
SPK1	The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

☒ 110-4011 Viking Way, Richmond, BC V6V 2K9
Tel: (604) 279-1499 Fax: (604) 279-1599

☐ 102-3677 Highway 97N, Kelowna, BC V1X 5C3
Tel: (250) 765-9646 Fax: (250) 765-3893

☐ 17225 109 Avenue NW, Edmonton, AB T5S 1H7
Tel: (780) 489-9100 Fax: (780) 489-9700

CARO BC COC, Rev 2015

CHAIN OF CUSTODY RECORD

COC# [ ] PAGE 1 OF

RELINQUISHED BY:	DATE: 11 May 18	RECEIVED BY:	DATE: 5/11
Judah Chen	TIME: 1606	BAV W	TIME: 160

PROJECT: SOL040704.02

PROJECT INFO:

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 3 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215
Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

SAMPLED BY: JC

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD-MMM-YY	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)
BH204-01			X		4	11 May 18	10:30				
BH204-02			X		4						
BH204-03			X		4						
BH204-04			X		4						
BH204-05			X		4						
BH204-06			X		4						
BH204-07			X		4						
BH204-08			X		4						
BH204-09			X		4						
BH204-10			X		4						
BH204-11			X		4						
BH204-12			X		4						

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐
VOC ☐ VPH ☐
EPH ☐ PHC F2-F4 ☐
PAH ☐ L/HEPH ☐
PHENOLS Chlorinated ☐ Non-Chlor. ☐
PCB ☐ GLYCOLS ☐ HAA ☐
PESTICIDES ☐ ACID HERBICIDES ☐
METALS - WATER TOTAL Hg ☐
METALS - WATER DISSOLVED Hg ☐
METALS - SOIL (SALM) ☐ inc. pH ☐
pH ☐ EC ☐ ALK ☐
TSS ☐ VSS ☐ TDS ☐
BOD ☐ COD ☐
TOG ☐ MOG ☐
FECAL COLIFORMS ☐ HPC ☐
TOTAL COLIFORMS ☐ E. coli ☐
ASBESTOS
HOLD

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply):

*** OTHER INSTRUCTIONS:**

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 28.0 ICE: Y ☐ N ☐
COOLER 2 (°C): ICE: Y ☐ N ☐
COOLER 3 (°C): ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO ANALYTICAL SERVICES
Caring About Results... Obviously

☒ 110-4011 Viking Way, Richmond, BC V6V 2K9
Tel: (604) 279-1499 Fax: (604) 279-1599

☐ 102-3677 Highway 97N, Kelowna, BC V1X 5C3
Tel: (250) 765-9646 Fax: (250) 765-3893

☐ 17225 109 Avenue NW, Edmonton, AB T5S 1H7
Tel: (780) 489-9100 Fax: (780) 489-9700

CHAIN OF CUSTODY RECORD

COC# _____ PAGE 2 OF

RELINQUISHED BY:	DATE: 11 May 18	RECEIVED BY:	DATE:
Judah Chen	TIME: 1606		TIME:

PROJECT: SOL040704.02

PROJECT INFO:

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215, Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 3 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

SAMPLED BY: JC

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD-MMM-YY	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)	HOLD
BH204-13			X		4	11 May 18	1030					✓
BH204-14			X		4							✓
BH204-15			X		4							✓
BH204-16			X		4							✓
BH204-17			X		4							✓
BH204-18			X		4							✓
BH204-19			X		4							✓
BH204-20			X		4							✓
BH204-21			X		4							✓
BH204-22			X		4							✓
BH204-23			X		4							✓
BH204-24			X		4	↓	↓					✓

ANALYSES REQUESTED:
BTEX ☐ VPH ☐ PHC F1 ☐ | VOC ☐ VPH ☐ | EPH ☐ PHC F2-F4 ☐ | PAH ☐ L/HEPH ☐ | PHENOLS Chlorinated ☐ Non-Chlor. ☐ | PCB ☐ GLYCOLS ☐ HAA ☐ | PESTICIDES ☐ ACID HERBICIDES ☐ | METALS - WATER TOTAL Hg ☐ | METALS - WATER DISSOLVED Hg ☐ | METALS - SOIL (SALM) ☐ inc. pH ☐ | pH ☐ EC ☐ ALK ☐ | TSS ☐ VSS ☐ TDS ☐ | BOD ☐ COD ☐ | TOG ☐ MOG ☐ | FECAL COLIFORMS ☐ HPC ☐ | TOTAL COLIFORMS ☐ *E. coli* ☐ | ASBESTOS

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply): _____
*** OTHER INSTRUCTIONS:**

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): _____ ICE: Y ☐ N ☐
COOLER 2 (°C): _____ ICE: Y ☐ N ☐
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO ANALYTICAL SERVICES
Caring About Results... Obviously

☒ 110-4011 Viking Way, Richmond, BC V6V 2K9
Tel: (604) 279-1499 Fax: (604) 279-1599

☐ 102-3677 Highway 97N, Kelowna, BC V1X 5C3
Tel: (250) 765-9646 Fax: (250) 765-3893

☐ 17225 109 Avenue NW, Edmonton, AB T5S 1H7
Tel: (780) 489-9100 Fax: (780) 489-9700

CHAIN OF CUSTODY RECORD

COC# _____ PAGE 3 OF

RELINQUISHED BY:	DATE: 11 May 18	RECEIVED BY:	DATE:
Judah	TIME: 1606		TIME:

PROJECT: SOL040704.02

PROJECT INFO:

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215, Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 3 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

SAMPLED BY: JC

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD-MMM-YY	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)
BH204-25			X		4	11 May 18	10:30				
BH204-26			X		4	"	"				
BH204-27			X		4	"	"				
BH204-28			X		4	"	"				
BH204-29			X		4	"	"				
BH204-30			X		4	"	"				
BH204-31			X		4	"	"				

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐
VOC ☐ VPH ☐
EPH ☐ PHC F2-F4 ☐
PAH ☐ L/HEPH ☐
PHENOLS Chlorinated ☐ Non-Chlor. ☐
PCB ☐ GLYCOLS ☐ HAA ☐
PESTICIDES ☐ ACID HERBICIDES ☐
METALS - WATER TOTAL Hg ☐
METALS - WATER DISSOLVED Hg ☐
METALS - SOIL (SALM) ☐ inc. pH ☐
pH ☐ EC ☐ ALK ☐
TSS ☐ VSS ☐ TDS ☐
BOD ☐ COD ☐
TOG ☐ MOG ☐
FECAL COLIFORMS ☐ HPC ☐
TOTAL COLIFORMS ☐ *E. coli* ☐
ASBESTOS
HOLD

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply): _____
* **OTHER INSTRUCTIONS:**

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): _____ ICE: Y ☐ N ☐
COOLER 2 (°C): _____ ICE: Y ☐ N ☐
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CERTIFICATE OF ANALYSIS

REPORTED TO	Next Environmental Inc 215 - 2550 Boundary Road Burnaby, BC V5M 3Z3		
ATTENTION	Ardavan Mansourpour	**WORK ORDER**	8030689
PO NUMBER		**RECEIVED / TEMP**	2018-03-08 11:51 / 6°C
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09
PROJECT INFO		**COC NUMBER**	B60695

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at bshaw@caro.ca

Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Client Service Coordinator

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8030689
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09

Analyte	Result	RL	Units	Analyzed	Qualifier
BH110 (8030689-01) | Matrix: Water | Sampled: 2018-03-08 10:30					
Dissolved Metals					
Arsenic, dissolved	**1.29**	0.50	µg/L	2018-03-08	
Barium, dissolved	**32.5**	5.0	µg/L	2018-03-08	
Cadmium, dissolved	**0.032**	0.010	µg/L	2018-03-08	
Chromium, dissolved	< 0.50	0.50	µg/L	2018-03-08	
Copper, dissolved	**2.57**	0.40	µg/L	2018-03-08	
Lead, dissolved	< 0.20	0.20	µg/L	2018-03-08	
Zinc, dissolved	**11.5**	4.0	µg/L	2018-03-08	
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	**389**	100	µg/L	2018-03-11	
VPHw	**233**	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2018-03-13	
Surrogate: 2-Methylnonane (EPH/F2-4)	*71*	*60-140*	%	*2018-03-13*	
Polycyclic Aromatic Hydrocarbons (PAH)					
Acenaphthene	< 0.050	0.050	µg/L	2018-03-13	
Anthracene	< 0.010	0.010	µg/L	2018-03-13	
Benz(a)anthracene	< 0.010	0.010	µg/L	2018-03-13	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2018-03-13	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2018-03-13	
Chrysene	< 0.050	0.050	µg/L	2018-03-13	
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2018-03-13	
Fluoranthene	< 0.030	0.030	µg/L	2018-03-13	
Fluorene	< 0.050	0.050	µg/L	2018-03-13	
1-Methylnaphthalene	**0.177**	0.100	µg/L	2018-03-13	
2-Methylnaphthalene	**0.347**	0.100	µg/L	2018-03-13	
Naphthalene	**0.492**	0.200	µg/L	2018-03-13	
Pyrene	< 0.020	0.020	µg/L	2018-03-13	
Quinoline	< 0.050	0.050	µg/L	2018-03-13	
Surrogate: Acridine-d9	*73*	*50-140*	%	*2018-03-13*	
Surrogate: Naphthalene-d8	*73*	*50-140*	%	*2018-03-13*	
Surrogate: Perylene-d12	*86*	*50-140*	%	*2018-03-13*	
Volatile Organic Compounds (VOC)					
Benzene	**7.0**	0.5	µg/L	2018-03-11	
1,3-Butadiene	< 1.0	1.0	µg/L	2018-03-11	
n-Butylbenzene	< 1.0	1.0	µg/L	2018-03-11	
sec-Butylbenzene	< 1.0	1.0	µg/L	2018-03-11	
tert-Butylbenzene	< 1.0	1.0	µg/L	2018-03-11	
Carbon tetrachloride	< 0.5	0.5	µg/L	2018-03-11	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2018-03-11	
1,2-Dichloroethane	**67.9**	1.0	µg/L	2018-03-11	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2018-03-11	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8030689
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09

Analyte	Result	RL	Units	Analyzed	Qualifier
BH110 (8030689-01) | Matrix: Water | Sampled: 2018-03-08 10:30, Continued					
Volatile Organic Compounds (VOC), Continued					
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2018-03-11	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2018-03-11	
Dichloromethane	< 3.0	3.0	µg/L	2018-03-11	
Ethylbenzene	**48.1**	1.0	µg/L	2018-03-11	
Isopropylbenzene (Cumene)	**2.5**	1.0	µg/L	2018-03-11	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2018-03-11	
n-Propylbenzene	**2.8**	1.0	µg/L	2018-03-11	
Styrene	< 1.0	1.0	µg/L	2018-03-11	
Tetrachloroethylene	< 1.0	1.0	µg/L	2018-03-11	
Toluene	**11.8**	1.0	µg/L	2018-03-11	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2018-03-11	
Trichloroethylene	< 1.0	1.0	µg/L	2018-03-11	
1,3,5-Trimethylbenzene	**14.0**	1.0	µg/L	2018-03-11	
Vinyl chloride	< 1.0	1.0	µg/L	2018-03-11	
Xylenes (total)	**90.0**	2.0	µg/L	2018-03-11	
Surrogate: Toluene-d8	*111*	*70-130*	%	*2018-03-11*	
Surrogate: 4-Bromofluorobenzene	*111*	*70-130*	%	*2018-03-11*	
Surrogate: 1,4-Dichlorobenzene-d4	*113*	*70-130*	%	*2018-03-11*	
BH160 (8030689-02) | Matrix: Water | Sampled: 2018-03-08 10:30					
Dissolved Metals					
Arsenic, dissolved	**1.28**	0.50	µg/L	2018-03-08	
Barium, dissolved	**33.1**	5.0	µg/L	2018-03-08	
Cadmium, dissolved	**0.034**	0.010	µg/L	2018-03-08	
Chromium, dissolved	< 0.50	0.50	µg/L	2018-03-08	
Copper, dissolved	**2.00**	0.40	µg/L	2018-03-08	
Lead, dissolved	< 0.20	0.20	µg/L	2018-03-08	
Zinc, dissolved	**8.6**	4.0	µg/L	2018-03-08	
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	**478**	100	µg/L	2018-03-11	
VPHw	**265**	100	µg/L	N/A	
EPHw10-19	< 250	250	µg/L	2018-03-13	
Surrogate: 2-Methylnonane (EPH/F2-4)	*76*	*60-140*	%	*2018-03-13*	
Polycyclic Aromatic Hydrocarbons (PAH)					
Acenaphthene	< 0.050	0.050	µg/L	2018-03-13	
Anthracene	< 0.010	0.010	µg/L	2018-03-13	
Benz(a)anthracene	< 0.010	0.010	µg/L	2018-03-13	
Benzo(a)pyrene	< 0.010	0.010	µg/L	2018-03-13	
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L	2018-03-13	
Chrysene	< 0.050	0.050	µg/L	2018-03-13	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8030689
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09

Analyte	Result	RL	Units	Analyzed	Qualifier
BH160 (8030689-02) | Matrix: Water | Sampled: 2018-03-08 10:30, Continued					
Polycyclic Aromatic Hydrocarbons (PAH), Continued					
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L	2018-03-13	
Fluoranthene	< 0.030	0.030	µg/L	2018-03-13	
Fluorene	< 0.050	0.050	µg/L	2018-03-13	
1-Methylnaphthalene	**0.179**	0.100	µg/L	2018-03-13	
2-Methylnaphthalene	**0.346**	0.100	µg/L	2018-03-13	
Naphthalene	**0.498**	0.200	µg/L	2018-03-13	
Pyrene	< 0.020	0.020	µg/L	2018-03-13	
Quinoline	< 0.050	0.050	µg/L	2018-03-13	
Surrogate: Acridine-d9	*77*	*50-140*	%	*2018-03-13*	
Surrogate: Naphthalene-d8	*78*	*50-140*	%	*2018-03-13*	
Surrogate: Perylene-d12	*93*	*50-140*	%	*2018-03-13*	
Volatile Organic Compounds (VOC)					
Benzene	**9.5**	0.5	µg/L	2018-03-11	
1,3-Butadiene	< 1.0	1.0	µg/L	2018-03-11	
n-Butylbenzene	< 1.0	1.0	µg/L	2018-03-11	
sec-Butylbenzene	< 1.0	1.0	µg/L	2018-03-11	
tert-Butylbenzene	< 1.0	1.0	µg/L	2018-03-11	
Carbon tetrachloride	< 0.5	0.5	µg/L	2018-03-11	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2018-03-11	
1,2-Dichloroethane	**83.6**	1.0	µg/L	2018-03-11	
1,1-Dichloroethylene	< 1.0	1.0	µg/L	2018-03-11	
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2018-03-11	
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L	2018-03-11	
Dichloromethane	< 3.0	3.0	µg/L	2018-03-11	
Ethylbenzene	**69.3**	1.0	µg/L	2018-03-11	
Isopropylbenzene (Cumene)	**3.3**	1.0	µg/L	2018-03-11	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2018-03-11	
n-Propylbenzene	**3.3**	1.0	µg/L	2018-03-11	
Styrene	< 1.0	1.0	µg/L	2018-03-11	
Tetrachloroethylene	< 1.0	1.0	µg/L	2018-03-11	
Toluene	**16.1**	1.0	µg/L	2018-03-11	
1,1,1-Trichloroethane	< 1.0	1.0	µg/L	2018-03-11	
Trichloroethylene	< 1.0	1.0	µg/L	2018-03-11	
1,3,5-Trimethylbenzene	**15.9**	1.0	µg/L	2018-03-11	
Vinyl chloride	< 1.0	1.0	µg/L	2018-03-11	
Xylenes (total)	**118**	2.0	µg/L	2018-03-11	
Surrogate: Toluene-d8	*111*	*70-130*	%	*2018-03-11*	
Surrogate: 4-Bromofluorobenzene	*109*	*70-130*	%	*2018-03-11*	
Surrogate: 1,4-Dichlorobenzene-d4	*115*	*70-130*	%	*2018-03-11*	

