



September 29, 2016

Mr. Michael Roberts  
UCANCO General Partners Inc.  
303 – 1650 Des Peres Road  
St. Louis, MO 63131  
USA

Dear Mr. Roberts:

**Re: Performance Verification Plan for Certificate of Compliance, Alexander Avenue  
Adjacent to 8890 School Street, Chilliwack, BC  
Project No. 12169**

Keystone Environmental Ltd. (Keystone Environmental) has prepared this Performance Verification Plan (PVP) in support of an application for a risk-based Certificate of Compliance (CofC) for the roadway (Alexander Avenue) adjacent to the north/northeast of the property located at the 8890 School Street, Chilliwack, BC. The roadway is owned by the City of Chilliwack (City), and will herein be referred to as the “Off-Site City property.”

The PVP presents the principal risk management measures (i.e., the Schedule B key risk management controls) that apply and must remain in place at the Off-Site City property to ensure that the Off-Site City property CofC remains valid. The PVP was prepared in accordance with BC Ministry of Environment (MOE) Administrative Guidance 14: Performance Verification Plans, Contingency Plans, and Operations and Maintenance Plans (MOE, 2015). The PVP was based on the findings of the Keystone Environmental (2016b) report titled *Report of Findings – Human Health and Ecological Risk Assessment, 8890 School Street, Chilliwack, BC*.

#### **DETERMINATION OF REMEDIATION TYPE**

Based on the risk management measures for the Off-Site City property, the Remediation Type applicable at the Off-Site City property is considered to be Type 2 (Case 2). Remediation Type 2 sites may require the use of engineering and institutional controls to mitigate/eliminate risks at the Off-Site City property, but in the event that controls were either not implemented or were implemented but were rendered ineffective, there is a lack of imminent risks.

Under a Remediation Type 2 (Case 2) scenario, MOE (2015) indicates that a PVP is required and that an operations and maintenance plan may be required. A contingency plan is not required.

## REQUIRED RISK CONTROLS

The principal risk controls which must be maintained at the Off-Site City property include the following items:

- Soil contamination exceeding standards relevant to human and ecological soil contact currently at depths greater than 1 mbg must remain at depths greater than 1 mbg (refer to attached Management Area Figure and Metes and Bounds).
- Groundwater must not to be used as drinking water.
- The ground surface within the inferred area of VPHs and LEPHs contamination in near surface soils, which is currently paved, must remain paved.

## REQUIRED ACTIONS TO IMPLEMENT THE REQUIRED RISK CONTROLS

The following actions are required to implement the risk controls:

- Mandatory notification provided to the City of Chilliwack that soil contamination exceeding standards relevant to human and ecological soil contact currently at depths greater than 1 mbg must remain at depths greater than 1 mbg.
- Mandatory notification provided to the City of Chilliwack that no drinking water wells are to be installed.
- Mandatory notification provided to the City of Chilliwack that the ground surface within the inferred area of VPHs and LEPHs contamination in near surface soils, which is currently paved, must remain paved.

Records of these actions should be maintained by the Site owner and submitted to the MOE if requested. Other reporting requirements for all performance verification records include the following:

- The Director must be notified promptly by the person(s) responsible for the Off-Site City property if performance verification actions indicate that any of the required risk controls are not being met. The following information must be submitted to the Director with the notification, or as soon as practicable thereafter:
  - The time period over which risk controls were not in place or implemented
  - The nature of the excursion(s)
  - The temporary or permanent corrective measures implemented or to be implemented
  - An implementation schedule
  - Supporting documentation
- If requested by the Director, a report signed by an Approved Professional must be submitted for review to the Director and must include the following (as applicable):
  - An evaluation of the performance of the institutional controls
  - Supporting documentation

## **SUMMARY RATIONALE**

Soil contamination exceeding the CSR Schedule 4 or 5 industrial land use (IL) soil standards relevant to human and ecological soil contact are present at depths below 1 mbg. The risk assessment assumed that human and terrestrial ecological contact with such soils will not occur due to its depth. Ensuring such soil contamination is maintained at depths greater than 1 mbg is needed to prevent potential risk to humans via contact, inhalation, and ingestion and to terrestrial ecological receptors via direct contact.

Groundwater contamination exceeding the CSR Schedule 6 drinking water (DW) standards are present. A drinking water use preclusion on groundwater at the Off-Site City property is needed to prevent human consumption and risk.

