



550 Poirier Street, Coquitlam, BC, Canada V3J 6A7 • Phone: 604-939-9201 • Fax: 604-939-7828

October 23, 2013

SENT VIA EMAIL TO info@quaypacific.com
ORIGINAL TO BE SENT BY MAIL

The Owners, Strata Plan LMS3080
c/o Quay Pacific Property Management Ltd.
535 Front Street
New Westminster, B.C.
V3L 1A4



Dear Sirs,

Re: Drainage relating to lands subdivided by Strata Plan LMS3080 (the "**Strata Lands**") affecting the Eagle Mountain Middle School (the "**School**") Development Site (Lot 2 Plan BCP5107 and Lots 4 and 5 Plan LMP40733, all of Section 16 Township 39 New Westminster District) (the "**School Site**") owned by The Board of Education of School District No. 43 (Coquitlam)

In the course of preparing the School Site for construction, we have discovered a concrete catchment basin and three underground pipes on the School Site that appear to be draining water from the Strata Lands. That drainage is interfering with the construction of the School.

The Village of Anmore has advised that the subject works are not part of the Village infrastructure and were not installed or inspected by the Village. Please provide us with copies of any drawings or specifications you have that show underground pipes on the Strata Lands, including any that continue on to the School Site.

Also, we enclose for your reference a copy of a report prepared by Keystone Environmental Ltd. dated August 13, 2013. The report indicates that water flowing onto the School Site is contaminated by e-coli and fecal coliforms, in excess of BC Water Quality Guidelines. It appears that there may be some discharge onto the School Site from the septic field on the Strata Lands. Please provide us with any drawings or specifications you have regarding the septic field, so that we can more fully investigate the source of the contamination.

As you can appreciate, we want to resolve this issue as soon as possible. We look forward to your prompt response and to working with you to address these important issues. Mr. John West, Manager of Projects, will be your school district contact at Ph: 604-937-6786 Fax: 604-939-6400.

Yours sincerely,

SCHOOL DISTRICT NO. 43 (COQUITLAM)

Thomas Grant
Superintendent

- c. Board of Education
Mark Ferrari, Secretary Treasurer
Carey Chute, Assistant Superintendent
Frank Giampa, Assistant Secretary Treasurer – Facilities & Planning Services
Chris Nicolls, Assistant Secretary Treasurer – Corporate & Financial Services
John West, Project Manager



August 13, 2013

Mr. John West
Project Manager
Coquitlam School District No. 43
550 Poirier Street
Coquitlam, BC V3J 6A7

Dear Mr. West:

**Re: Surface Water Runoff/Seepage Sampling Results
Heritage Middle School
Anmore, BC
File No. 10988**

Keystone Environmental Ltd. (Keystone Environmental) was requested by Coquitlam School District No. 43 to conduct sampling of surface water runoff and groundwater seeps present at the Heritage Middle School development in the Village of Anmore, BC (the Site). The sampling was conducted in response to suspected septic field discharge being directed onto the Site from an adjacent property (Anmore Estates) located immediately to the east.

Keystone Environmental collected surface water samples from a ditch, catch basin and groundwater seeps that were present along the eastern edge of the Site, and in proximity to the adjacent septic field. The sampling events were conducted on March 26, April 29, May 15, and June 25, 2013 at different locations on the east side of the Site near the septic field, based on varied conditions during Site development and presence of surface water flow and/or seeps. The following table illustrates weather conditions on the stated sample dates.

Date	Weather	Precipitation (mm)
March 26, 2013	Sunny	0.0
April 29, 2013	Sunny	0.0
May 15, 2013	Overcast	0.2
June 25, 2013	Rainy	8.4

Samples were submitted for laboratory analysis of Extractable Petroleum Hydrocarbons, Total Extractable Hydrocarbons, Polycyclic Aromatic Hydrocarbons, Light and Heavy Extractable Petroleum Hydrocarbons, Dissolved Metals, Total Metals, Total Suspended Solids, pH, Total and Fecal Coliforms and *Escherichia coli* (*E. coli*).