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8030689
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09

Analysis Description	Method Ref.	Technique	Location
Dissolved Metals in Water	EPA 200.8 / EPA 6020B	0.45 µm Filtration / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	Richmond
EPH in Water	EPA 3511* / BCMOE EPHw	Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)	Richmond
Hardness in Water	SM 2340 B (2011)	Calculation: 2.497 [diss Ca] + 4.118 [diss Mg]	N/A
HEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
LEPHw in Water	BCMOE LEPH/HEPH	Calculation	N/A
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MSD (SIM)	Richmond
VH in Water	EPA 5030B / BCMOE VHw	Purge&Trap / Gas Chromatography (GC-FID)	Richmond
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	Richmond
VPHw in Water	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)	N/A

Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
mg/L	Milligrams per litre
µg/L	Micrograms per litre
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8030689
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
BCMOE Aggregate Hydrocarbons, Batch B8C0716										
Blank (B8C0716-BLK1)				Prepared: 2018-03-10, Analyzed: 2018-03-10						
VHw (6-10)	< 100	100	µg/L							
LCS (B8C0716-BS2)				Prepared: 2018-03-10, Analyzed: 2018-03-10						
VHw (6-10)	3060	100	µg/L	3300		93	70-130			
BCMOE Aggregate Hydrocarbons, Batch B8C0783										
Blank (B8C0783-BLK1)				Prepared: 2018-03-12, Analyzed: 2018-03-12						
EPHw10-19	< 250	250	µg/L							
EPHw19-32	< 250	250	µg/L							
Surrogate: 2-Methylnonane (EPH/F2-4)	*287*		*µg/L*	442		*65*	*60-140*			
LCS (B8C0783-BS2)				Prepared: 2018-03-12, Analyzed: 2018-03-12						
EPHw10-19	11100	250	µg/L	15400		72	70-130			
EPHw19-32	15400	250	µg/L	22200		70	70-130			
Surrogate: 2-Methylnonane (EPH/F2-4)	*304*		*µg/L*	442		*69*	*60-140*			
Dissolved Metals, Batch B8C0642										
Blank (B8C0642-BLK1)				Prepared: 2018-03-08, Analyzed: 2018-03-08						
Aluminum, dissolved	< 5.0	5.0	µg/L							
Antimony, dissolved	< 0.20	0.20	µg/L							
Arsenic, dissolved	< 0.50	0.50	µg/L							
Barium, dissolved	< 5.0	5.0	µg/L							
Beryllium, dissolved	< 0.10	0.10	µg/L							
Bismuth, dissolved	< 0.10	0.10	µg/L							
Boron, dissolved	< 5.0	5.0	µg/L							
Cadmium, dissolved	< 0.010	0.010	µg/L							
Calcium, dissolved	< 200	200	µg/L							
Chromium, dissolved	< 0.50	0.50	µg/L							
Cobalt, dissolved	< 0.10	0.10	µg/L							
Copper, dissolved	< 0.40	0.40	µg/L							
Iron, dissolved	< 10	10	µg/L							
Lead, dissolved	< 0.20	0.20	µg/L							
Lithium, dissolved	< 0.10	0.10	µg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8030689
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B8C0642, Continued										
Blank (B8C0642-BLK1), Continued				Prepared: 2018-03-08, Analyzed: 2018-03-08						
Magnesium, dissolved	< 10	10	µg/L							
Manganese, dissolved	< 0.20	0.20	µg/L							
Molybdenum, dissolved	< 0.10	0.10	µg/L							
Nickel, dissolved	< 0.40	0.40	µg/L							
Phosphorus, dissolved	< 50	50	µg/L							
Potassium, dissolved	< 100	100	µg/L							
Selenium, dissolved	< 0.50	0.50	µg/L							
Silicon, dissolved	< 1000	1000	µg/L							
Silver, dissolved	< 0.050	0.050	µg/L							
Sodium, dissolved	< 100	100	µg/L							
Strontium, dissolved	< 1.0	1.0	µg/L							
Sulfur, dissolved	< 3000	3000	µg/L							
Tellurium, dissolved	< 0.50	0.50	µg/L							
Thallium, dissolved	< 0.020	0.020	µg/L							
Thorium, dissolved	< 0.10	0.10	µg/L							
Tin, dissolved	< 0.20	0.20	µg/L							
Titanium, dissolved	< 5.0	5.0	µg/L							
Tungsten, dissolved	< 1.0	1.0	µg/L							
Uranium, dissolved	< 0.020	0.020	µg/L							
Vanadium, dissolved	< 1.0	1.0	µg/L							
Zinc, dissolved	< 4.0	4.0	µg/L							
Zirconium, dissolved	< 0.10	0.10	µg/L							
LCS (B8C0642-BS1)				Prepared: 2018-03-08, Analyzed: 2018-03-08						
Aluminum, dissolved	21.4	5.0	µg/L	20.0		107	80-120			
Antimony, dissolved	19.0	0.20	µg/L	20.0		95	80-120			
Arsenic, dissolved	19.9	0.50	µg/L	20.0		100	80-120			
Barium, dissolved	19.5	5.0	µg/L	20.0		97	80-120			
Beryllium, dissolved	19.6	0.10	µg/L	20.0		98	80-120			
Bismuth, dissolved	20.1	0.10	µg/L	20.0		100	80-120			
Boron, dissolved	18.4	5.0	µg/L	20.0		92	80-120			
Cadmium, dissolved	18.9	0.010	µg/L	20.0		95	80-120			
Calcium, dissolved	2010	200	µg/L	2000		100	80-120			
Chromium, dissolved	20.0	0.50	µg/L	20.0		100	80-120			
Cobalt, dissolved	19.8	0.10	µg/L	20.0		99	80-120			
Copper, dissolved	20.5	0.40	µg/L	20.0		102	80-120			
Iron, dissolved	2000	10	µg/L	2000		100	80-120			
Lead, dissolved	20.0	0.20	µg/L	20.0		100	80-120			
Lithium, dissolved	19.6	0.10	µg/L	20.0		98	80-120			
Magnesium, dissolved	1940	10	µg/L	2000		97	80-120			
Manganese, dissolved	20.1	0.20	µg/L	20.0		101	80-120			
Molybdenum, dissolved	19.2	0.10	µg/L	20.0		96	80-120			
Nickel, dissolved	20.2	0.40	µg/L	20.0		101	80-120			
Phosphorus, dissolved	1880	50	µg/L	2000		94	80-120			
Potassium, dissolved	2020	100	µg/L	2000		101	80-120			
Selenium, dissolved	18.1	0.50	µg/L	20.0		91	80-120			
Silicon, dissolved	1800	1000	µg/L	2000		90	80-120			
Silver, dissolved	18.8	0.050	µg/L	20.0		94	80-120			
Sodium, dissolved	1950	100	µg/L	2000		98	80-120			
Strontium, dissolved	19.1	1.0	µg/L	20.0		96	80-120			
Sulfur, dissolved	4300	3000	µg/L	5000		86	80-120			
Tellurium, dissolved	19.1	0.50	µg/L	20.0		96	80-120			
Thallium, dissolved	19.9	0.020	µg/L	20.0		100	80-120			
Thorium, dissolved	18.4	0.10	µg/L	20.0		92	80-120			
Tin, dissolved	20.2	0.20	µg/L	20.0		101	80-120			
Titanium, dissolved	20.9	5.0	µg/L	20.0		105	80-120			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8030689
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B8C0642, Continued										
LCS (B8C0642-BS1), Continued				Prepared: 2018-03-08, Analyzed: 2018-03-08						
Tungsten, dissolved	17.1	1.0	µg/L	20.0		86	80-120			
Uranium, dissolved	21.1	0.020	µg/L	20.0		106	80-120			
Vanadium, dissolved	19.3	1.0	µg/L	20.0		97	80-120			
Zinc, dissolved	21.3	4.0	µg/L	20.0		106	80-120			
Zirconium, dissolved	21.0	0.10	µg/L	20.0		105	80-120			
Duplicate (B8C0642-DUP1)		**Source: 8030689-02**		Prepared: 2018-03-08, Analyzed: 2018-03-08						
Aluminum, dissolved	24.3	5.0	µg/L		26.3			8	11	
Antimony, dissolved	0.78	0.20	µg/L		0.83				20	
Arsenic, dissolved	1.26	0.50	µg/L		1.28				8	
Barium, dissolved	32.2	5.0	µg/L		33.1			3	7	
Beryllium, dissolved	< 0.10	0.10	µg/L		< 0.10				14	
Bismuth, dissolved	< 0.10	0.10	µg/L		< 0.10				20	
Boron, dissolved	134	5.0	µg/L		135			< 1	13	
Cadmium, dissolved	0.032	0.010	µg/L		0.034				20	
Calcium, dissolved	48600	200	µg/L		49700			2	8	
Chromium, dissolved	< 0.50	0.50	µg/L		< 0.50				14	
Cobalt, dissolved	0.71	0.10	µg/L		0.73			3	10	
Copper, dissolved	1.89	0.40	µg/L		2.00			6	20	
Iron, dissolved	15	10	µg/L		16				14	
Lead, dissolved	< 0.20	0.20	µg/L		< 0.20				20	
Lithium, dissolved	4.21	0.10	µg/L		4.23			< 1	14	
Magnesium, dissolved	10900	10	µg/L		11200			2	6	
Manganese, dissolved	131	0.20	µg/L		134			2	9	
Molybdenum, dissolved	28.3	0.10	µg/L		29.1			3	19	
Nickel, dissolved	1.00	0.40	µg/L		0.98				20	
Phosphorus, dissolved	< 50	50	µg/L		< 50				14	
Potassium, dissolved	4410	100	µg/L		4530			3	8	
Selenium, dissolved	0.85	0.50	µg/L		0.92				20	
Silicon, dissolved	5400	1000	µg/L		5500			< 1	12	
Silver, dissolved	< 0.050	0.050	µg/L		< 0.050				20	
Sodium, dissolved	35500	100	µg/L		36400			2	6	
Strontium, dissolved	183	1.0	µg/L		188			3	6	
Sulfur, dissolved	10200	3000	µg/L		10400				20	
Tellurium, dissolved	< 0.50	0.50	µg/L		< 0.50				20	
Thallium, dissolved	< 0.020	0.020	µg/L		< 0.020				13	
Thorium, dissolved	< 0.10	0.10	µg/L		< 0.10				20	
Tin, dissolved	2.06	0.20	µg/L		2.09			2	20	
Titanium, dissolved	< 5.0	5.0	µg/L		< 5.0				20	
Tungsten, dissolved	4.0	1.0	µg/L		4.0				20	
Uranium, dissolved	9.49	0.020	µg/L		9.67			2	14	
Vanadium, dissolved	2.8	1.0	µg/L		2.9				20	
Zinc, dissolved	9.8	4.0	µg/L		8.6				11	
Zirconium, dissolved	< 0.10	0.10	µg/L		0.10				20	
Reference (B8C0642-SRM1)				Prepared: 2018-03-08, Analyzed: 2018-03-08						
Aluminum, dissolved	232	5.0	µg/L	233		100	79-114			
Antimony, dissolved	47.6	0.20	µg/L	43.0		111	89-123			
Arsenic, dissolved	464	0.50	µg/L	438		106	87-113			
Barium, dissolved	3420	5.0	µg/L	3350		102	85-114			
Beryllium, dissolved	220	0.10	µg/L	213		103	79-122			
Boron, dissolved	1550	5.0	µg/L	1740		89	79-117			
Cadmium, dissolved	220	0.010	µg/L	224		98	89-112			
Calcium, dissolved	8050	200	µg/L	7690		105	85-120			
Chromium, dissolved	450	0.50	µg/L	437		103	87-113			
Cobalt, dissolved	134	0.10	µg/L	128		105	90-117			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8030689
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Dissolved Metals, Batch B8C0642, Continued										
Reference (B8C0642-SRM1), Continued				Prepared: 2018-03-08, Analyzed: 2018-03-08						
Copper, dissolved	873	0.40	µg/L	844		103	90-115			
Iron, dissolved	1320	10	µg/L	1290		103	86-112			
Lead, dissolved	112	0.20	µg/L	112		100	90-113			
Lithium, dissolved	104	0.10	µg/L	104		100	77-127			
Magnesium, dissolved	6820	10	µg/L	6920		99	84-116			
Manganese, dissolved	364	0.20	µg/L	345		106	85-113			
Molybdenum, dissolved	435	0.10	µg/L	426		102	87-112			
Nickel, dissolved	864	0.40	µg/L	840		103	90-114			
Phosphorus, dissolved	492	50	µg/L	495		99	74-119			
Potassium, dissolved	3300	100	µg/L	3190		103	78-119			
Selenium, dissolved	31.2	0.50	µg/L	33.1		94	89-123			
Sodium, dissolved	18500	100	µg/L	19100		97	81-117			
Strontium, dissolved	909	1.0	µg/L	916		99	82-111			
Thallium, dissolved	39.6	0.020	µg/L	39.3		101	90-113			
Uranium, dissolved	249	0.020	µg/L	266		94	87-113			
Vanadium, dissolved	877	1.0	µg/L	869		101	85-110			
Zinc, dissolved	910	4.0	µg/L	881		103	88-114			
Polycyclic Aromatic Hydrocarbons (PAH), Batch B8C0783										
Blank (B8C0783-BLK1)				Prepared: 2018-03-12, Analyzed: 2018-03-12						
Acenaphthene	< 0.050	0.050	µg/L							
Acenaphthylene	< 0.200	0.200	µg/L							
Acridine	< 0.050	0.050	µg/L							
Anthracene	< 0.010	0.010	µg/L							
Benz(a)anthracene	< 0.010	0.010	µg/L							
Benzo(a)pyrene	< 0.010	0.010	µg/L							
Benzo(b+j)fluoranthene	< 0.050	0.050	µg/L							
Benzo(g,h,i)perylene	< 0.050	0.050	µg/L							
Benzo(k)fluoranthene	< 0.050	0.050	µg/L							
2-Chloronaphthalene	< 0.100	0.100	µg/L							
Chrysene	< 0.050	0.050	µg/L							
Dibenz(a,h)anthracene	< 0.010	0.010	µg/L							
Fluoranthene	< 0.030	0.030	µg/L							
Fluorene	< 0.050	0.050	µg/L							
Indeno(1,2,3-cd)pyrene	< 0.050	0.050	µg/L							
1-Methylnaphthalene	< 0.100	0.100	µg/L							
2-Methylnaphthalene	< 0.100	0.100	µg/L							
Naphthalene	< 0.200	0.200	µg/L							
Phenanthrene	< 0.100	0.100	µg/L							
Pyrene	< 0.020	0.020	µg/L							
Quinoline	< 0.050	0.050	µg/L							
Surrogate: Acridine-d9	*3.14*		*µg/L*	4.44		*71*	*50-140*			
Surrogate: Naphthalene-d8	*4.18*		*µg/L*	4.44		*94*	*50-140*			
Surrogate: Perylene-d12	*3.95*		*µg/L*	4.44		*89*	*50-140*			
LCS (B8C0783-BS1)				Prepared: 2018-03-12, Analyzed: 2018-03-12						
Acenaphthene	3.38	0.050	µg/L	4.40		77	58-125			
Acenaphthylene	3.02	0.200	µg/L	4.40		69	54-128			
Acridine	2.45	0.050	µg/L	4.44		55	50-112			
Anthracene	3.26	0.010	µg/L	4.44		73	66-125			
Benz(a)anthracene	3.04	0.010	µg/L	4.44		68	59-123			
Benzo(a)pyrene	2.81	0.010	µg/L	4.40		64	62-116			
Benzo(b+j)fluoranthene	6.49	0.050	µg/L	8.89		73	69-121			
Benzo(g,h,i)perylene	3.00	0.050	µg/L	4.40		68	58-129			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8030689
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Polycyclic Aromatic Hydrocarbons (PAH), Batch B8C0783, Continued										
LCS (B8C0783-BS1), Continued				Prepared: 2018-03-12, Analyzed: 2018-03-12						
Benzo(k)fluoranthene	3.43	0.050	µg/L	4.44		77	67-128			
2-Chloronaphthalene	2.28	0.100	µg/L	4.44		51	50-140			
Chrysene	3.43	0.050	µg/L	4.42		78	58-125			
Dibenz(a,h)anthracene	3.09	0.010	µg/L	4.42		70	58-126			
Fluoranthene	2.92	0.030	µg/L	4.36		67	67-133			
Fluorene	3.46	0.050	µg/L	4.40		79	55-122			
Indeno(1,2,3-cd)pyrene	3.26	0.050	µg/L	4.44		73	62-126			
1-Methylnaphthalene	3.65	0.100	µg/L	4.38		83	53-125			
2-Methylnaphthalene	3.63	0.100	µg/L	4.36		83	52-122			
Naphthalene	3.88	0.200	µg/L	4.44		87	50-130			
Phenanthrene	3.34	0.100	µg/L	4.40		76	67-127			
Pyrene	3.00	0.020	µg/L	4.44		68	68-133			
Quinoline	4.59	0.050	µg/L	4.44		103	51-140			
Surrogate: Acridine-d9	*2.64*		*µg/L*	4.44		*59*	*50-140*			
Surrogate: Naphthalene-d8	*3.70*		*µg/L*	4.44		*83*	*50-140*			
Surrogate: Perylene-d12	*3.17*		*µg/L*	4.44		*71*	*50-140*			
LCS Dup (B8C0783-BSD1)				Prepared: 2018-03-12, Analyzed: 2018-03-12						
Acenaphthene	3.48	0.050	µg/L	4.40		79	58-125	3	16	
Acenaphthylene	3.03	0.200	µg/L	4.40		69	54-128	< 1	16	
Acridine	2.71	0.050	µg/L	4.44		61	50-112	10	26	
Anthracene	3.50	0.010	µg/L	4.44		79	66-125	7	14	
Benz(a)anthracene	3.14	0.010	µg/L	4.44		71	59-123	3	23	
Benzo(a)pyrene	3.20	0.010	µg/L	4.40		73	62-116	13	16	
Benzo(b+j)fluoranthene	6.79	0.050	µg/L	8.89		76	69-121	5	14	
Benzo(g,h,i)perylene	3.32	0.050	µg/L	4.40		76	58-129	10	25	
Benzo(k)fluoranthene	3.16	0.050	µg/L	4.44		71	67-128	8	18	
2-Chloronaphthalene	1.99	0.100	µg/L	4.44		45	50-140	14	30	SPK1
Chrysene	3.91	0.050	µg/L	4.42		89	58-125	13	24	
Dibenz(a,h)anthracene	2.86	0.010	µg/L	4.42		65	58-126	8	23	
Fluoranthene	2.99	0.030	µg/L	4.36		69	67-133	2	18	
Fluorene	3.59	0.050	µg/L	4.40		82	55-122	4	16	
Indeno(1,2,3-cd)pyrene	2.94	0.050	µg/L	4.44		66	62-126	10	22	
1-Methylnaphthalene	3.63	0.100	µg/L	4.38		83	53-125	< 1	16	
2-Methylnaphthalene	3.58	0.100	µg/L	4.36		82	52-122	1	17	
Naphthalene	3.83	0.200	µg/L	4.44		86	50-130	1	18	
Phenanthrene	3.65	0.100	µg/L	4.40		83	67-127	9	14	
Pyrene	3.13	0.020	µg/L	4.44		70	68-133	4	18	
Quinoline	4.81	0.050	µg/L	4.44		108	51-140	5	12	
Surrogate: Acridine-d9	*2.88*		*µg/L*	4.44		*65*	*50-140*			
Surrogate: Naphthalene-d8	*3.59*		*µg/L*	4.44		*81*	*50-140*			
Surrogate: Perylene-d12	*3.47*		*µg/L*	4.44		*78*	*50-140*			
Volatile Organic Compounds (VOC), Batch B8C0716										
Blank (B8C0716-BLK1)				Prepared: 2018-03-10, Analyzed: 2018-03-10						
Benzene	< 0.5	0.5	µg/L							
1,3-Butadiene	< 1.0	1.0	µg/L							
n-Butylbenzene	< 1.0	1.0	µg/L							
sec-Butylbenzene	< 1.0	1.0	µg/L							
tert-Butylbenzene	< 1.0	1.0	µg/L							
Carbon tetrachloride	< 0.5	0.5	µg/L							
1,2-Dibromoethane	< 0.3	0.3	µg/L							
1,2-Dichloroethane	< 1.0	1.0	µg/L							
1,1-Dichloroethylene	< 1.0	1.0	µg/L							