Soil contamination exceeding the CSR Schedule 4 industrial land use (IL) soil standards is present beneath a portion of the paved roadway in shallow soils. Ensuring this portion of the roadway remains paved in the future is needed to prevent potential risk to humans via contact, inhalation, and ingestion and to terrestrial ecological receptors via direct contact. Regular inspection that the roadway remains paved is not considered to be warranted given that the roadway is an urban transportation corridor and therefore highly likely to remain paved.

## **CONCLUSION**

It is our opinion that the actions identified above are sufficient to ensure performance verification of the risk controls required for this Off-Site City property.

## **GENERAL LIMITATIONS AND CONFIDENTIALITY**

The findings presented in this report are based upon the field work conducted by Keystone Environmental for EAG Canada ULC. Keystone Environmental has prepared this document in good faith and has relied upon information provided by others. Keystone Environmental has assumed that the information provided by third parties is both complete and accurate.

This report was completed in a manner consistent with that level of care and skill normally exercised by other environmental professionals, practicing under similar circumstances in the same locale at the time of the performance of the work.

This report has been prepared for the sole use of EAG Canada ULC and the review by the BC Ministry of Environment, pursuant to the agreement between Keystone Environmental and EAG Canada ULC. This report must be read as a whole and sections thereof cannot be read out of such context. By using this report, EAG Canada ULC and the BC Ministry of Environment agree(s) to review this report in its entirety. Keystone Environmental accepts no responsibility, and denies any liability whatsoever, to parties other than EAG Canada ULC and the BC Ministry of Environment, who may obtain access to this report for any injury, loss or damage suffered by such parties arising out of, reliance upon, or decisions or actions based on this report, except to the extent those parties have obtained a prior written consent of Keystone Environmental to use and rely upon this report and the information contained herein. Any use, reliance or decisions

made based on this report by other parties without prior written approval by Keystone Environmental are the responsibility of such parties and Keystone Environmental accepts no responsibility for damages, if any, suffered by other parties as a result of decisions made or actions based on this report. The findings presented herein should be considered within the context of the scope of work and project terms of reference. The findings are time sensitive and are considered valid at the time this report was produced. The conclusions and recommendations contained in this report are based upon applicable guidelines, regulations, and legislation existing at the time this report was produced; consequently, any changes in the regulatory regime may alter the conclusions and/or recommendations.

If you should have any questions, please do not hesitate to contact the signatory below.

Sincerely,

**Keystone Environmental Ltd.**

**Original signed by**

Kevin Hall, B.Sc., R.P.Bio.  
Risk Assessor

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**ATTACHMENTS:**

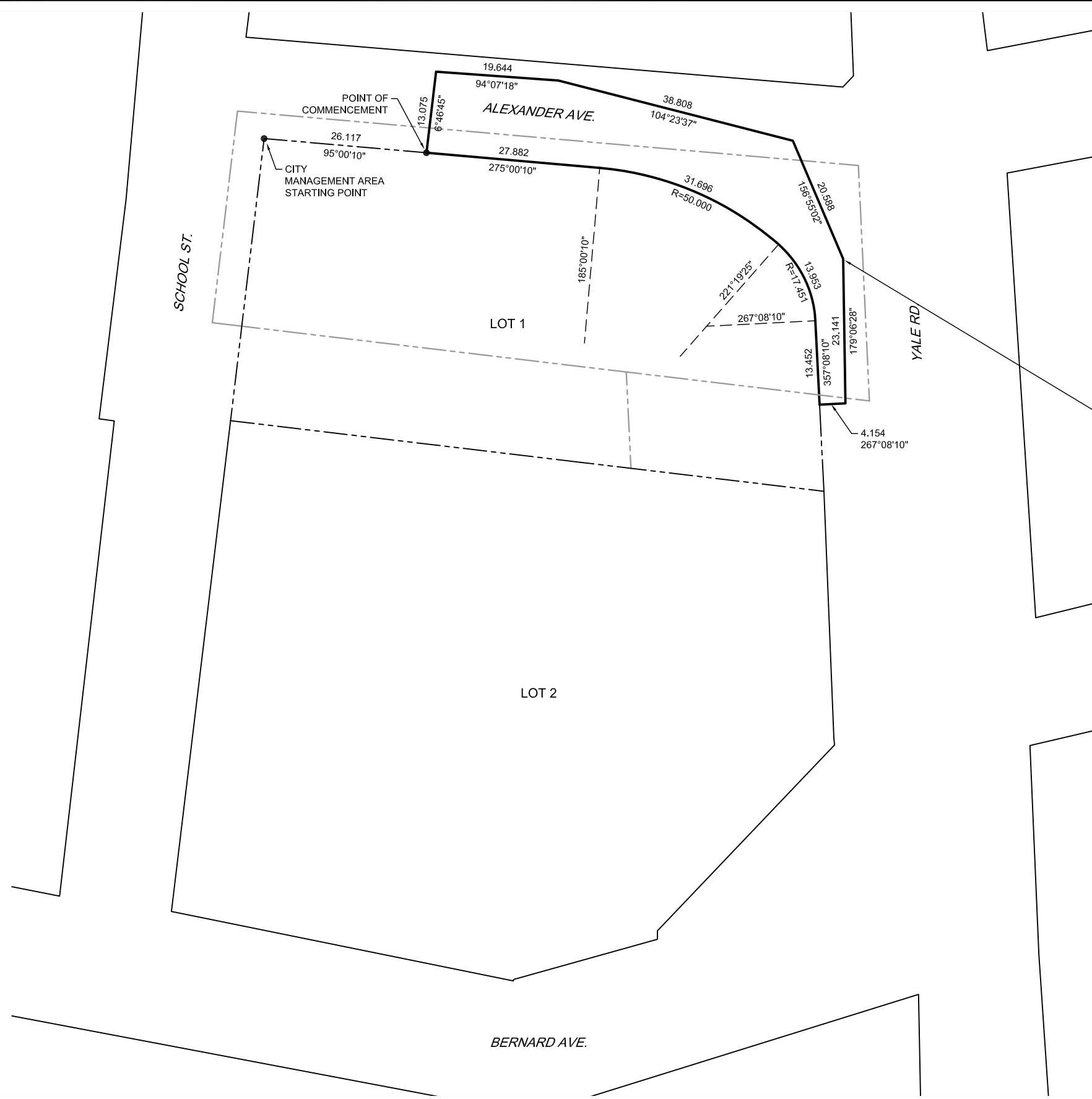
- References
- Management Area Figures
- Metes and Bounds

