CSAP Society of Contaminated Sites Approved Professionals of British Columbia

CSAP WEBINAR SERIES

WEBINAR 4: CSAP Submissions

SPEAKER

Duncan, Macdonald, P.Eng. Standards

Pottinger Gaherty Environmental

-A standards AP since 2008, successfully completed 35 submissions, survived 5 PA audits and PA panel member for the past 2 years.

Email: dmacdonald@pggroup.com

Work Phone: 604-895-7639

SPEAKER

Paul Webb, P.Geo. Standards

Hemmera Envirochem Inc.

-A standards AP since 2005, successfully completed 16 submissions, survived 3 PA audits and PA panel member for the past 2 years.

Email: pwebb@hemmera.com

Work Phone: 604-415-7712

SPEAKER

Dave Mitchell, P.Eng. Standards

Active Earth Engineering Ltd.

A standards AP since 2008, successfully completed 25 submissions, survived 3 PA audits and PA panel member for the past 2 years.

Email: david.mitchell@activeearth.ca

Work Phone: 778-866-0064.

MODERATOR

Bob Symington, P.Geo., Principal and AP at Gandalf Consulting Ltd.

-Past CSAP Board member and past chair of the PAC, and survived 2 PA audits.

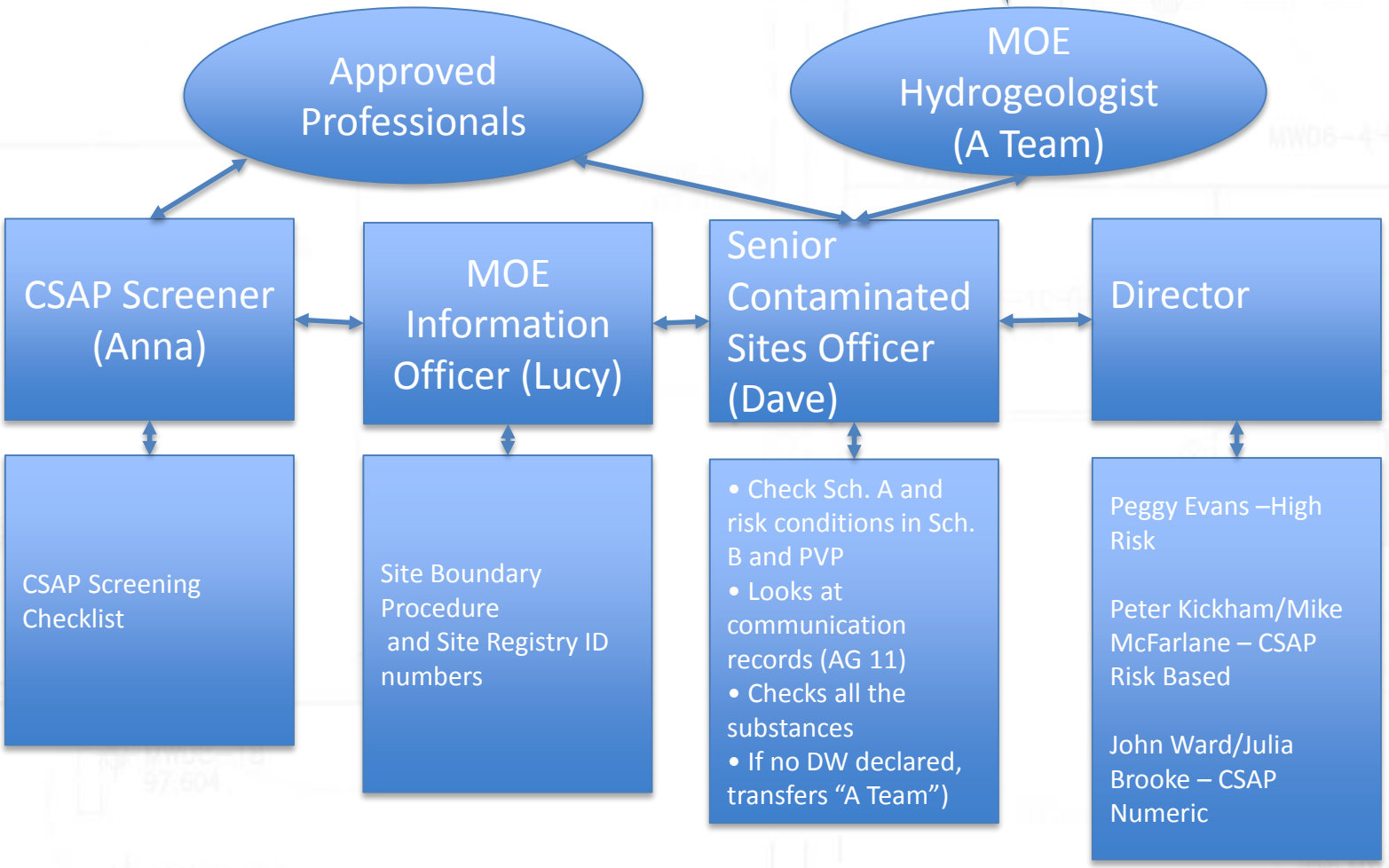
Email: Symington@gandalfconsulting.bc.ca