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8030689
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8C0716, Continued										
Blank (B8C0716-BLK1), Continued				Prepared: 2018-03-10, Analyzed: 2018-03-10						
cis-1,2-Dichloroethylene	< 1.0	1.0	µg/L							
trans-1,2-Dichloroethylene	< 1.0	1.0	µg/L							
Dichloromethane	< 3.0	3.0	µg/L							
Ethylbenzene	< 1.0	1.0	µg/L							
Isopropylbenzene (Cumene)	< 1.0	1.0	µg/L							
Methyl tert-butyl ether	< 1.0	1.0	µg/L							
n-Propylbenzene	< 1.0	1.0	µg/L							
Styrene	< 1.0	1.0	µg/L							
Tetrachloroethylene	< 1.0	1.0	µg/L							
Toluene	< 1.0	1.0	µg/L							
1,1,1-Trichloroethane	< 1.0	1.0	µg/L							
Trichloroethylene	< 1.0	1.0	µg/L							
1,3,5-Trimethylbenzene	< 1.0	1.0	µg/L							
Vinyl chloride	< 1.0	1.0	µg/L							
Xylenes (total)	< 2.0	2.0	µg/L							
Surrogate: Toluene-d8	*25.1*		*µg/L*	24.6		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*23.8*		*µg/L*	25.0		*95*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*22.1*		*µg/L*	25.0		*88*	*70-130*			
LCS (B8C0716-BS1)				Prepared: 2018-03-10, Analyzed: 2018-03-10						
Benzene	19.2	0.5	µg/L	20.0		96	70-130			
1,3-Butadiene	13.2	1.0	µg/L	20.1		65	60-140			
n-Butylbenzene	20.6	1.0	µg/L	20.0		103	70-130			
sec-Butylbenzene	20.9	1.0	µg/L	20.0		104	70-130			
tert-Butylbenzene	20.8	1.0	µg/L	20.0		104	70-130			
Carbon tetrachloride	22.7	0.5	µg/L	20.1		113	70-130			
1,2-Dibromoethane	18.8	0.3	µg/L	20.0		94	70-130			
1,2-Dichloroethane	18.9	1.0	µg/L	20.2		94	70-130			
1,1-Dichloroethylene	16.2	1.0	µg/L	20.1		81	70-130			
cis-1,2-Dichloroethylene	17.3	1.0	µg/L	20.0		86	70-130			
trans-1,2-Dichloroethylene	18.5	1.0	µg/L	20.1		92	70-130			
Dichloromethane	18.6	3.0	µg/L	20.1		93	70-130			
Ethylbenzene	20.5	1.0	µg/L	20.0		102	70-130			
Isopropylbenzene (Cumene)	23.0	1.0	µg/L	20.0		115	70-130			
Methyl tert-butyl ether	17.8	1.0	µg/L	17.2		103	70-130			
n-Propylbenzene	19.2	1.0	µg/L	20.0		96	70-130			
Styrene	18.4	1.0	µg/L	20.0		92	70-130			
Tetrachloroethylene	27.9	1.0	µg/L	20.1		139	70-130			SPK
Toluene	20.1	1.0	µg/L	20.0		100	70-130			
1,1,1-Trichloroethane	21.7	1.0	µg/L	20.1		108	70-130			
Trichloroethylene	21.5	1.0	µg/L	20.1		107	70-130			
1,3,5-Trimethylbenzene	21.0	1.0	µg/L	20.0		105	70-130			
Vinyl chloride	16.1	1.0	µg/L	20.0		80	60-140			
Xylenes (total)	59.0	2.0	µg/L	60.0		98	70-130			
Surrogate: Toluene-d8	*26.1*		*µg/L*	24.6		*106*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*27.3*		*µg/L*	25.0		*109*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*29.1*		*µg/L*	25.0		*116*	*70-130*			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8030689
PROJECT	SOL040704.01	**REPORTED**	2018-03-13 17:09

QC Qualifiers:

S02	Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.
SPK	The recovery of this analyte was outside of established control limits.
SPK1	The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

CARO.ca **1-888-311-8846**

#110-4011 Viking Way, Richmond, BC V6V 2K9
#102-3677 Highway 97N, Kelowna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7

8030689 S

Caring About Results, Obviously.

CARO BC COC, Rev 2017-05

CHAIN OF CUSTODY RECORD

COC# B 60695 PAGE 1 OF 1

RELINQUISHED BY:	DATE: 8-3-18	RECEIVED BY:	DATE: 18/18
Graham Marshall	TIME: 11h47	RAV WI	TIME: 15

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☑
Other* ____
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Show on Report ☐
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☐ IW ☐ LW ☐ DW ☐
CCME: ____ OTHER: ____

REPORT TO:
COMPANY: Alexi Environmental
ADDRESS: ____
CONTACT: Graham Marshall Amanda Mansour Paul
TEL/FAX: ____
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☑ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: amansourpaul@
EMAIL 2: csteele@
EMAIL 3: glaing@

INVOICE TO: SAME AS REPORT TO ☑
COMPANY: ____
ADDRESS: ____
CONTACT: Graham Marshall
TEL/FAX: ____
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@
EMAIL 2: ____
EMAIL 3: ____
PO #: ____

PROJECT NUMBER / INFO: SOL040704.01

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: ☐

SAMPLED BY: AM

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE YYYY-MM-DD	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)	BTEX ☑ VPH ☐ PHC F1 ☐	VOC ☑ VPH ☑	EPH ☐ PHC F2-F4 ☐	PAH ☑ L/HEPH ☑	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL Hg ☐	METALS - WATER DISSOLVED Hg ☐	METALS - SOIL (SALM) ☐ inc. pH ☐	pH ☐ EC ☐ ALK ☐	TSS ☐ VSS ☐ TDS ☐	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ E. coli ☐	ASBESTOS	Metals, dissolved (no Hg needed)	Glycols						HOLD	POSSIBLE SAMPLE HAZARD CODE(S)
BH 110		✓				2-18-03-03	1-4:30		✓	✓		✓	✓		✓															✓	✓							
BH 160		✓				"	"					✓	✓		✓															✓							

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply): ____

*** OTHER INSTRUCTIONS:**
Full PCOC list will be emailed to Bryan Shaw.

If you would like to talk to a real live Scientist about your project requirements, please check here: ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 6.3 ICE: Y ☐ N ☐
COOLER 2 (°C): ____ ICE: Y ☐ N ☐
COOLER 3 (°C): ____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CERTIFICATE OF ANALYSIS

REPORTED TO	Next Environmental Inc 215 - 2550 Boundary Road Burnaby, BC V5M 3Z3		
ATTENTION	Chris Steele	**WORK ORDER**	8041535
PO NUMBER		**RECEIVED / TEMP**	2018-04-18 14:45 / 13°C
PROJECT	SOL040704.01	**REPORTED**	2018-06-08 14:04
PROJECT INFO		**COC NUMBER**	B62617

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

Work Order Comments:

This is a revised report; please refer to Appendix 3 for details.