## REFERENCES

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- British Columbia Ministry of Environment. Environmental Protection Division. 2015. *Administrative Guidance 14 on Contaminated Sites: Performance Verification Plans, Contingency Plans, and Operations and Maintenance Plans*. (Version 3.0). Retrieved from <http://www2.gov.bc.ca/assets/gov/environment/air-land-water/site-remediation/docs/administrative-guidance/ag14.pdf>
- Keystone Environmental Ltd. (2016a, September 27). *Report of Findings – Stage 1 Preliminary Site Investigation Update, Detailed Site Investigation and Confirmation of Remediation, 8890 School Street, Chilliwack, BC*. Burnaby, BC: Keystone Environmental Ltd.
- Keystone Environmental Ltd. (2016b, September 27). *Report of Findings – Human Health and Ecological Risk Assessment, 8890 School Street, Chilliwack, BC*. Burnaby, BC: Keystone Environmental Ltd.

## MANAGEMENT AREA FIGURES



**METES & BOUNDS OF OFF-SITE CONTAMINATION, CITY MANAGEMENT AREA:**

- STARTING AT THE CITY MANAGEMENT AREA STARTING POINT, OF SUBDIVISION PLAN OF LOT 392, D.L. 28, GP. 2, N.W.D., PLAN 55106, LOTS 1, 2 AND 3, D.L. 27 AND 28, GP. 2, N.W.D., PLAN 12356, LOT 7 EXCEPT PCL. A (BYLAW PLAN 76636), D.L. 27 AND D.L. 28, GP. 2, N.W.D., PLAN 12356 AND LOT 1, D.L. 27 AND 28, GP. 2, N.W.D., PLAN 59356, DISTRICT OF CHILLIWACK
- THENCE 95° 00' 10" FOR 26.117 METRES; TO THE POINT OF COMMENCEMENT.
- THENCE 6° 46' 45" FOR 13.075 METRES;
- THENCE 94° 07' 18" FOR 19.644 METRES;
- THENCE 104° 23' 37" FOR 38.808 METRES;
- THENCE 156° 55' 02" FOR 20.588 METRES;
- THENCE 179° 06' 28" FOR 23.141 METRES;
- THENCE 267° 08' 10" FOR 4.154 METRES;
- THENCE 357° 08' 10" FOR 13.452 METRES;
- THENCE WESTERLY BEING AN ARC OF A 17.451 METRE RADIUS CURVE HAVING A RADIAL BEARING OF 267° 08' 10" TO THE CENTRE OF SAID CURVE AND A RADIAL BEARING OF 221° 19' 25" TO THE END OF SAID CURVE AN ARC DISTANCE OF 13.953 METRES;
- THENCE WESTERLY BEING AN ARC OF A 50.000 METRE RADIUS CURVE HAVING A RADIAL BEARING OF 221° 19' 25" TO THE CENTRE OF SAID CURVE AND A RADIAL BEARING OF 185° 00' 10" TO THE END OF SAID CURVE AN ARC DISTANCE OF 31.696 METRES;
- THENCE 275° 00' 10" FOR 27.882 METRES;

RETURNING TO THE POINT OF COMMENCEMENT.