Phone: 604 633-2750

SESSION INFORMATION

- The Webinar consists of an Adobe Connect website portal which was supplied to you as a link and where the presentations can be viewed
- Should you wish, your computer speakers can be used to hear the presentation
- Should you not be able to hear the presentation, please also dial in to the conference call line supplied to you (please note your line will be muted)
- Questions should be typed in and will be answered by the presenters

OVERVIEW



CSAP TOOLS FOR SUBMITTING APs

- CSAP Submissions 101
- Submission Transmittal Letter Template
- Arms Length Review of Submission Template
- CSAP Screening List

CSAP SUBMISSION MANAGER TOOLS FOR SUBMITTING APs

- Legal Instruments Released from MoE
- MoE Templates in effect February 1, 2014
- Performance Assessment Lessons learned

MOE TOOLS FOR SUBMITTING APs

- Admin Guidance 3 - Applying for Contaminated Sites Services
- Admin Guidance 5 - Approved Professional Recommendations Relating to Low and Moderate Risk Sites
- Admin Procedure - Establishing Boundaries of a Site
- Protocol 6 – Eligibility of Applications for Review by APs
- Ministry Questions and Answers (Q&As)

TRANSMITTAL LETTER

Re: Transmittal Letter – Submission Package for a Recommendation under Protocol 6 for a (Instrument)

Site Owner: XXXXXXXXXXXXXXXXXX

Applicant: XXXXXXXXXXXXXXXXXX

Civic Address of Site: XXXXXXXXXXXXXXXXXX, British Columbia

BC MOE File No: 26250-20/XXXXX

SITE No.: XXXXX

TRANSMITTAL LETTER (Part 2)

(AP Name) of (Company name) has reviewed the reports submitted in support of this application as per the attached Summary of Site Condition for a: (Instrument)

Please accept the attached materials in support of the attached recommendation by (AP Name) under BC Ministry of Environment (MoE) document *Protocol 6 For Contaminated Sites, Eligibility of Applications for Review by Approved Professionals* for issuance of a (Instrument) for (Site Civic Address), British Columbia.

If you have questions or require additional information, please contact the undersigned.

Yours truly,

(Company name)

(AP Name)

TRANSMITTAL LETTER (Part 3)

- Attachments:
- Cheque made payable to CSAP Society for applicable CSAP Society fees
- Cheque made payable to BC Minister of Finance for applicable MoE fees
- Completed Contaminated Sites Services Application Form
- Report Name or Names in hard copy and in electronic formats
- Completed PSI checklist
- Completed DSI checklist
- Completed Summary of Site Condition in hard copy and in electronic formats
- Draft Instrument and Instrument Cover Letter in hard copy and Word electronic formats including Schedule “A” in a separate file.
- Current (within 6 months) printout of applicable land title records or inclusion in other attachments
- Current (within 6 months) copy of applicable Land Title Office legal plans or other land survey results or inclusion in other attachments
- Current (within 6 months) area-based Site Registry search (0.5 km radius) results or inclusion in other attachments
- Current (within 6 months) Detail Site Registry search results or inclusion in other attachments
- High Risk Classification Report, if applicable Exposure Pathway Questionnaire
- Review of Findings Report to Support an Arms-Length Recommendation, prepared by (AP Name) of (Company name) and dated XXXXX, 2010 (optional but recommended)