If you have any questions or concerns, please contact me at bshaw@caro.ca

Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Client Service Coordinator

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8041535
PROJECT	SOL040704.01	**REPORTED**	2018-06-08 14:04

Analyte	Result	RL	Units	Analyzed	Qualifier
BH110 (8041535-01) | Matrix: Water | Sampled: 2018-04-18 09:00					
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	**5220**	100	µg/L	2018-04-21	
VPHw	**1960**	1000	µg/L	N/A	
Volatile Organic Compounds (VOC)					
Benzene	**243**	0.5	µg/L	2018-04-21	
1,3-Butadiene	< 2.4	1.0	µg/L	2018-04-21	RA1
n-Butylbenzene	< 1.0	1.0	µg/L	2018-04-21	
sec-Butylbenzene	< 1.2	1.0	µg/L	2018-04-21	RA1
tert-Butylbenzene	< 1.0	1.0	µg/L	2018-04-21	
n-Decane	< 2.0	2.0	µg/L	2018-04-21	
1,2-Dibromoethane	< 0.3	0.3	µg/L	2018-04-21	
1,2-Dichloroethane	**343**	1.0	µg/L	2018-04-21	
Ethylbenzene	**1430**	1.0	µg/L	2018-04-21	
n-Hexane	< 28.2	2.0	µg/L	2018-04-21	RA1
Isopropylbenzene (Cumene)	**63.0**	1.0	µg/L	2018-04-21	
Methyl cyclohexane	< 23.0	1.0	µg/L	2018-04-21	CST2
Methyl tert-butyl ether	< 4.3	1.0	µg/L	2018-04-21	RA1
Naphthalene	< 5.0	5.0	µg/L	2018-04-21	
n-Propylbenzene	< 51.3	1.0	µg/L	2018-04-21	CST2
Styrene	< 1.0	1.0	µg/L	2018-04-21	
Toluene	**201**	1.0	µg/L	2018-04-21	
1,2,4-Trimethylbenzene	**480**	1.0	µg/L	2018-04-21	
1,3,5-Trimethylbenzene	**179**	1.0	µg/L	2018-04-21	
Vinyl chloride	< 1.0	1.0	µg/L	2018-04-21	
Xylenes (total)	**1380**	2.0	µg/L	2018-04-21	
Surrogate: Toluene-d8	*88*	*70-130*	%	*2018-04-21*	
Surrogate: 4-Bromofluorobenzene	*100*	*70-130*	%	*2018-04-21*	
Surrogate: 1,4-Dichlorobenzene-d4	*87*	*70-130*	%	*2018-04-21*	

Sample Qualifiers:

CST2 The reporting limit for this analyte has been raised.

RA1 The Reporting Limit has been raised due to matrix interference.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8041535
PROJECT	SOL040704.01	**REPORTED**	2018-06-08 14:04

Analysis Description	Method Ref.	Technique	Location
VH in Water	EPA 5030B / BCMOE VHw	Purge&Trap / Gas Chromatography (GC-FID)	Richmond
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	Richmond
VPHw in Water	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)	N/A

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
µg/L	Micrograms per litre
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8041535
PROJECT	SOL040704.01	**REPORTED**	2018-06-08 14:04

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
BCMOE Aggregate Hydrocarbons, Batch B8D1322										
Blank (B8D1322-BLK1)				Prepared: 2018-04-21, Analyzed: 2018-04-21						
VHw (6-10)	< 100	100	µg/L							
LCS (B8D1322-BS2)				Prepared: 2018-04-21, Analyzed: 2018-04-21						
VHw (6-10)	2690	100	µg/L	3300		82	70-130			
Volatile Organic Compounds (VOC), Batch B8D1322										
Blank (B8D1322-BLK1)				Prepared: 2018-04-21, Analyzed: 2018-04-21						
Benzene	< 0.5	0.5	µg/L							
1,3-Butadiene	< 1.0	1.0	µg/L							
n-Butylbenzene	< 1.0	1.0	µg/L							
sec-Butylbenzene	< 1.0	1.0	µg/L							
tert-Butylbenzene	< 1.0	1.0	µg/L							
n-Decane	< 2.0	2.0	µg/L							
1,2-Dibromoethane	< 0.3	0.3	µg/L							
1,2-Dichloroethane	< 1.0	1.0	µg/L							
Ethylbenzene	< 1.0	1.0	µg/L							
n-Hexane	< 2.0	2.0	µg/L							
Isopropylbenzene (Cumene)	< 1.0	1.0	µg/L							
Methyl cyclohexane	< 1.0	1.0	µg/L							
Methyl tert-butyl ether	< 1.0	1.0	µg/L							
Naphthalene	< 5.0	5.0	µg/L							
n-Propylbenzene	< 1.0	1.0	µg/L							
Styrene	< 1.0	1.0	µg/L							
Toluene	< 1.0	1.0	µg/L							
1,2,4-Trimethylbenzene	< 1.0	1.0	µg/L							
1,3,5-Trimethylbenzene	< 1.0	1.0	µg/L							
Vinyl chloride	< 1.0	1.0	µg/L							
Xylenes (total)	< 2.0	2.0	µg/L							
Surrogate: Toluene-d8	*22.2*		*µg/L*	24.6		*90*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*22.3*		*µg/L*	25.0		*89*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*21.5*		*µg/L*	25.0		*86*	*70-130*			
LCS (B8D1322-BS1)				Prepared: 2018-04-20, Analyzed: 2018-04-20						
Benzene	21.0	0.5	µg/L	20.0		105	70-130			

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8041535
PROJECT	SOL040704.01	**REPORTED**	2018-06-08 14:04

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8D1322, Continued										
LCS (B8D1322-BS1), Continued				Prepared: 2018-04-20, Analyzed: 2018-04-20						
1,3-Butadiene	43.7	1.0	µg/L	20.1		218	60-140			SPK
n-Butylbenzene	22.5	1.0	µg/L	20.0		113	70-130			
sec-Butylbenzene	25.8	1.0	µg/L	20.0		129	70-130			
tert-Butylbenzene	24.7	1.0	µg/L	20.0		124	70-130			
n-Decane	15.4	2.0	µg/L	19.8		78	60-140			
1,2-Dibromoethane	20.5	0.3	µg/L	20.0		103	70-130			
1,2-Dichloroethane	20.4	1.0	µg/L	20.2		101	70-130			
Ethylbenzene	20.8	1.0	µg/L	20.0		104	70-130			
n-Hexane	22.6	2.0	µg/L	19.9		113	60-140			
Isopropylbenzene (Cumene)	23.0	1.0	µg/L	20.0		115	70-130			
Methyl cyclohexane	23.7	1.0	µg/L	19.9		119	70-130			
Methyl tert-butyl ether	24.5	1.0	µg/L	20.0		123	70-130			
Naphthalene	27.8	5.0	µg/L	20.0		139	60-130			SPK
n-Propylbenzene	24.6	1.0	µg/L	20.0		123	70-130			
Styrene	19.4	1.0	µg/L	20.0		97	70-130			
Toluene	22.7	1.0	µg/L	20.0		113	70-130			
1,2,4-Trimethylbenzene	24.3	1.0	µg/L	20.0		121	70-130			
1,3,5-Trimethylbenzene	23.9	1.0	µg/L	20.0		120	70-130			
Vinyl chloride	25.4	1.0	µg/L	20.0		127	60-140			
Xylenes (total)	63.4	2.0	µg/L	60.0		106	70-130			
Surrogate: Toluene-d8	*21.0*		*µg/L*	24.6		*85*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.1*		*µg/L*	25.0		*97*	*70-130*			
Surrogate: 1,4-Dichlorobenzene-d4	*23.2*		*µg/L*	25.0		*93*	*70-130*			

QC Qualifiers:

SPK	The recovery of this analyte was outside of established control limits.
SPK1	The recovery of this analyte was outside of established control limits. The data was accepted based on performance of other batch QC.

APPENDIX 3: REVISION HISTORY

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8041535
PROJECT	SOL040704.01	**REPORTED**	2018-06-08 14:04

Sample ID	Changed	Change	Analysis	Analyte(s)
8041535-01	2018-06-08	Added	VOC/VH/VPH Pkg	
8041535-01	2018-06-08	Result Revised	Volatile Organic Compounds	1,2,4-Trimethylbenzene, 1,2-Dibromoethane, 1,2-Dichloroethane, 1,3,5-Trimethylbenzene, Benzene, Ethylbenzene, m,p-Xylene, o-Xylene, Toluene, Xylenes (total)

CARO.ca 1-888-311-8846

#110-4011 Viking Way, Richmond, BC V6V 2K9
#102-3677 Highway 97N, Kelowna, BC V1X 5C3
17225 109 Avenue NW, Edmonton, AB T5S 1H7

* 8 0 4 1 5 3 5 *

CARO BC COC, Rev 2017-0

CHAIN OF CUSTODY RECORD COC# B 62617 PAGE 1 OF

RELINQUISHED BY:	DATE:	RECEIVED BY:	DATE:
Phil Zylka	Apr 18	ROB FLASH	4/18/
	TIME: 10:07		TIME: 1443

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☑
Other* ____
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Show on Report ☐
Canadian Drinking Water Quality ☐ BC WQG ☐ BC HWR ☐
BC CSR Soil: WL ☐ AL ☐ PL ☐ RL-LD ☐ RL-HD ☐ CL ☐ IL ☐
BC CSR Water: AW ☒ IW ☐ LW ☐ DW ☒
CCME: ____ OTHER: ____

PROJECT NUMBER / INFO: SOL40704.01

A: Biohazard B: Cyanide C: PCBs D: Asbestos E: Heavy Metals F: Flammable G: Strong Odour H: High Contamination I: Other (please specify*)

REPORT TO:
COMPANY: Next Environmental
ADDRESS: ~~PO~~ 215-2550 Boundary Rd Burnaby, BC V5M 3Z3
CONTACT: Chris Steele
TEL/FAX: 778-988-7821
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☐ WATERTRAX ☐ ESdat ☐ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: csteele@nextenvironmental.com
EMAIL 2: pzylka@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☑
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☑ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2:
EMAIL 3:
PO #: SOL040704.01

** If you would like to sign up for ClientConnect and/or Envirochain, CARO's online service offerings, please check here: ☐

SAMPLED BY: PZ

ANALYSES REQUESTED:

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE YYYY-MM-DD	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)	BTEX ☐ VPH ☐ PHC F1 ☐	VOC ☐ VPH ☐	EPH ☐ PHC F2-F4 ☐	PAH ☐ L/HEPH ☐	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL Hg ☐	METALS - WATER DISSOLVED Hg ☐	METALS - SOIL (SALM) ☐ inc. pH ☐	pH ☐ EC ☐ ALK ☐	TSS ☐ VSS ☐ TDS ☐	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ E. coli ☐	ASBESTOS	1,2-Dichloroethane	HOLD	POSSIBLE SAMPLE HAZARD CODE(S)
BH10					1	2018-04-18	9:00am			✓	NaHSO4 preserve	✓																	✓		

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION:
30 Days (default) ☐
60 Days ☐ 90 Days ☐
Other (surcharges will apply):

*** OTHER INSTRUCTIONS:**

If you would like to talk to a real live Scientist about your project requirements, please check here: ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 13 ICE: Y ☑ N ☐
COOLER 2 (°C): ____ ICE: Y ☐ N ☐
COOLER 3 (°C): ____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CERTIFICATE OF ANALYSIS

REPORTED TO	Next Environmental Inc 215 - 2550 Boundary Road Burnaby, BC V5M 3Z3		
ATTENTION	Chris Steele	**WORK ORDER**	8051610
PO NUMBER		**RECEIVED / TEMP**	2018-05-16 16:45 / 15°C
PROJECT	SOL040704.02	**REPORTED**	2018-05-22 21:08
PROJECT INFO			

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at bshaw@caro.ca

Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Client Service Coordinator

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051610
PROJECT	SOL040704.02	**REPORTED**	2018-05-22 21:08

Analyte	Result	RL	Units	Analyzed	Qualifier
BH201 (8051610-01) | Matrix: Water | Sampled: 2018-05-15 14:06					
BCMOE Aggregate Hydrocarbons					
VHw (6-10)	< 100	100	µg/L	2018-05-22	
VPHw	< 100	100	µg/L	N/A	
Volatile Organic Compounds (VOC)					
Benzene	< 0.5	0.5	µg/L	2018-05-22	
Ethylbenzene	< 1.0	1.0	µg/L	2018-05-22	
Methyl tert-butyl ether	< 1.0	1.0	µg/L	2018-05-22	
Styrene	< 1.0	1.0	µg/L	2018-05-22	
Toluene	< 1.0	1.0	µg/L	2018-05-22	
Xylenes (total)	< 2.0	2.0	µg/L	2018-05-22	
Surrogate: Toluene-d8	*69*	*70-130*	%	*2018-05-22*	S02
Surrogate: 4-Bromofluorobenzene	*78*	*70-130*	%	*2018-05-22*	

Sample Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051610
PROJECT	SOL040704.02	**REPORTED**	2018-05-22 21:08

Analysis Description	Method Ref.	Technique	Location
BTEX in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	Richmond
VH in Water	EPA 5030B / BCMOE VHw	Purge&Trap / Gas Chromatography (GC-FID)	Richmond
VPHw in Water	BCMOE VPH	Calculation: VH - (Benzene + Toluene + Ethylbenzene + Xylenes + Styrene)	N/A

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
µg/L	Micrograms per litre
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051610
PROJECT	SOL040704.02	**REPORTED**	2018-05-22 21:08

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
BCMOE Aggregate Hydrocarbons, Batch B8E1601										
Blank (B8E1601-BLK1)				Prepared: 2018-05-21, Analyzed: 2018-05-21						
VHw (6-10)	< 100	100	µg/L							
LCS (B8E1601-BS2)				Prepared: 2018-05-22, Analyzed: 2018-05-22						
VHw (6-10)	3280	100	µg/L	3280		100	70-130			
Volatile Organic Compounds (VOC), Batch B8E1601										
Blank (B8E1601-BLK1)				Prepared: 2018-05-21, Analyzed: 2018-05-21						
Benzene	< 0.5	0.5	µg/L							
Ethylbenzene	< 1.0	1.0	µg/L							
Methyl tert-butyl ether	< 1.0	1.0	µg/L							
Styrene	< 1.0	1.0	µg/L							
Toluene	< 1.0	1.0	µg/L							
Xylenes (total)	< 2.0	2.0	µg/L							
Surrogate: Toluene-d8	*17.9*		*µg/L*	26.2		*68*	*70-130*			*S02*
Surrogate: 4-Bromofluorobenzene	*18.4*		*µg/L*	25.0		*74*	*70-130*			
LCS (B8E1601-BS1)				Prepared: 2018-05-21, Analyzed: 2018-05-21						
Benzene	17.9	0.5	µg/L	20.0		89	70-130			
Ethylbenzene	14.1	1.0	µg/L	20.0		71	70-130			
Methyl tert-butyl ether	17.2	1.0	µg/L	20.0		86	70-130			
Styrene	14.4	1.0	µg/L	20.0		72	70-130			
Toluene	19.3	1.0	µg/L	20.0		97	70-130			
Xylenes (total)	43.7	2.0	µg/L	60.0		73	70-130			
Surrogate: Toluene-d8	*17.5*		*µg/L*	26.2		*67*	*70-130*			*S02*
Surrogate: 4-Bromofluorobenzene	*19.8*		*µg/L*	25.0		*79*	*70-130*			

QC Qualifiers:

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.