**LEGEND**

- SITE
- FORMER PROPERTY LINE
- METES & BOUNDS OF OFF-SITE CONTAMINATION CITY MANAGEMENT AREA

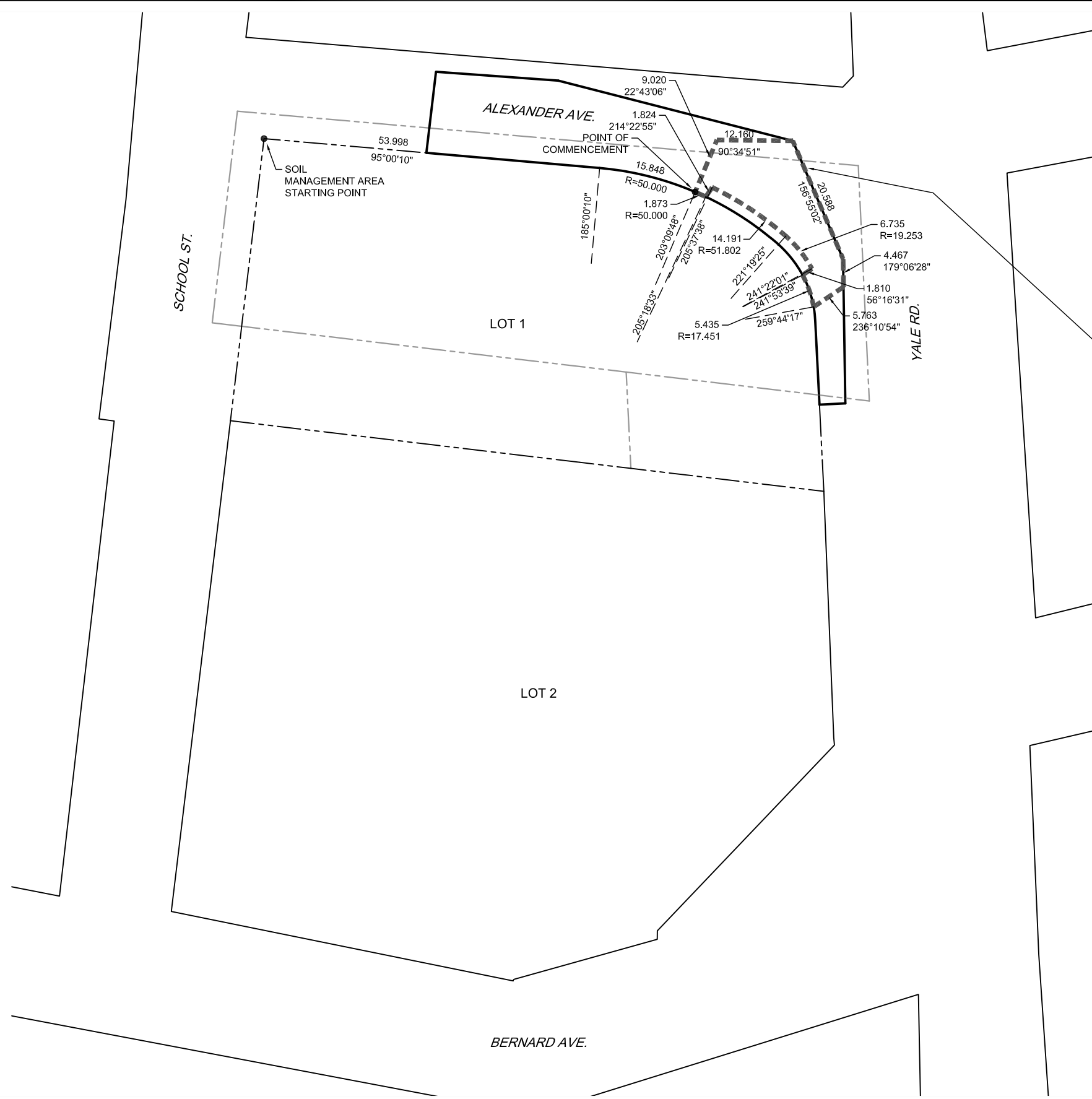
**NOTES:**  
 1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.  
 LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.