The following provides a description of sample locations and dates for each sample collected, as shown on the attached figure:

- SW13-A: surface water and seep collected from the base of a slope at the southern edge of the Site (March 26, 2013)
- CB IN 2: a storm drain pipe directed into the catch basin on the eastern edge of the Site from the southeast (April 29, 2013)
- CB IN: a storm drain pipe directed into the catch basin on the eastern edge of the Site from the northeast (April 29, 2013)
- CB OUT: water from the catch basin on the eastern edge of the Site (April 29, 2013)
- SW13-B: surface water collected south of the Site access road approximately 20 m northwest and up-gradient of the catch basin on the eastern edge of the Site (May 15, 2013)
- SEEP-A: groundwater seep collected from the excavation wall near the centre of the Site (May 15, 2013)
- SW13-C: surface water collected south of the Site access road approximately 10 m northwest and up-gradient of the catch basin on the eastern edge of the Site (May 15, 2013)
- CB: a second sample from the catch basin on the eastern edge of the Site. The water level was above both pipe inlet sample points (CB IN and CB IN 2) on this date (June 25, 2013).

Analytical results were compared against the BC Water Quality Guidelines for Primary- and Secondary-Contact Recreation. The criteria for primary-contact recreation (PCR) is applicable to waters where there is substantial risk of ingestion or intimate contact with eyes, ears, nose, mouth or groin. The secondary-contact recreation (SCR) criterion is applicable to waters where an individual would have limited direct contact, as well as water used to irrigate areas open to the public. Given future on-Site land use, analytical results were compared to the more conservative primary-contact recreation criteria, as primary school children are considered to have an increased likelihood for ingesting (hand to mouth) while playing in the schoolyard adjacent to the septic field. Furthermore, the primary-contact recreation criterion for bacteria is used as the safety limit to trigger beach and public area closures in Metro Vancouver.

E. coli and fecal coliforms were identified in samples collected on all occasions and at each location except for the groundwater seep (SEEP-A) sampled on May 25, 2013. Although elevated levels of fecal coliforms exceeded the PCR for surface water being directed from underground pipes directed into an on-Site catch basin from septic field to the east (CB IN 2 and CB IN), surface water samples collected from a ditch up-gradient of the catch basin on the eastern edge of the Site (SW13-B and SW13-C) contained bacteria levels that exceeded PCR criteria. The identified ditch surface water samples were collected at a similar grade to the septic field, and therefore, groundwater influence from the septic field on the ditch surface water flow is likely.

Based on the proximity to a popular recreational trail along the northern edge of the Site and directly up-gradient of samples collected from Site ditch, there is the potential that fecal matter from pets and wildlife utilizing the trail may also contribute to the microbiological exceedances. Measures to manage this overland flow from the recreational trail can be incorporated into natural drainage features in the final Site landscape and stormwater design plan to prevent

contact with the public/students. The management of surface and groundwater originating from the septic field area to the east of the Site is considered more complex and not considered to be the responsibility of the Client.

It is recommended, based on bacteria values and future on-Site land use, that the Village of Anmore and Anmore Estates be made aware of the human health concerns, and implement measures to prevent the septic field discharge migrating on-Site prior to the Site school being operational and/or Site grounds accessible to the public. If this request does not receive an immediate response, it is recommended that the BC Ministry of Health be contacted to alert them of the potential public health threat.

This report has been prepared solely for the internal use of Coquitlam School District No. 43 pursuant to the agreement between Keystone Environmental Ltd. and Coquitlam School District No. 43. By using this report, Coquitlam School District No. 43 agrees that they will review and use the report in its entirety. Any use which other parties make of this report, or any reliance on or decisions made based on it, are the responsibility of such parties. Keystone Environmental Ltd. accepts no responsibility for damages, if any, suffered by other parties as a result of decisions made or actions based on this report. I certify that the work described herein fulfills standards acceptable of a Professional Biologist.

If you should have any questions, please do not hesitate to contact us.

Sincerely,

Keystone Environmental Ltd.

ORIGINAL SIGNED BY

Jim Armstrong, M.Sc., R.P.Bio.
Chief Biologist

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ATTACHMENTS:

- Surface Water Analytical Results
- Figure 1 – Sample Location Plan

SURFACE WATER ANALYTICAL RESULTS

FIGURE 1 – SAMPLE LOCATION PLAN