CARO ANALYTICAL SERVICES
Caring About Results... Obviously

☒ 110-4 Tel: (6
☐ 102-3 Tel: (2
☐ 17225 Tel: (7

80516108

CARO BC COC, Rev 201

CHAIN OF CUSTODY RECORD

COC# _____ PAGE 1 OF

RELINQUISHED BY:	DATE: 15may18	RECEIVED BY:	DATE: 5/15
Judah Chen	TIME: 16:35		TIME: 1647

PROJECT: SOL040704.02

PROJECT INFO:

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215, Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 3 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

SAMPLED BY: JC

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD-MMM-YY	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)
BH201		X			2	15may18	14:06				
BH251		X			2	↓	↓				
BH201-1		X			2	↓	↓				

ANALYSES REQUESTED:

BTEX ☐ VPH ☐ PHC F1 ☐	VOC ☐ VPH ☐	EPH ☐ PHC F2-F4 ☐	PAH ☐ L/HEPH ☐	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL Hg ☐	METALS - WATER DISSOLVED Hg ☐	METALS - SOIL (SALM) ☐ inc. pH ☐	pH ☐ EC ☐ ALK ☐	TSS ☐ VSS ☐ TDS ☐	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ E. coli ☐	ASBESTOS	HOLD
																	✓
																	✓
																	✓

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply): _____
* OTHER INSTRUCTIONS:

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 14.5 ICE: Y ☐ N ☐
COOLER 2 (°C): _____ ICE: Y ☐ N ☐
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CERTIFICATE OF ANALYSIS

REPORTED TO	Next Environmental Inc 215 - 2550 Boundary Road Burnaby, BC V5M 3Z3		
ATTENTION	Judah Chen	**WORK ORDER**	8051564
PO NUMBER		**RECEIVED / TEMP**	2018-05-15 16:45 / 15°C
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 11:10
PROJECT INFO			

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at bshaw@caro.ca

Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Client Service Coordinator

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051564
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 11:10

Analyte	Result	RL	Units	Analyzed	Qualifier
BH205V (8051564-02) | Matrix: Air | Sampled: 2018-05-14 14:00					
Sampling Flow: 154 mL/min	Sampling Time: 26 min				
Volatile Organic Compounds (VOC)					
Benzene	**3.6**	0.5	µg/m3	2018-05-17	
1,3-Butadiene	**160**	10	µg/m3	2018-05-17	
Carbon tetrachloride	< 0.25	0.25	µg/m3	2018-05-17	
Chloroethane	< 1.3	1.3	µg/m3	2018-05-17	
n-Decane	**11**	0.75	µg/m3	2018-05-17	
1,2-Dibromoethane	< 0.13	0.13	µg/m3	2018-05-17	
1,2-Dichloroethane	< 0.23	0.23	µg/m3	2018-05-17	RA1
1,1-Dichloroethylene	< 0.25	0.25	µg/m3	2018-05-17	
cis-1,2-Dichloroethylene	< 0.25	0.25	µg/m3	2018-05-17	
trans-1,2-Dichloroethylene	< 0.25	0.25	µg/m3	2018-05-17	
Dichloromethane	< 2.5	2.5	µg/m3	2018-05-17	
Ethylbenzene	< 1.3	1.3	µg/m3	2018-05-17	
n-Hexane	**18**	2.5	µg/m3	2018-05-17	
Isopropylbenzene (Cumene)	< 0.25	0.25	µg/m3	2018-05-17	
Methyl cyclohexane	**8.1**	1.3	µg/m3	2018-05-17	
Methyl tert-butyl ether	< 0.5	0.5	µg/m3	2018-05-17	
Naphthalene	**0.4**	0.25	µg/m3	2018-05-17	
Styrene	< 0.25	0.25	µg/m3	2018-05-17	
Tetrachloroethylene	< 1.3	1.3	µg/m3	2018-05-17	
Toluene	**4.2**	2.5	µg/m3	2018-05-17	
1,1,1-Trichloroethane	< 0.25	0.25	µg/m3	2018-05-17	
Trichloroethylene	< 0.13	0.13	µg/m3	2018-05-17	
1,2,4-Trimethylbenzene	**3.5**	1.3	µg/m3	2018-05-17	
1,3,5-Trimethylbenzene	< 1.3	1.3	µg/m3	2018-05-17	
Vinyl chloride	< 0.5	0.5	µg/m3	2018-05-17	
Xylenes (total)	< 3.8	3.8	µg/m3	2018-05-17	
VHv (6-13)	**1400**	500	µg/m3	2018-05-17	
VPHv	**1300**	500	µg/m3	2018-05-17	
Surrogate: Toluene-d8	*93*	*60-127*	*%*	*2018-05-17*	
BH202V (8051564-03) | Matrix: Air | Sampled: 2018-05-14 14:00					
Sampling Flow: 154 mL/min	Sampling Time: 26 min				
Volatile Organic Compounds (VOC)					
Benzene	**1**	0.5	µg/m3	2018-05-17	
1,3-Butadiene	**5.7**	1	µg/m3	2018-05-17	
Carbon tetrachloride	**0.55**	0.25	µg/m3	2018-05-17	
Chloroethane	< 1.3	1.3	µg/m3	2018-05-17	
n-Decane	**52**	0.75	µg/m3	2018-05-17	
1,2-Dibromoethane	< 0.13	0.13	µg/m3	2018-05-17	
1,2-Dichloroethane	< 0.3	0.3	µg/m3	2018-05-17	RA1

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051564
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 11:10

Analyte	Result	RL	Units	Analyzed	Qualifier
BH202V (8051564-03) | Matrix: Air | Sampled: 2018-05-14 14:00, Continued					
Sampling Flow: 154 mL/min	Sampling Time: 26 min				
Volatile Organic Compounds (VOC), Continued					
1,1-Dichloroethylene	**0.38**	0.25	µg/m3	2018-05-17	
cis-1,2-Dichloroethylene	< 0.25	0.25	µg/m3	2018-05-17	
trans-1,2-Dichloroethylene	< 0.25	0.25	µg/m3	2018-05-17	
Dichloromethane	< 2.5	2.5	µg/m3	2018-05-17	
Ethylbenzene	**210**	13	µg/m3	2018-05-17	
n-Hexane	**400**	25	µg/m3	2018-05-17	
Isopropylbenzene (Cumene)	**49**	0.25	µg/m3	2018-05-17	
Methyl cyclohexane	**180**	13	µg/m3	2018-05-17	
Methyl tert-butyl ether	< 0.5	0.5	µg/m3	2018-05-17	
Naphthalene	**2.4**	0.25	µg/m3	2018-05-17	
Styrene	< 0.25	0.25	µg/m3	2018-05-17	
Tetrachloroethylene	**14**	1.3	µg/m3	2018-05-17	
Toluene	**52**	2.5	µg/m3	2018-05-17	
1,1,1-Trichloroethane	**3.5**	0.25	µg/m3	2018-05-17	
Trichloroethylene	< 0.13	0.13	µg/m3	2018-05-17	
1,2,4-Trimethylbenzene	**770**	130	µg/m3	2018-05-17	
1,3,5-Trimethylbenzene	**480**	13	µg/m3	2018-05-17	
Vinyl chloride	< 0.5	0.5	µg/m3	2018-05-17	
Xylenes (total)	**1900**	38	µg/m3	2018-05-17	
VHv (6-13)	**17000**	500	µg/m3	2018-05-17	
VPHv	**14000**	500	µg/m3	2018-05-17	
Surrogate: Toluene-d8	*96*	*60-127*	%	*2018-05-17*	
BH204V (8051564-04) | Matrix: Air | Sampled: 2018-05-14 14:00					
Sampling Flow: 154 mL/min	Sampling Time: 26 min				
Volatile Organic Compounds (VOC)					
Benzene	**1.5**	0.5	µg/m3	2018-05-17	
1,3-Butadiene	**5.6**	1	µg/m3	2018-05-17	
Carbon tetrachloride	< 0.25	0.25	µg/m3	2018-05-17	
Chloroethane	< 1.3	1.3	µg/m3	2018-05-17	
n-Decane	**12**	0.75	µg/m3	2018-05-17	
1,2-Dibromoethane	< 0.13	0.13	µg/m3	2018-05-17	
1,2-Dichloroethane	< 0.15	0.15	µg/m3	2018-05-17	
1,1-Dichloroethylene	**110**	2.5	µg/m3	2018-05-17	
cis-1,2-Dichloroethylene	< 0.25	0.25	µg/m3	2018-05-17	
trans-1,2-Dichloroethylene	< 0.25	0.25	µg/m3	2018-05-17	
Dichloromethane	< 2.5	2.5	µg/m3	2018-05-17	
Ethylbenzene	< 1.3	1.3	µg/m3	2018-05-17	
n-Hexane	**37**	2.5	µg/m3	2018-05-17	
Isopropylbenzene (Cumene)	**0.43**	0.25	µg/m3	2018-05-17	

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051564
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 11:10

Analyte	Result	RL	Units	Analyzed	Qualifier
BH204V (8051564-04) | Matrix: Air | Sampled: 2018-05-14 14:00, Continued					
Sampling Flow: 154 mL/min	Sampling Time: 26 min				
Volatile Organic Compounds (VOC), Continued					
Methyl cyclohexane	**2.9**	1.3	µg/m3	2018-05-17	
Methyl tert-butyl ether	< 0.5	0.5	µg/m3	2018-05-17	
Naphthalene	**0.4**	0.25	µg/m3	2018-05-17	
Styrene	< 0.25	0.25	µg/m3	2018-05-17	
Tetrachloroethylene	< 1.3	1.3	µg/m3	2018-05-17	
Toluene	**7.2**	2.5	µg/m3	2018-05-17	
1,1,1-Trichloroethane	**91**	2.5	µg/m3	2018-05-17	
Trichloroethylene	< 0.13	0.13	µg/m3	2018-05-17	
1,2,4-Trimethylbenzene	**6.7**	1.3	µg/m3	2018-05-17	
1,3,5-Trimethylbenzene	**2.6**	1.3	µg/m3	2018-05-17	
Vinyl chloride	< 0.5	0.5	µg/m3	2018-05-17	
Xylenes (total)	**9.6**	3.8	µg/m3	2018-05-17	
VHv (6-13)	**1100**	500	µg/m3	2018-05-17	
VPHv	**1100**	500	µg/m3	2018-05-17	
Surrogate: Toluene-d8	*82*	*60-127*	%	*2018-05-17*	

Sample Qualifiers:

RA1 The Reporting Limit has been raised due to matrix interference.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051564
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 11:10

Analysis Description	Method Ref.	Technique	Location
VOC/VH/VPH in Air	EPA TO-17 (1999)	Thermal Desorption (TD) GC-MSD	Richmond

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
µg	Micrograms
EPA	United States Environmental Protection Agency Test Methods

Volatiles in Vapour by Thermal Desorption Comments:

If the sampling pump flow rate and sampling duration are available, results are converted from a weight basis (µg) to a weight per volume basis (µg/m3). In the event of a discrepancy between the lab-calibrated flow rate and field flow rate, the field flow rate will be used, unless indicated otherwise. Inaccurate sampling information could cause a significant bias in the results.

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051564
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 11:10

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

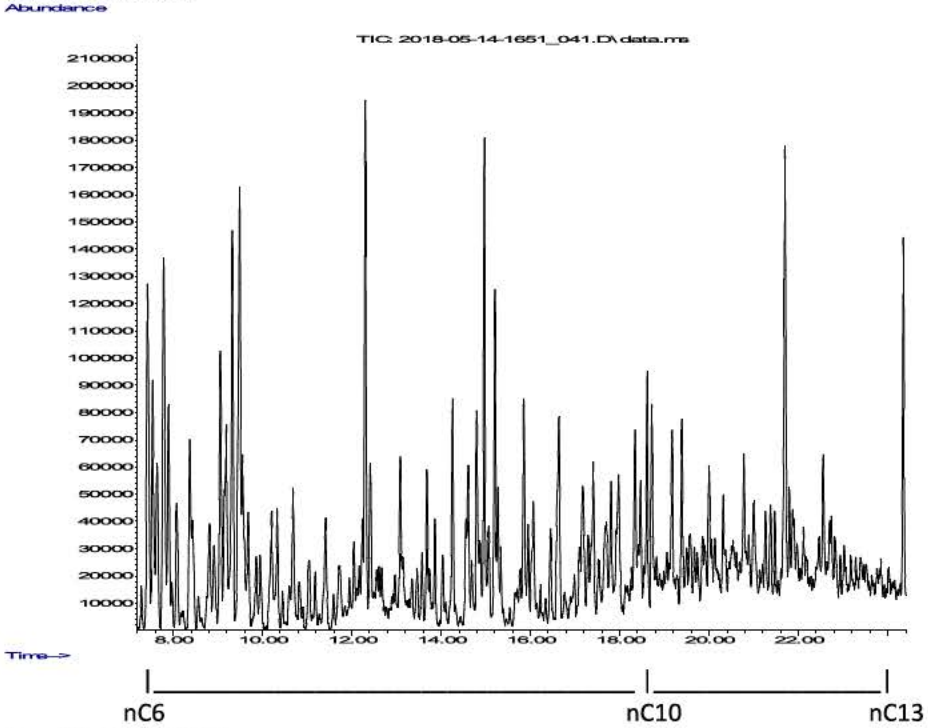
Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8E1129										
Blank (B8E1129-BLK1)				Prepared: 2018-05-14, Analyzed: 2018-05-14						
Benzene	< 0.0020	0.0020	µg							
1,3-Butadiene	< 0.0040	0.0040	µg							
Carbon tetrachloride	< 0.0010	0.0010	µg							
Chloroethane	< 0.0050	0.0050	µg							
n-Decane	< 0.0030	0.0030	µg							
1,2-Dibromoethane	< 0.0005	0.0005	µg							
1,2-Dichloroethane	< 0.0006	0.0006	µg							
1,1-Dichloroethylene	< 0.0010	0.0010	µg							
cis-1,2-Dichloroethylene	< 0.0010	0.0010	µg							
trans-1,2-Dichloroethylene	< 0.0010	0.0010	µg							
Dichloromethane	< 0.0100	0.0100	µg							
Ethylbenzene	< 0.0050	0.0050	µg							
n-Hexane	< 0.0100	0.0100	µg							
Isopropylbenzene (Cumene)	< 0.0010	0.0010	µg							
Methyl cyclohexane	< 0.0050	0.0050	µg							
Methyl tert-butyl ether	< 0.0020	0.0020	µg							
Naphthalene	< 0.0010	0.0010	µg							
Styrene	< 0.0010	0.0010	µg							
Tetrachloroethylene	< 0.0050	0.0050	µg							
Toluene	< 0.0100	0.0100	µg							
1,1,1-Trichloroethane	< 0.0010	0.0010	µg							
Trichloroethylene	< 0.0005	0.0005	µg							
1,2,4-Trimethylbenzene	< 0.0050	0.0050	µg							
1,3,5-Trimethylbenzene	< 0.0050	0.0050	µg							
Vinyl chloride	< 0.0020	0.0020	µg							
Xylenes (total)	< 0.0150	0.0150	µg							
VHv (6-13)	< 2.00	2.00	µg							
VPHv	< 2.00	2.00	µg							
Surrogate: Toluene-d8	*0.133*		*µg*	0.125		*106*	*60-127*			
LCS (B8E1129-BS1)				Prepared: 2018-05-14, Analyzed: 2018-05-14						
Benzene	0.0522	0.0020	µg	0.0500		104	60-140			
1,3-Butadiene	0.0482	0.0040	µg	0.0500		96	60-140			
Carbon tetrachloride	0.0557	0.0010	µg	0.0500		111	60-140			
Chloroethane	0.0550	0.0050	µg	0.0500		110	60-140			