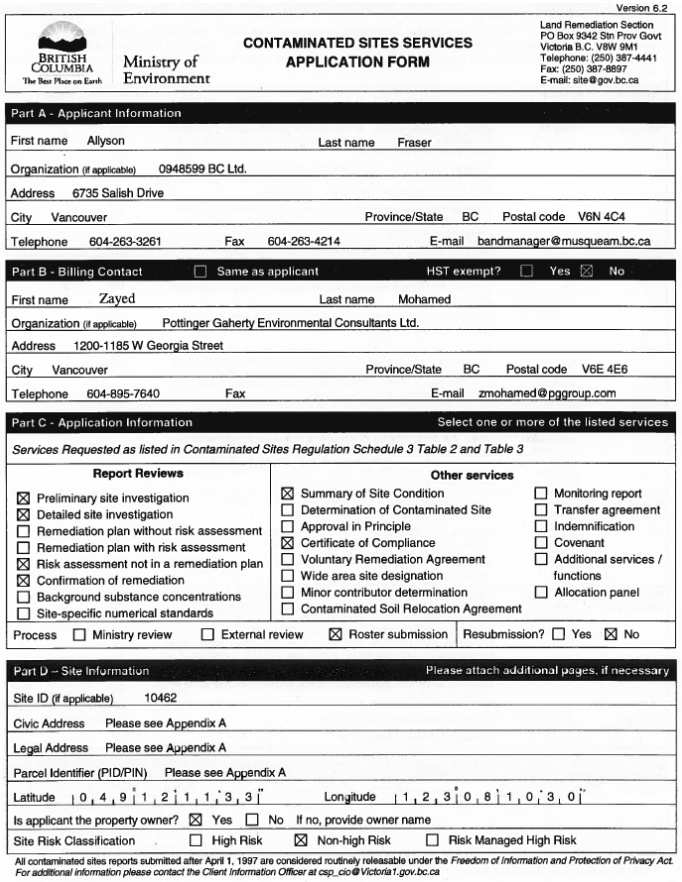
QUESTIONS?

The next speaker will be Duncan MacDonald on the CSS…

CONTAMINATED SITE SERVICES APPLICATION FORM AND COMMON DEFICIENCIES

- Generated by Submission Manager
- See AG3
- Fill in Part E!

  (report references)
- Attach title info



Version 6.2

BRITISH COLUMBIA The Best Place on Earth — Ministry of Environment

CONTAMINATED SITES SERVICES APPLICATION FORM

Land Remediation Section
PO Box 9342 Stn Prov Govt
Victoria B.C. V8W 9M1
Telephone: (250) 387-4441
Fax: (250) 387-8697
E-mail: site@gov.bc.ca

Part A - Applicant Information

First name Allyson — Last name Fraser
Organization (if applicable) 0948599 BC Ltd.
Address 6735 Salish Drive
City Vancouver — Province/State BC — Postal code V6N 4C4
Telephone 604-263-3261 — Fax 604-263-4214 — E-mail bandmanager@musqueam.bc.ca

Part B - Billing Contact ☐ Same as applicant — HST exempt? ☐ Yes ☒ No

First name Zayed — Last name Mohamed
Organization (if applicable) Pottinger Gaherty Environmental Consultants Ltd.
Address 1200-1185 W Georgia Street
City Vancouver — Province/State BC — Postal code V6E 4E6
Telephone 604-895-7640 — Fax — E-mail zmohamed@pggroup.com

Part C - Application Information — Select one or more of the listed services

Services Requested as listed in Contaminated Sites Regulation Schedule 3 Table 2 and Table 3

Report Reviews

- ☒ Preliminary site investigation
- ☒ Detailed site investigation
- ☐ Remediation plan without risk assessment
- ☐ Remediation plan with risk assessment
- ☒ Risk assessment not in a remediation plan
- ☒ Confirmation of remediation
- ☐ Background substance concentrations
- ☐ Site-specific numerical standards

Other services

- ☒ Summary of Site Condition
- ☐ Determination of Contaminated Site
- ☐ Approval in Principle
- ☒ Certificate of Compliance
- ☐ Voluntary Remediation Agreement
- ☐ Wide area site designation
- ☐ Minor contributor determination
- ☐ Contaminated Soil Relocation Agreement
- ☐ Monitoring report
- ☐ Transfer agreement
- ☐ Indemnification
- ☐ Covenant
- ☐ Additional services / functions
- ☐ Allocation panel

Process ☐ Ministry review ☐ External review ☒ Roster submission — Resubmission? ☐ Yes ☒ No