**Keystone Environmental**  
 Keystone Environmental Ltd.  
 Ste. 320 4400 Dominion Street  
 Burnaby, British Columbia  
 8890 School Street  
 Chilliwack, B C

DESIGN	APPROVED
DRAWN AB	CHECKED
SCALE  SCALE: 1:750 (approx.)	

CLIENT EAG Canada ULC	DATE 9/20/16
<b>Metes &amp; Bounds of Off-Site Contamination City Management Area</b>	SHEET No. 1 of 2
	PROJECT No. 12169-04
	REVISION No. 00
DRAWING No. 16-12169-01A	





**METES & BOUNDS OF OFF-SITE CONTAMINATION, SOIL MANAGEMENT AREA:**

- STARTING AT THE SOIL MANAGEMENT AREA STARTING POINT, OF SUBDIVISION PLAN OF LOT 392, D.L. 28, GP. 2, N.W.D., PLAN 55106, LOTS 1, 2 AND 3, D.L. 27 AND 28, GP. 2, N.W.D., PLAN 12356, LOT 7 EXCEPT PCL. A (BYLAW PLAN 76636), D.L. 27 AND D.L. 28, GP. 2, N.W.D., PLAN 12356 AND LOT 1, D.L. 27 AND 28, GP. 2, N.W.D., PLAN 59356, DISTRICT OF CHILLIWACK
- THENCE 95° 00' 10" FOR 53.998 METRES;
- THENCE EASTERLY BEING AN ARC OF A 50.000 METRE RADIUS CURVE HAVING A RADIAL BEARING OF 185° 00' 10" TO THE CENTRE OF SAID CURVE AND A RADIAL BEARING OF 203° 09' 48" TO THE END OF SAID CURVE AN ARC DISTANCE OF 15.848 METRES; TO THE POINT OF COMMENCEMENT.
- THENCE 22° 43' 06" FOR 9.020 METRES;
- THENCE 90° 34' 51" FOR 12.160 METRES;
- THENCE 156° 55' 02" FOR 20.588 METRES;
- THENCE 179° 06' 28" FOR 4.467 METRES;
- THENCE 236° 10' 54" FOR 5.763 METRES;
- THENCE WESTERLY BEING AN ARC OF A 17.451 METRE RADIUS CURVE HAVING A RADIAL BEARING OF 259° 44' 17" TO THE CENTRE OF SAID CURVE AND A RADIAL BEARING OF 241° 53' 39" TO THE END OF SAID CURVE AN ARC DISTANCE OF 5.435 METRES;
- THENCE 56° 16' 31" FOR 1.810 METRES;
- THENCE WESTERLY BEING AN ARC OF A 19.253 METRE RADIUS CURVE HAVING A RADIAL BEARING OF 241° 22' 01" TO THE CENTRE OF SAID CURVE AND A RADIAL BEARING OF 221° 19' 25" TO THE END OF SAID CURVE AN ARC DISTANCE OF 6.735 METRES;
- THENCE WESTERLY BEING AN ARC OF A 51.802 METRE RADIUS CURVE HAVING A RADIAL BEARING OF 221° 19' 25" TO THE CENTRE OF SAID CURVE AND A RADIAL BEARING OF 205° 37' 38" TO THE END OF SAID CURVE AN ARC DISTANCE OF 14.191 METRES;
- THENCE 214° 22' 55" FOR 1.824 METRES;
- THENCE WESTERLY BEING AN ARC OF A 50.000 METRE RADIUS CURVE HAVING A RADIAL BEARING OF 205° 18' 33" TO THE CENTRE OF SAID CURVE AND A RADIAL BEARING OF 203° 09' 48" TO THE END OF SAID CURVE AN ARC DISTANCE OF 1.873 METRES;
- RETURNING TO THE POINT OF COMMENCEMENT.

**LEGEND**

- SITE
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- METES & BOUNDS OF OFF-SITE CONTAMINATION CITY MANAGEMENT AREA
- METES & BOUNDS OF OFF-SITE CONTAMINATION SOIL MANAGEMENT AREA

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<b>Metes &amp; Bounds of          Off-Site Contamination          Soil Management Area</b>	SHEET No. 2 of 2
	PROJECT No. 12169-04
	REVISION No. 00
DRAWING No. 16-12169-01B	

## METES AND BOUNDS

## **CITY OF CHILLIWACK METES AND BOUNDS OF OFF-SITE CONTAMINATION**

### METES & BOUNDS OF OFF-SITE CONTAMINATION, CITY MANAGEMENT AREA:

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