APPENDIX 2: QUALITY CONTROL RESULTS

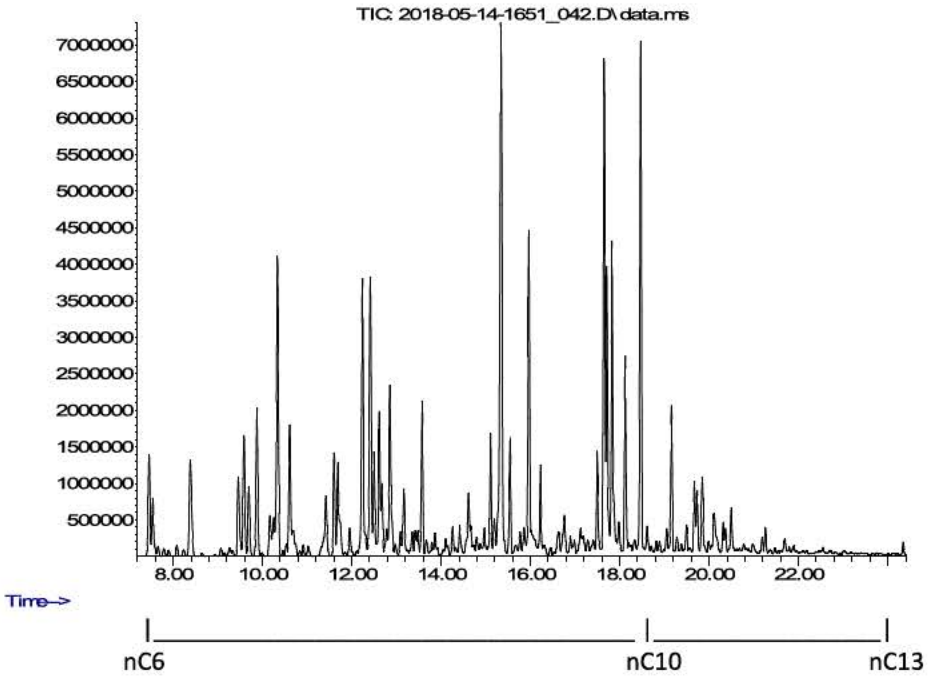
REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051564
PROJECT	SOL040704.02	**REPORTED**	2018-05-23 11:10

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8E1129, Continued										
LCS (B8E1129-BS1), Continued				Prepared: 2018-05-14, Analyzed: 2018-05-14						
n-Decane	0.0561	0.0030	µg	0.0495		113	60-140			
1,2-Dibromoethane	0.0545	0.0005	µg	0.0500		109	60-140			
1,2-Dichloroethane	0.0605	0.0006	µg	0.0505		120	60-140			
1,1-Dichloroethylene	0.0520	0.0010	µg	0.0500		104	60-140			
cis-1,2-Dichloroethylene	0.0545	0.0010	µg	0.0500		109	60-140			
trans-1,2-Dichloroethylene	0.0527	0.0010	µg	0.0500		105	60-140			
Dichloromethane	0.0516	0.0100	µg	0.0500		103	60-140			
Ethylbenzene	0.0590	0.0050	µg	0.0500		118	60-140			
n-Hexane	0.0562	0.0100	µg	0.0498		113	60-140			
Isopropylbenzene (Cumene)	0.0561	0.0010	µg	0.0500		112	60-140			
Methyl cyclohexane	0.0541	0.0050	µg	0.0498		109	60-140			
Methyl tert-butyl ether	0.0474	0.0020	µg	0.0500		95	60-140			
Naphthalene	0.0508	0.0010	µg	0.0500		102	60-140			
Styrene	0.0506	0.0010	µg	0.0500		101	60-140			
Tetrachloroethylene	0.0526	0.0050	µg	0.0500		105	60-140			
Toluene	0.0541	0.0100	µg	0.0500		108	60-140			
1,1,1-Trichloroethane	0.0582	0.0010	µg	0.0500		116	60-140			
Trichloroethylene	0.0526	0.0005	µg	0.0500		105	60-140			
1,2,4-Trimethylbenzene	0.0576	0.0050	µg	0.0500		115	60-140			
1,3,5-Trimethylbenzene	0.0560	0.0050	µg	0.0500		112	60-140			
Vinyl chloride	0.0560	0.0020	µg	0.0500		112	60-140			
Xylenes (total)	0.165	0.0150	µg	0.150		110	60-140			
LCS (B8E1129-BS2)				Prepared: 2018-05-14, Analyzed: 2018-05-14						
VHv (6-13)	11.3	2.00	µg	10.0		113	70-130			
LCS Dup (B8E1129-BSD1)				Prepared: 2018-05-15, Analyzed: 2018-05-15						
Benzene	0.0565	0.0020	µg	0.0500		113	60-140	8	30	
1,3-Butadiene	0.0513	0.0040	µg	0.0500		103	60-140	6	30	
Carbon tetrachloride	0.0551	0.0010	µg	0.0500		110	60-140	1	30	
Chloroethane	0.0558	0.0050	µg	0.0500		112	60-140	1	30	
n-Decane	0.0595	0.0030	µg	0.0495		120	60-140	6	30	
1,2-Dibromoethane	0.0547	0.0005	µg	0.0500		109	60-140	< 1	30	
1,2-Dichloroethane	0.0612	0.0006	µg	0.0505		121	60-140	1	30	
1,1-Dichloroethylene	0.0550	0.0010	µg	0.0500		110	60-140	6	30	
cis-1,2-Dichloroethylene	0.0562	0.0010	µg	0.0500		112	60-140	3	30	
trans-1,2-Dichloroethylene	0.0548	0.0010	µg	0.0500		110	60-140	4	30	
Dichloromethane	0.0562	0.0100	µg	0.0500		112	60-140	8	30	
Ethylbenzene	0.0565	0.0050	µg	0.0500		113	60-140	4	30	
n-Hexane	0.0582	0.0100	µg	0.0498		117	60-140	4	30	
Isopropylbenzene (Cumene)	0.0594	0.0010	µg	0.0500		119	60-140	6	30	
Methyl cyclohexane	0.0549	0.0050	µg	0.0498		110	60-140	1	30	
Methyl tert-butyl ether	0.0409	0.0020	µg	0.0500		82	60-140	15	30	
Naphthalene	0.0554	0.0010	µg	0.0500		111	60-140	9	30	
Styrene	0.0481	0.0010	µg	0.0500		96	60-140	5	30	
Tetrachloroethylene	0.0559	0.0050	µg	0.0500		112	60-140	6	30	
Toluene	0.0554	0.0100	µg	0.0500		111	60-140	2	30	
1,1,1-Trichloroethane	0.0581	0.0010	µg	0.0500		116	60-140	< 1	30	
Trichloroethylene	0.0540	0.0005	µg	0.0500		108	60-140	3	30	
1,2,4-Trimethylbenzene	0.0617	0.0050	µg	0.0500		123	60-140	7	30	
1,3,5-Trimethylbenzene	0.0607	0.0050	µg	0.0500		121	60-140	8	30	
Vinyl chloride	0.0508	0.0020	µg	0.0500		102	60-140	10	30	
Xylenes (total)	0.185	0.0150	µg	0.150		123	60-140	12	30	

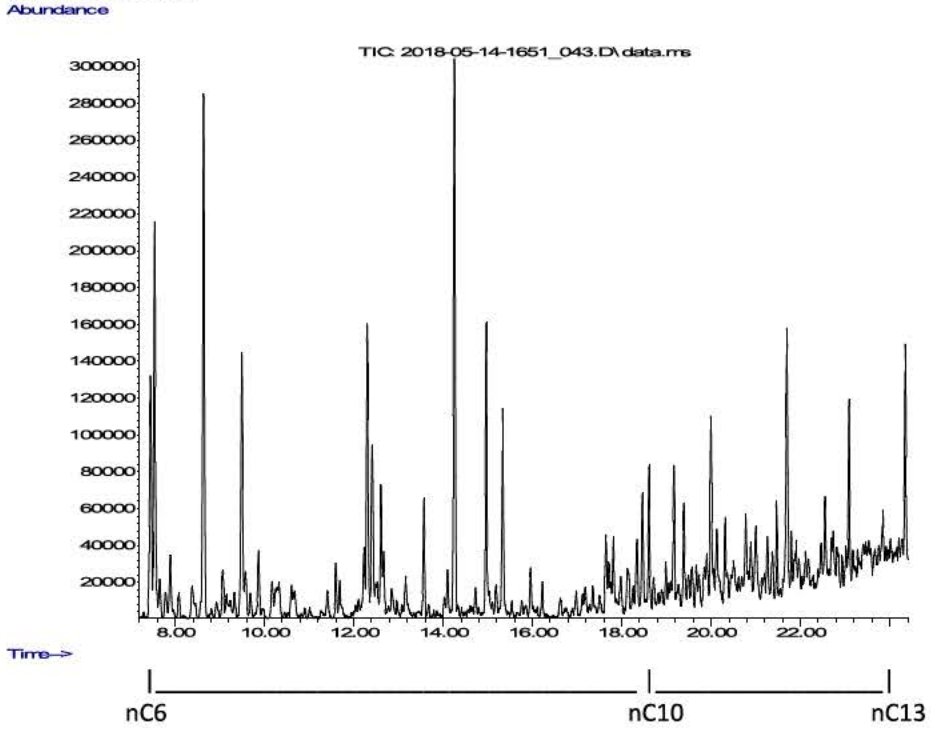
Caro ID: 8051564-02
Client ID: BH205V



Caro ID: 8051564-03
Client ID: BH202V



Caro ID: 8051564-04
Client ID: BH204V



CARO ANALYTICAL SERVICES
Caring About Results... Obviously

☒ 110-40 Tel: (60
☐ 102-36 Tel: (25
☐ 17225 1 Tel: (78

8051564

CARO BC COC, Rev 2015

CHAIN OF CUSTODY RECORD

COC# _____ PAGE 1 OF 1

RELINQUISHED BY:	DATE: 15 may 18	RECEIVED BY:	DATE:
Judah Chen	TIME: 4:35pm		TIME:

PROJECT: SOL040704.02

PROJECT INFO:

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 2550 Boundary Road, Unit 215
Burnaby, BC V5M 3Z3
CONTACT: Judah Chen
TEL/FAX: 778.838.9490
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: jchen@nextenvironmental.com
EMAIL 2: csteele@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☒
COMPANY:
ADDRESS:
CONTACT:
TEL/FAX:
DELIVERY METHOD: EMAIL ☐ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2: jchen@nextenvironmental.com
EMAIL 3:
PO #:

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☐
Other* Regular 3 Day TAT
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION: Regs on Report? ☐
Canadian Drinking Water Quality Guidelines ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☒ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

SAMPLED BY: JC

	CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD-MMM-YY	TIME HH:MM	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)
1	BH206v				X	1	14 may 18	14:00				154 mL/min for 26 min
2	~~BH205v~~ BH205V				X	1	"	"				"
3	BH202v				X	1						
4	BH204v				X	1						
5	BH256v				X	1	15 may 18	14:00				
6	BH206vn				X	1	"	"				"

ANALYSES REQUESTED:

	BTEX ☐ VPH ☐ PHC F1 ☐	VOC ☐ VPH ☐	EPH ☐ PHC F2-F4 ☐	PAH ☐ L/HEPH ☐	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL Hg ☐	METALS - WATER DISSOLVED Hg ☐	METALS - SOIL (SALM) ☐ inc. pH ☐	pH ☐ EC ☐ ALK ☐	TSS ☐ VSS ☐ TDS ☐	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ *E.coli* ☐	ASBESTOS	HOLD
1																		X
2																		X
3																		X
4																		X
5																		X
6																		X

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply): _____
*** OTHER INSTRUCTIONS:**

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 14.5 ICE: Y ☒ N ☐
COOLER 2 (°C): _____ ICE: Y ☐ N ☐
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO ANALYTICAL SERVICES

AIR SAMPLING FIELD TEST DATA SHEET & EQUIPMENT RENTAL FORM

1. **Client Information**

Client: NEXT **Date(s) Sampled:** 14 & 15 May 2018

Project: So1040704.02 **Sampled by:** Judah Chen

Details: _____ **COC #** _____

2. **Site Conditions**

Weather: _____ **Temperature (°C):** _____

Humidity: _____ **Pressure:** _____

3. **Regulatory Level (recommended sample volume for ALL land use categories is 2 L):**

☐ **Agricultural / Urban Park / Residential (RL)** ☐ **Commercial (CL)**

☐ **Industrial (IL)** ☐ **Parkade (PK)**

Note: The recommended sample volumes required to achieve BC CSR Schedule 3.3 Generic Numerical Vapour Standards are based on a clean site. If the site is contaminated, the recommended volumes may exceed analytical capabilities to achieve the low reporting limits and as such the reporting limits for certain parameters may be raised. Lower sample volumes are recommended at contaminated sites with high PID and/or Gastech readings; please contact the lab to discuss further.

4. **Sampling Data** (Shaded fields to be completed by CARO staff) Serial # **ORDER #** 5686

Pump ID	Client Sample ID / Location	Location Notes (e.g. Hot site, Tube ID, etc.)	Initial Flow Rate (mL/min) Inlet 1 Tube:	Initial Flow Rate (mL/min) Inlet 2 Tube:	Suggested Sampling Time (mins)	Sampling Period (Time) Start	Sampling Period (Time) Stop	Total Sampling Time (min)	Final Flow Rate (mL/min) Inlet 1	Final Flow Rate (mL/min) Inlet 2
	BH202v	4L of sample	G0154941			average = 154 ml/min		26		
	BH204v	4 L of sample	G0190474							
	BH205v	4L of sample	G0149775							
	BH206v	4L of sample	G0152188							
	BH256v	4L of sample	G0149882							
	BH206vn	4L of sample	G0148989							

Equip. Rented To: JUDAH CHEN Rental Date: 7MAY2018 Returned Date: _____

Initial Calibration by/date: JA 7MAY2018 Final Calibration by/date: _____

Pumps Rented: — Returned: _____ TD Tubes Rented: 7 Returned: 7 Condition: ✓

Chargers Rented: — Returned: _____ Purge Tubes: _____ Returned: _____ Rotameter: _____ COCs: ✓

Tubing Type: NYLAFLOW Butting Tubing: 7 Splitters: _____ Instruction Manual: _____

Comments: _____ Surrogate ID: C7J0508

CERTIFICATE OF ANALYSIS

REPORTED TO	Next Environmental Inc 215 - 2550 Boundary Road Burnaby, BC V5M 3Z3		
ATTENTION	Chris Steele	**WORK ORDER**	8051955
PO NUMBER		**RECEIVED / TEMP**	2018-05-22 14:20 / NA
PROJECT	SOL040704.02	**REPORTED**	2018-05-25 13:08
PROJECT INFO			

Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO 17025:2005 for specific tests listed in the scope of accreditation approved by CALA.