Part D – Site Information — Please attach additional pages, if necessary

Site ID (if applicable) 10462
Civic Address Please see Appendix A
Legal Address Please see Appendix A
Parcel Identifier (PID/PIN) Please see Appendix A
Latitude 0 4 9 ° 1 2 1 ' 3 3 " — Longitude 1 2 3 ° 0 8 1 ° 1 0 ' 3 0 "
Is applicant the property owner? ☒ Yes ☐ No If no, provide owner name
Site Risk Classification ☐ High Risk ☒ Non-high Risk ☐ Risk Managed High Risk

All contaminated sites reports submitted after April 1, 1997 are considered routinely releasable under the *Freedom of Information and Protection of Privacy Act*. *For additional information please contact the Client Information Officer at csp_cio@Victoria1.gov.bc.ca*

SOCIETY OF CONTAMINATED SITES APPROVED PROFESSIONALS OF BRITISH COLUMBIA

CONTAMINATED SITE SERVICES APPLICATION FORM AND COMMON DEFICIENCIES

Part E - Key Information Requirements

A satisfactorily completed Summary of Site Condition (SoSC) must be submitted to the ministry with each service application. Such applications must also be accompanied with site investigation reports, remediation plans and confirmation of remediation and risk assessment reports as applicable to the application. The checklist below must be completed for submissions for detailed review by ministry staff.

Type of Report	Ministry References*	Key Report Deliverables.	Included in Report(s)	Report References**
All types	CSR 63	Clear report conclusions. Assessment of the adequacy of previous investigation and remediation documentation and the extent to which it was, or was not, relied upon.	☒	a
		Detailed descriptions of field and laboratory methods (including QA/QC). Fully supported explanations shall be provided for any deviations from ministry guidance, other documentation etc.	☒	b
		Professional statements. Report authors must ensure that report waiver or liability clauses do not preclude ministry reliance on the information presented.	☒	c
Preliminary Site Investigation		Copy of up to date land title record and legal sketch plan or engineering drawing. Evidence of area-based Site Registry search.	☒ Attached to submission	
Stage 1	CSR 58 and 12; Technical Guidance 10	Figure showing onsite and offsite areas of potential environmental concern (APEC) and contaminants of potential concern associated with each APEC.	☒	d
		Clearly supported specification of land and water uses, and site-specific factors applicable to the site.	☒	e
Stage 2	CSR 58 and 12; Technical Guidance 1, 3, 6, 10	Figure(s) showing the general areas of environmental concern (AECs) and contaminants of concern (COCs) associated with each AEC in onsite and offsite soil and water. Sample locations and corresponding analytical results shall be shown on each figure and in tabular form with reference to applicable standards.	☒	f
Detailed Site Investigation	CSR 59 and 1 (definition of remediation plan, item (a)); Technical Guidance 1, 2, 3, 6, 11, 12	Figures (plan and section), with contours, showing the specific lateral and vertical distribution of each COC in onsite and offsite soil and water. Sections must be longitudinal and transverse with respect to groundwater flow and include physical conditions (e.g. stratigraphy, water table etc.). Sample locations with corresponding analytical results used to develop each figure must be shown on the figure and in tabular form with reference to applicable standards.	☒	g
Remediation Plan	CSR 1 (definition of remediation plan); Technical Guidance 1, 2, 3, 6, 12	Plan shall address each applicable item in CSR 1 definition of remediation plan i.e. (a) through (j).	☐	
		Signed/sealed plans and statement of assurance for any remediation system design included in the remediation plan.	☐	
		Legal sketch plan or engineering drawing showing boundaries of any offsite contamination.	☐	
Remediation confirmation	CSR 49(2); Technical Guidance 1, 2, 3, 6, 12	Figure(s) showing the lateral and vertical extent of any treated or removed contamination. Confirmatory sample locations and corresponding analytical results must be shown on each figure and in tabular form with reference to applicable standards.	☒	h
		Conclusion stating to what standards the contaminated site has been remediated and how any requirements imposed (e.g. conditions in an Approval in Principle, order requirements etc.) have been met.	☒	i
		Legal sketch plan or engineering drawing showing boundaries of any offsite remediation.	☒ Attached to submission	
Site Risk Classification	EMA 64(2)(i); Protocol 11, 12, 16	Site Risk Classification Report Form	☒ Attached to submission	
		Exposure Pathway Questionnaire	☐	