Big Picture Sidekicks

You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

We've Got Chemistry

It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

Ahead of the Curve

Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

If you have any questions or concerns, please contact me at bshaw@caro.ca

Authorized By:

Bryan Shaw, Ph.D., P.Chem.
Client Service Coordinator

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO Next Environmental Inc
PROJECT SOL040704.02

WORK ORDER 8051955
REPORTED 2018-05-25 13:08

Analyte	Result	RL	Units	Analyzed	Qualifier
BH206v-100 (8051955-01) | Matrix: Air | Sampled: 2018-05-22 13:00					
Sampling Flow: 50 mL/min	Sampling Time: 2 min				
Volatile Organic Compounds (VOC)					
Benzene	**5600**	440	µg/m3	2018-05-24	
1,3-Butadiene	< 880	880	µg/m3	2018-05-24	
Carbon tetrachloride	< 220	220	µg/m3	2018-05-24	
Chloroethane	< 1100	1100	µg/m3	2018-05-24	
n-Decane	**1200**	660	µg/m3	2018-05-24	
1,2-Dibromoethane	< 110	110	µg/m3	2018-05-24	
1,2-Dichloroethane	< 1200	1200	µg/m3	2018-05-24	RA1
1,1-Dichloroethylene	< 220	220	µg/m3	2018-05-24	
cis-1,2-Dichloroethylene	< 220	220	µg/m3	2018-05-24	
trans-1,2-Dichloroethylene	< 220	220	µg/m3	2018-05-24	
Dichloromethane	< 2200	2200	µg/m3	2018-05-24	
Ethylbenzene	**21000**	1100	µg/m3	2018-05-24	
n-Hexane	**3000000**	220000	µg/m3	2018-05-24	
Isopropylbenzene (Cumene)	**2100**	220	µg/m3	2018-05-24	
Methyl cyclohexane	**270000**	11000	µg/m3	2018-05-24	
Methyl tert-butyl ether	< 440	440	µg/m3	2018-05-24	
Naphthalene	< 220	220	µg/m3	2018-05-24	
Styrene	< 220	220	µg/m3	2018-05-24	
Tetrachloroethylene	< 1100	1100	µg/m3	2018-05-24	
Toluene	**26000**	2200	µg/m3	2018-05-24	
1,1,1-Trichloroethane	< 220	220	µg/m3	2018-05-24	
Trichloroethylene	< 110	110	µg/m3	2018-05-24	
1,2,4-Trimethylbenzene	**19000**	1100	µg/m3	2018-05-24	
1,3,5-Trimethylbenzene	**25000**	1100	µg/m3	2018-05-24	
Vinyl chloride	< 440	440	µg/m3	2018-05-24	
Xylenes (total)	**180000**	33000	µg/m3	2018-05-24	
VHv (6-13)	**18000000**	4400000	µg/m3	2018-05-24	
VPHv	**15000000**	4400000	µg/m3	2018-05-24	
Surrogate: Toluene-d8	*93*	*60-127*	*%*	*2018-05-24*	
BH206vn-500 (8051955-04) | Matrix: Air | Sampled: 2018-05-11 13:00					
Sampling Flow: 50 mL/min	Sampling Time: 10 min				
Volatile Organic Compounds (VOC)					
Benzene	**13000**	88	µg/m3	2018-05-24	
1,3-Butadiene	< 790	790	µg/m3	2018-05-24	RA1
Carbon tetrachloride	< 44	44	µg/m3	2018-05-24	
Chloroethane	< 220	220	µg/m3	2018-05-24	
n-Decane	**310**	130	µg/m3	2018-05-24	
1,2-Dibromoethane	< 22	22	µg/m3	2018-05-24	
1,2-Dichloroethane	< 340	340	µg/m3	2018-05-24	RA1

CARO ANALYTICAL SERVICES

TEST RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051955
PROJECT	SOL040704.02	**REPORTED**	2018-05-25 13:08

Analyte	Result	RL	Units	Analyzed	Qualifier
BH206vn-500 (8051955-04) | Matrix: Air | Sampled: 2018-05-11 13:00, Continued					
Sampling Flow: 50 mL/min	Sampling Time: 10 min				
Volatile Organic Compounds (VOC), Continued					
1,1-Dichloroethylene	< 44	44	µg/m3	2018-05-24	
cis-1,2-Dichloroethylene	< 44	44	µg/m3	2018-05-24	
trans-1,2-Dichloroethylene	< 44	44	µg/m3	2018-05-24	
Dichloromethane	< 440	440	µg/m3	2018-05-24	
Ethylbenzene	**95000**	2200	µg/m3	2018-05-24	
n-Hexane	**980000**	44000	µg/m3	2018-05-24	
Isopropylbenzene (Cumene)	**7400**	44	µg/m3	2018-05-24	
Methyl cyclohexane	**110000**	2200	µg/m3	2018-05-24	
Methyl tert-butyl ether	< 88	88	µg/m3	2018-05-24	
Naphthalene	**240**	44	µg/m3	2018-05-24	
Styrene	**65**	44	µg/m3	2018-05-24	
Tetrachloroethylene	< 220	220	µg/m3	2018-05-24	
Toluene	**180000**	44000	µg/m3	2018-05-24	
1,1,1-Trichloroethane	< 44	44	µg/m3	2018-05-24	
Trichloroethylene	< 22	22	µg/m3	2018-05-24	
1,2,4-Trimethylbenzene	**74000**	2200	µg/m3	2018-05-24	
1,3,5-Trimethylbenzene	**29000**	2200	µg/m3	2018-05-24	
Vinyl chloride	< 88	88	µg/m3	2018-05-24	
Xylenes (total)	**660000**	66000	µg/m3	2018-05-24	
VHv (6-13)	**7100000**	880000	µg/m3	2018-05-24	
VPHv	**5100000**	880000	µg/m3	2018-05-24	
Surrogate: Toluene-d8	*101*	*60-127*	*%*	*2018-05-24*	

Sample Qualifiers:

RA1 The Reporting Limit has been raised due to matrix interference.

APPENDIX 1: SUPPORTING INFORMATION

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051955
PROJECT	SOL040704.02	**REPORTED**	2018-05-25 13:08

Analysis Description	Method Ref.	Technique	Location
VOC/VH/VPH in Air	EPA TO-17 (1999)	Thermal Desorption (TD) GC-MSD	Richmond

Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
µg	Micrograms
EPA	United States Environmental Protection Agency Test Methods

Volatiles in Vapour by Thermal Desorption Comments:

If the sampling pump flow rate and sampling duration are available, results are converted from a weight basis (µg) to a weight per volume basis (µg/m3). In the event of a discrepancy between the lab-calibrated flow rate and field flow rate, the field flow rate will be used, unless indicated otherwise. Inaccurate sampling information could cause a significant bias in the results.

General Comments:

The results in this report apply to the samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

APPENDIX 2: QUALITY CONTROL RESULTS

REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051955
PROJECT	SOL040704.02	**REPORTED**	2018-05-25 13:08

The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk)**: A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup)**: An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS)**: A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS)**: A second aliquot of sample is fortified with with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM)**: A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

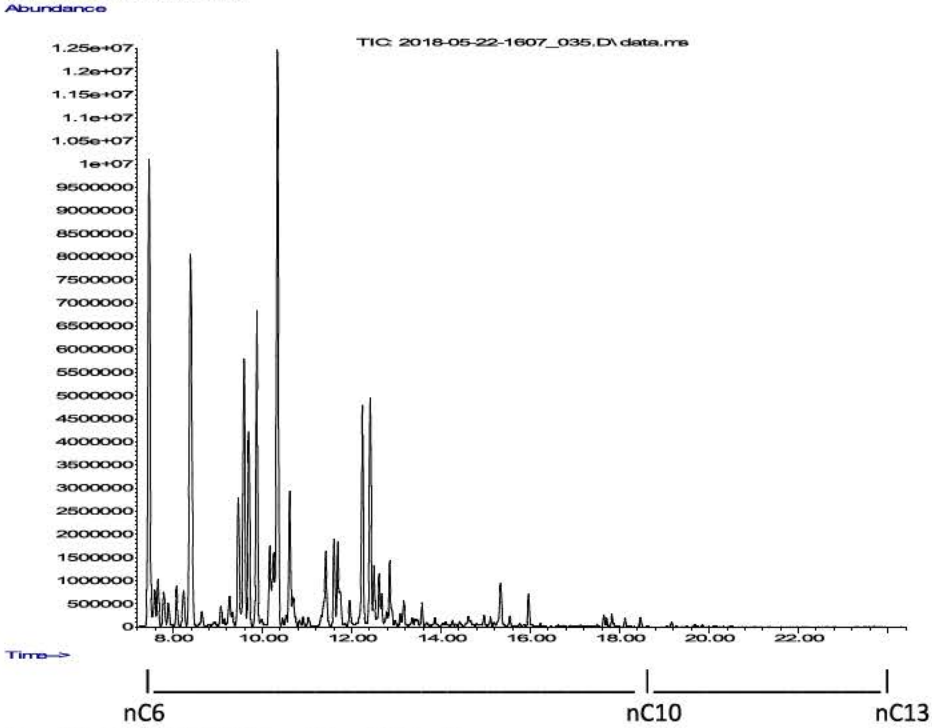
Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8E1715										
Blank (B8E1715-BLK1)				Prepared: 2018-05-22, Analyzed: 2018-05-22						
Benzene	< 0.0020	0.0020	µg							
1,3-Butadiene	< 0.0040	0.0040	µg							
Carbon tetrachloride	< 0.0010	0.0010	µg							
Chloroethane	< 0.0050	0.0050	µg							
n-Decane	< 0.0030	0.0030	µg							
1,2-Dibromoethane	< 0.0005	0.0005	µg							
1,2-Dichloroethane	< 0.0006	0.0006	µg							
1,1-Dichloroethylene	< 0.0010	0.0010	µg							
cis-1,2-Dichloroethylene	< 0.0010	0.0010	µg							
trans-1,2-Dichloroethylene	< 0.0010	0.0010	µg							
Dichloromethane	< 0.0100	0.0100	µg							
Ethylbenzene	< 0.0050	0.0050	µg							
n-Hexane	< 0.0100	0.0100	µg							
Isopropylbenzene (Cumene)	< 0.0010	0.0010	µg							
Methyl cyclohexane	< 0.0050	0.0050	µg							
Methyl tert-butyl ether	< 0.0020	0.0020	µg							
Naphthalene	< 0.0010	0.0010	µg							
Styrene	< 0.0010	0.0010	µg							
Tetrachloroethylene	< 0.0050	0.0050	µg							
Toluene	< 0.0100	0.0100	µg							
1,1,1-Trichloroethane	< 0.0010	0.0010	µg							
Trichloroethylene	< 0.0005	0.0005	µg							
1,2,4-Trimethylbenzene	< 0.0050	0.0050	µg							
1,3,5-Trimethylbenzene	< 0.0050	0.0050	µg							
Vinyl chloride	< 0.0020	0.0020	µg							
Xylenes (total)	< 0.0150	0.0150	µg							
VHv (6-13)	< 2.00	2.00	µg							
VPHv	< 2.00	2.00	µg							
Surrogate: Toluene-d8	*0.122*		*µg*	0.125		*98*	*60-127*			
LCS (B8E1715-BS1)				Prepared: 2018-05-22, Analyzed: 2018-05-22						
Benzene	0.0549	0.0020	µg	0.0500		110	60-140			
1,3-Butadiene	0.0497	0.0040	µg	0.0500		99	60-140			
Carbon tetrachloride	0.0578	0.0010	µg	0.0500		116	60-140			
Chloroethane	0.0529	0.0050	µg	0.0500		106	60-140			

APPENDIX 2: QUALITY CONTROL RESULTS

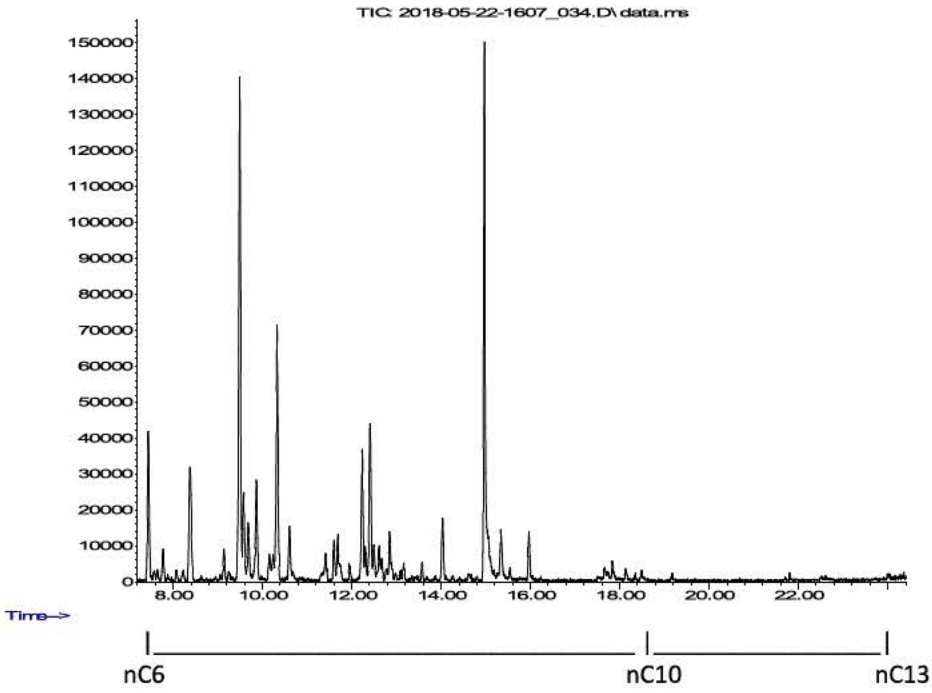
REPORTED TO	Next Environmental Inc	**WORK ORDER**	8051955
PROJECT	SOL040704.02	**REPORTED**	2018-05-25 13:08