Part F - Signature

Signed : Duncan Macdonald (Print Name) _____ (Signature) Dated : Sept 16 2014 (mmm/dd/yyyy)

I am acting as agent for the applicant ☐ Yes ☒ No Telephone 604 682 3707 Fax 604 682 3497

** CSR stands for the Contaminated Sites Regulation; EMA stands for the Environmental Management Act.*
*** Note the section(s), page(s) and/or figure number(s). Use a separate sheet if necessary.*

Appendix A – Additional PIDs and Legal Descriptions

Legal Description	Civic Address	PID
Lot 4 through Lot 9, Block 1, District Lot 318, Plan 2067, New Westminster Land District.	1314-1348 Southwest Marine Drive, Vancouver , BC	014-052-113 (Lot 4) 014-052-121 (Lot 5) 014-052-130 (Lot 6) 014-052-148 (Lot 7) 014-052-156 (Lot 8) 014-052-164 (Lot 9)

Report References

a) SoSC Report #17 (Stage 1), Section 6.1 and Report #18, Section 3.0
b) SoSC Report #18 (Stage 2 PSI, DSI, COR) Section 6.1.4 and Appendix 9
c) SoSC Report #18 (Stage 2 PSI, DSI, COR)Section 11
d) SoSC Report #17 (Stage 1) Figure 5
e) SoSC Report #17 (Stage 1) Section 5
f) SoSC Report #18 (Stage 2 PSI, DSI, COR) Figure 4 through Figure 17
g) SoSC Report #18 (Stage 2 PSI, DSI, COR) Figure 18 through Figure 28c
h) SoSC Report #18 (Stage 2 PSI, DSI, COR) Figure 19
i) SoSC Report #18 (Stage 2 PSI, DSI, COR) Section 8 and Section 10

QUESTIONS?

Next speaker will be Paul Webb on the SoSC

SUMMARY OF SITE CONDITIONS

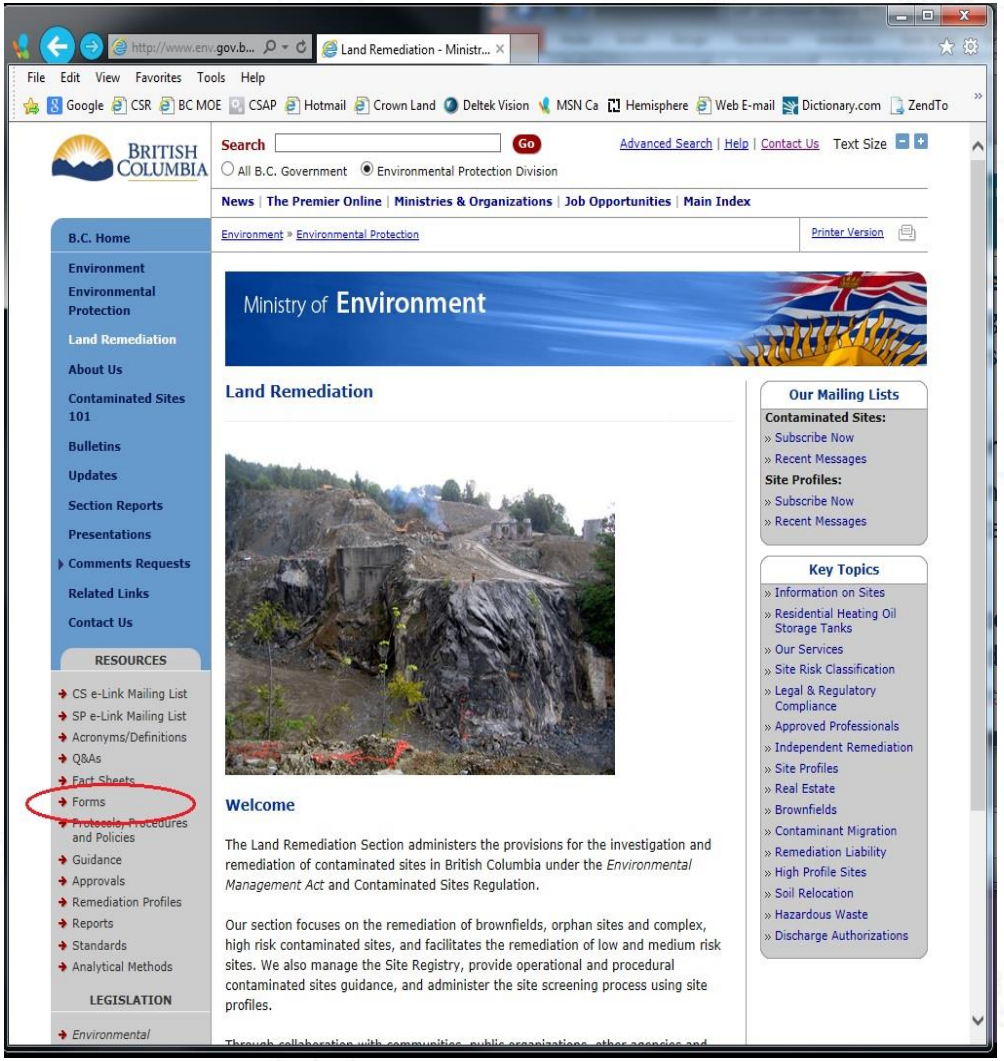
Provides the MoE with:

- summary of key site information regarding status of investigations
- the nature and extent of remediation proposed or undertaken
- further work that will be required
- part of legislated and regulated closure documentation.

The Summary of Site Condition can also provide information to persons managing contaminants on adjacent property

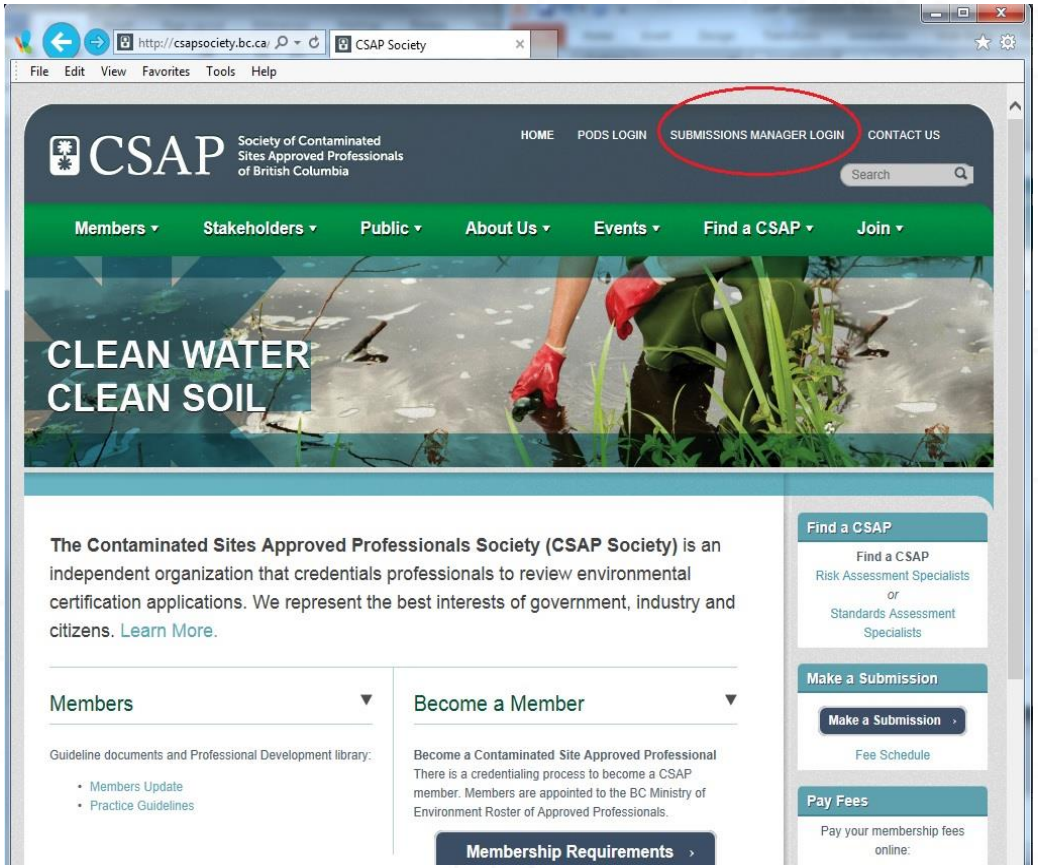
SUMMARY OF SITE CONDITIONS

Where to find:



SUMMARY OF SITE CONDITIONS

Can also prepare through CSAP Submissions Manager:



SUMMARY OF SITE CONDITIONS

Checklist so you don't forget required information:

Notes and instructions

A Summary of Site Condition is to be completed by the Approved Professional(s) making submission to the Ministry of Environment with application for a regulatory instrument (e.g. Determination, Approval in Principle, Contaminated Soil Relocation Agreement or Certificate of Compliance).

This Summary of Site Condition will provide ministry regulatory officials with much of the information on which they will evaluate the recommendation of an Approved Professional(s).

A separate Summary of Site Condition is required for each service request submitted for a site.

All applicable parts of this Summary of Site Condition and required attachments (e.g., site plan; site plan showing areas of potential environmental concern, and / or areas of environmental concern) must be completed and submitted or it will be returned and processing of any application(s) will be delayed.

If the Summary of Site Condition is to accompany a recommendation by an Approved Professional that a service be provided as described in section 7.1 of the Contaminated Sites Regulation, the following must also be submitted with the package:

- ☐ a completed Contaminated Sites Service Application form
- ☐ a contaminated sites legal instrument cover letter (hard copy and electronic version)
- ☐ a completed draft contaminated sites legal instrument
- ☐ the applicable fees
- ☐ a signed Summary of Site Condition (hard copy and electronic version with PDF format preferred)

Failure to accurately fill out the Summary of Site Condition may result in delays issuing the legal instrument.

Failure to accurately fill out the Summary of Site Condition may result in delays issuing the legal instrument.

SUMMARY OF SITE CONDITIONS

Part 2: Executive Summary

(To be completed by the Approved Professional(s) reviewing site investigation, risk assessment, remediation or confirmation of remediation reports)

Site Location: (*The site and location plans are to be provided as Schedule A of the draft instrument.*)	
Subject Site:	
Civic Address(s):	
Site Common Name: *(if applicable)*	
Legal description(s) *or* metes and bounds: *(add additional pages if needed)*	
PID(s): *(or PIN(s) if untitled Crown land)*	
Centre of site: *(using NAD 83 convention) (accurate to ± 0.5 second)*	Latitude: ____ degrees ____ min __.__ secs
	Longitude: ____ degrees ____ min __.__ secs
Offsite impacted	☐ Offsite impacted properties(s) – provide information for each

Including report figures and plans

Hard copies of figures and plans do not have to be submitted with Summaries of Site Condition if they are:

- included in submitted reports and referenced in the Summary of Site Condition, or

- included in Schedule A of an instrument submitted with the Summary of Site Condition.

SUMMARY OF SITE CONDITIONS

Part 3: Document Summary

(List of all known site investigation, risk assessment (including screening level risk assessment), remediation plan and confirmation of remediation reports completed and directly supporting correspondence submitted (subject site and offsite impacted sites).

#	Document Title	Author / Company	Document Date

Should also be listed:

- performance verification plans;
- approvals and preapprovals under protocols (e.g., 2 – 4, 6, 7, and 9) to establish, for example, background levels of substances and site-specific standards;
- determinations of land, water, sediment or vapour use by a Director;
- discharge authorizations issued under Section 6 of the *EMA;*
- hazardous waste authorizations

SUMMARY OF SITE CONDITIONS

Part 4. Investigation Summary

4.2 Site Conditions

Topography
Describe steepness and direction of slope and position of site in relation to surrounding land

Stratigraphy
Describe depth and thickness, grain size, etc. of typical stratigraphic components and note depth to cemented or very compact materials, bedrock / refusal, etc.

Hydrogeology
Describe groundwater levels, confining / semi-confining layers, flow direction and velocity

SUMMARY OF SITE CONDITIONS

4.2. Site Conditions – Hydrogeology Current Use

Hydrogeology
Describe groundwater levels, confining / semi-confining layers, flow direction and velocity
For **Current** Use:

- state whether there are any drinking water, irrigation or livestock watering wells within 500m of the site.
- indicate if a background groundwater decision was obtained and for what COCs.
- at a site with bedrock aquifer, indicate whether groundwater contamination reaches the bedrock surface.

- state whether there are any drinking water, irrigation or livestock watering wells within 500m of the site.
- indicate if a background groundwater decision was obtained and for what COCs.
- at a site with bedrock aquifer, indicate whether groundwater contamination reaches the bedrock surface.