Analyte	Result	RL	Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
Volatile Organic Compounds (VOC), Batch B8E1715, Continued										
LCS (B8E1715-BS1), Continued				Prepared: 2018-05-22, Analyzed: 2018-05-22						
n-Decane	0.0601	0.0030	µg	0.0495		121	60-140			
1,2-Dibromoethane	0.0593	0.0005	µg	0.0500		119	60-140			
1,2-Dichloroethane	0.0641	0.0006	µg	0.0505		127	60-140			
1,1-Dichloroethylene	0.0551	0.0010	µg	0.0500		110	60-140			
cis-1,2-Dichloroethylene	0.0570	0.0010	µg	0.0500		114	60-140			
trans-1,2-Dichloroethylene	0.0553	0.0010	µg	0.0500		111	60-140			
Dichloromethane	0.0542	0.0100	µg	0.0500		108	60-140			
Ethylbenzene	0.0616	0.0050	µg	0.0500		123	60-140			
n-Hexane	0.0585	0.0100	µg	0.0498		118	60-140			
Isopropylbenzene (Cumene)	0.0587	0.0010	µg	0.0500		117	60-140			
Methyl cyclohexane	0.0567	0.0050	µg	0.0498		114	60-140			
Methyl tert-butyl ether	0.0410	0.0020	µg	0.0500		82	60-140			
Naphthalene	0.0546	0.0010	µg	0.0500		109	60-140			
Styrene	0.0541	0.0010	µg	0.0500		108	60-140			
Tetrachloroethylene	0.0544	0.0050	µg	0.0500		109	60-140			
Toluene	0.0564	0.0100	µg	0.0500		113	60-140			
1,1,1-Trichloroethane	0.0604	0.0010	µg	0.0500		121	60-140			
Trichloroethylene	0.0553	0.0005	µg	0.0500		111	60-140			
1,2,4-Trimethylbenzene	0.0620	0.0050	µg	0.0500		124	60-140			
1,3,5-Trimethylbenzene	0.0597	0.0050	µg	0.0500		119	60-140			
Vinyl chloride	0.0599	0.0020	µg	0.0500		120	60-140			
Xylenes (total)	0.174	0.0150	µg	0.150		116	60-140			
LCS (B8E1715-BS2)				Prepared: 2018-05-22, Analyzed: 2018-05-22						
VHv (6-13)	11.1	2.00	µg	10.0		111	70-130			
LCS Dup (B8E1715-BSD1)				Prepared: 2018-05-23, Analyzed: 2018-05-23						
Benzene	0.0638	0.0020	µg	0.0500		128	60-140	15	30	
1,3-Butadiene	0.0516	0.0040	µg	0.0500		103	60-140	4	30	
Carbon tetrachloride	0.0527	0.0010	µg	0.0500		105	60-140	9	30	
Chloroethane	0.0443	0.0050	µg	0.0500		89	60-140	18	30	
n-Decane	0.0630	0.0030	µg	0.0495		127	60-140	5	30	
1,2-Dibromoethane	0.0572	0.0005	µg	0.0500		114	60-140	4	30	
1,2-Dichloroethane	0.0632	0.0006	µg	0.0505		125	60-140	1	30	
1,1-Dichloroethylene	0.0579	0.0010	µg	0.0500		116	60-140	5	30	
cis-1,2-Dichloroethylene	0.0576	0.0010	µg	0.0500		115	60-140	1	30	
trans-1,2-Dichloroethylene	0.0562	0.0010	µg	0.0500		112	60-140	2	30	
Dichloromethane	0.0571	0.0100	µg	0.0500		114	60-140	5	30	
Ethylbenzene	0.0592	0.0050	µg	0.0500		118	60-140	4	30	
n-Hexane	0.0660	0.0100	µg	0.0498		133	60-140	12	30	
Isopropylbenzene (Cumene)	0.0606	0.0010	µg	0.0500		121	60-140	3	30	
Methyl cyclohexane	0.0598	0.0050	µg	0.0498		120	60-140	5	30	
Methyl tert-butyl ether	0.0308	0.0020	µg	0.0500		62	60-140	28	30	
Naphthalene	0.0583	0.0010	µg	0.0500		117	60-140	7	30	
Styrene	0.0529	0.0010	µg	0.0500		106	60-140	2	30	
Tetrachloroethylene	0.0576	0.0050	µg	0.0500		115	60-140	6	30	
Toluene	0.0603	0.0100	µg	0.0500		121	60-140	7	30	
1,1,1-Trichloroethane	0.0565	0.0010	µg	0.0500		113	60-140	7	30	
Trichloroethylene	0.0552	0.0005	µg	0.0500		110	60-140	< 1	30	
1,2,4-Trimethylbenzene	0.0645	0.0050	µg	0.0500		129	60-140	4	30	
1,3,5-Trimethylbenzene	0.0617	0.0050	µg	0.0500		123	60-140	3	30	
Vinyl chloride	0.0497	0.0020	µg	0.0500		99	60-140	19	30	
Xylenes (total)	0.190	0.0150	µg	0.150		126	60-140	8	30	

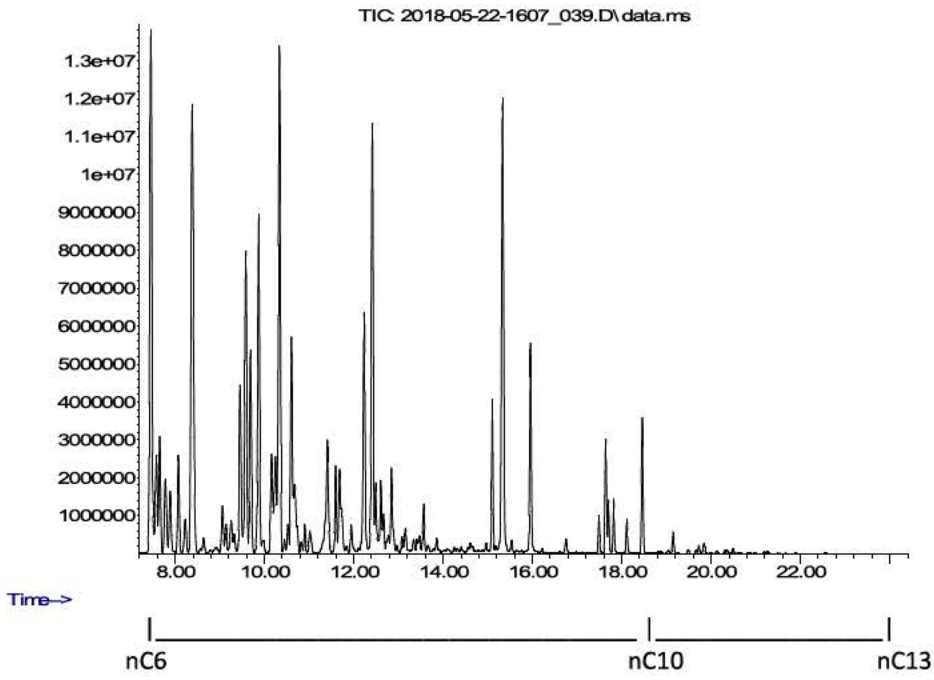
Caro ID: 8051955-01 (22x offline dilution)
Client ID: BH206v-100



Caro ID: 8051955-03 (22x offline dilution)
Client ID: BH206vn-100



Caro ID: 8051955-04 (22x offline dilution)
Client ID: BH206vn-500



CARO ANALYTICAL SERVICES
Caring About Results... Obviously

110 Tel:
102 Tel:
172 Tel:

8051955

Clear Form | Print a Copy | Save a Copy | CARO Website | CARO BC COC, Rev 201[illegible]9

CHAIN OF CUSTODY RECORD

COC# | PAGE 1 O[illegible]

RELINQUISHED BY:	DATE: 22-05-18	RECEIVED BY:	DATE: May 2[illegible]
ML	TIME:	YL WI	TIME: 142

PROJECT: SOL040704.02

PROJECT INFO:

TURNAROUND TIME REQUESTED:
Routine: (5-7 Days) ☐
Rush: 1 Day* ☐ 2 Day* ☐ 3 Day* ☒
Other* ☐
*Contact Lab To Confirm. Surcharge May Apply

REGULATORY APPLICATION:
Canadian Drinking Water Quality Guidelines ☐ | Regs on Report? ☐
BC Drinking Water Protection Act / Reg. ☐
BC CSR ☐ AB TIER 1 ☐ CCME ☐ OTHER* ☐
AL ☐ PL ☐ RL ☐ CL ☐ IL ☐ AW ☐ IW ☐ LW ☐

REPORT TO:
COMPANY: Next Environmental Inc.
ADDRESS: 215-2550 Boundary Rd, Burnaby, BC V5M 3Z3
CONTACT: csteele@nextenvironmental.com
TEL/FAX: 778-988-7821
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
DATA FORMAT: EXCEL ☒ WATERTRAX ☐ ESdat ☒ EQuIS ☐ BC EMS ☐ OTHER* ☐
EMAIL 1: csteele@nextnenvironmental.com
EMAIL 2: amansourpour@nextenvironmental.com
EMAIL 3:

INVOICE TO: SAME AS REPORT TO ☐
COMPANY: Next Environmental Inc.
ADDRESS: 215-2550 Boundary Rd, Burnaby, BC V5M 3Z3
CONTACT: Graham Marshall
TEL/FAX: 604-419-3800
DELIVERY METHOD: EMAIL ☒ MAIL ☐ OTHER* ☐
EMAIL 1: accountants@nextenvironmental.com
EMAIL 2:
EMAIL 3:
PO #:

** NEW ** If you would like to sign up for ClientConnect and/or EnviroChain, CARO's online service offerings, check here: ☐

SAMPLED BY: ML

ANALYSES REQUESTED:

CLIENT SAMPLE ID:	MATRIX: DRINKING WATER	OTHER WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE (DD-MMM-YY)	TIME (HH:MM)	COMMENTS: CHLORINATED	FILTERED	PRESERVED	(e.g. flow/volume media ID/notes)	BTEX ☐ VPH ☐ PHC F1 ☐	VOC ☒ VPH ☐	EPH ☐ PHC F2-F4 ☐	PAH ☐ L/HEPH ☐	PHENOLS Chlorinated ☐ Non-Chlor. ☐	PCB ☐ GLYCOLS ☐ HAA ☐	PESTICIDES ☐ ACID HERBICIDES ☐	METALS - WATER TOTAL Hg ☐	METALS - WATER DISSOLVED Hg ☐	METALS - SOIL (SALM) ☐ inc. pH ☐	pH ☐ EC ☐ ALK ☐	TSS ☐ VSS ☐ TDS ☐	BOD ☐ COD ☐	TOG ☐ MOG ☐	FECAL COLIFORMS ☐ HPC ☐	TOTAL COLIFORMS ☐ *E. coli* ☐	ASBESTOS	~~PCB~~ list attached	Naphthalene	HOLD
BH206v-100				✔	1	22-05-18	1300				100mL		X																	X	
BH206v-500				✔	1	22-05-18	↓				500mL		X																	X	
BH206vn-100				✔	1	22-05-18					100 mL		X																	X	
BH206vn-500				✔	1	22-05-18					500mL		X																	X	

SHIPPING INSTRUCTIONS: Return Cooler(s) ☐
Supplies Needed:

SAMPLE RETENTION INSTRUCTIONS (Discarded 30 days after Report unless otherwise specified):
60 Days ☐ 90 Days ☐ Longer Date (Surcharges will Apply): _____
*** OTHER INSTRUCTIONS:**

PAYMENT:
CHEQUE ☐
CREDIT ☐
DEBIT ☐
CASH ☐

SAMPLE RECEIPT CONDITION:
COOLER 1 (°C): 7 ICE: Y ☐ N ☐
COOLER 2 (°C): _____ ICE: Y ☐ N ☐
COOLER 3 (°C): _____ ICE: Y ☐ N ☐
CUSTODY SEALS INTACT: NA ☐ Y ☐ N ☐

CARO ANALYTICAL SERVICES

AIR SAMPLING FIELD TEST DATA SHEET & EQUIPMENT RENTAL FORM

1. **Client Information**

Client: NEXT **Date(s) Sampled:** May 22, 2018

Project: SoL040704.02 **Sampled by:** ML

Details: _____ **COC #** _____

2. **Site Conditions**

Weather: _____ **Temperature (°C):** _____

Humidity: _____ **Pressure:** _____

3. **Regulatory Level (recommended sample volume for ALL land use categories is 2 L):**

☐ Agricultural / Urban Park / Residential (RL) ☐ Commercial (CL)

☐ Industrial (IL) ☐ Parkade (PK)

Note: The recommended sample volumes required to achieve BC CSR Schedule 3.3 Generic Numerical Vapour Standards are based on a clean site. If the site is contaminated, the recommended volumes may exceed analytical capabilities to achieve the low reporting limits and as such the reporting limits for certain parameters may be raised. Lower sample volumes are recommended at contaminated sites with high PID and/or Gastech readings; please contact the lab to discuss further.

4. **Sampling Data** (Shaded fields to be completed by CARO staff) **ORDER #** S821

Pump ID	Client Sample ID / Location	Location Notes (e.g. Hot site, Tube ID, etc.)	Initial Flow Rate (mL/min)		Suggested Sampling Time (mins)	Sampling Period (Time)		Total Sampling Time (min)	Final Flow Rate (mL/min)	
			Inlet 1 Tube:	Inlet 2 Tube:		Start	Stop		Inlet 1	Inlet 2
	BH206v-100	G0149140				1:07	1:09	2		
	BH206v-400	G0141759				1:12	1:20	10		
	BH206vn-100	G0192371				1:24	1:26	2		
	BH206vn-400	G0155807				1:28	1:38	10		
						sample	flow	rate=		
							50mL	/min		

Equip. Rented To: CHRIS STEELE Rental Date: 22MAY2018 Returned Date: 22 May 2018

Initial Calibration by/date: JA 18MAY2018 Final Calibration by/date: _____

Pumps Rented: - Returned: _____ TD Tubes Rented: 4 Returned: 4 Condition: _____

Chargers Rented: - Returned: _____ Purge Tubes: _____ Returned: _____ Rotameter: _____ COCs: ✓

Tubing Type: _____ Butting Tubing: 4 Splitters: _____ Instruction Manual: _____

Comments: _____ Surrogate ID: C7J0508

DO NOT USE REGULAR TUBES TO PURGE

Appendix H
Author and Reviewer Qualifications

Author

Chris Steele, B.A.Sc., E.I.T.

Assistant Manager, Operations

Chris Steele joined Next Environmental Inc. in February 2015. Since then he has worked on well over 100 projects including Stage 1 and 2 Preliminary Site Investigations, Detailed Site Investigations and remedial excavations and risk assessments. His role at Next involves oversight of day-to-day operations including project planning and setup, report review, and technical support for client services representatives.

Reviewer

Gavin Leung, B.Sc., P.Ag. (BC & AB)

Manager, Operations

Gavin has been at Next Environmental Inc. since 2008, and has been involved with the design and implementation of various operational and business development processes, streamlining project delivery. Ultimately, striving to meet Client's business goals while upholding a high level of regulatory and technical practice is the goal for every task, no matter how small or large. He has completed and/or reviewed hundreds of projects, ranging from Stage 1 (or Phase 1) Preliminary Site Investigations to complex Certificate of Compliance submissions from the Ministry of Environment & Climate Change Strategy.