SUMMARY OF SITE CONDITIONS

4.2. Site Conditions – Hydrogeology Future Use

Hydrogeology
Describe groundwater levels, confining / semi-confining layers, flow direction and velocity
For **Future** Use:

- if DW is not applicable, demonstrate:	-shallow aquifer is of insufficient saturated thickness (<2m) or -hydraulic conductivity is $<1x10^{-6}$ m/s or -TDS>4000mg/L
	-provide a bulk hydraulic conductivity for the deeper confining unit and shallow aquifer (if sat thick >2m) as per MoE **calculation methods**
- If hydraulic conductivity of confining unit is basis for future DW use exemption, then indicate whether **unit is uniform and free of fractures** and at what **depth** observed.	
- indicate the **depth** at which the **sample in the natural confining barrier** has substance concentrations in soil or water that are: less than or equal to the commercial land use soil standards (DW site-specific factor); or less than the drinking water standards in Schedule 6, where there are no prescribed soil standards (e.g., benzo[a]pyrene).	
- If contamination has reached the **bedrock** surface, indicate a **yield** measurement for the bedrock.	

SUMMARY OF SITE CONDITIONS

Part 4. Investigation Summary

Substance lists

The spelling of each substance must match the spelling for that substance in the applicable schedule of the Regulation.

Substances should be grouped by substance class and listed alphabetically.

For guidance, consult section 9.4 of Procedure 12, "Procedures for preparing and issuing contaminated sites legal instruments."

SUMMARY OF SITE CONDITIONS

4.5 APEC and PCOC Summary

(Not applicable for a receiving site in a Contaminated Soil Relocation Agreement)

Provide reference to a figure showing onsite and offsite areas of potential environmental concern (APEC) and contaminants of potential concern associated with each APEC: Report #4, Figure #4, Page # 38

Area of Potential Environmental Concern (APEC)		Potential Contaminant of Concern (PCOC) *(indicate products, chemicals, waste type, etc. and / or analytical parameter)*	Check where analyses completed					
#	Description *(describe location in relation to process source, waste, filling, land use or activity, etc. giving rise to APEC, and if APEC is primary due to soil or water contamination)*		Soil	Sediment	Ground Water	Surface Water	Vapour	Other (explain)
1	Historical (1964-1983) USTs and pump islands in southwest corner of the site.	BTEX, VPH, EPHs, LEPH, HEPH	☒	☐	☒	☐	☒	☐
		PAHs	☒	☐	☒	☐	☐	☐
		Metals	☒	☐	☒	☐	☐	☐
		VOCs	☒	☐	☒	☐	☐	☐
2	Former gasoline USTs (main tank nest – circa 1983-1996 and the replacement tanks circa 1996-1999), pump	BTEX, VPH, EPHs, LEPH, HEPH	☒	☐	☒	☐	☒	☐
		PAHs	☒	☐	☒	☐	☐	☐
		Metals	☒	☐	☒	☐	☐	☐
		MTBE	☒	☐	☒	☐	☐	☐

SUMMARY OF SITE CONDITIONS

For clarity, should use one of the following approaches:

- list each individual substance in the body of the table, or
- list the substance classes with a list of individual substances either as a footnote to the table or as an appended table.

Legend: **BTEX** = benzene, toluene, ethylbenzene, xylenes

PAHs in **soil** include:

benzo(a)anthracene	benzo(a)pyrene	naphthalene
benzo(b)fluoranthene	dibenz(a,h)anthracene	phenanthrene
benzo(k)fluoranthene	indo(1,2,3 -cd) pyrene	pyrene

PAHs in **groundwater** include:

acenaphthene	benzo(a)anthracene	naphthalene
acridine	chrysene	phenanthrene
anthracene	fluoranthene	pyrene
benz(a)pyrene	fluorine	quinoline

PCBs = polychlorinated biphenyls

Metals (total) in **soil** include:

antimony	beryllium	cobalt	molybdenum	silver	zinc
arsenic	cadmium	copper lead	nickel	tin	
barium	chromium	mercury	selenium	vanadium	

Dissolved Metals in **groundwater** include:

aluminum	boron	copper	manganese	silver	vanadium
antimony	cadmium	iron	mercury	sodium	zinc
arsenic	calcium	lead	molybdenum	thallium	
barium	chromium	lithium	nickel	titanium	
beryllium	cobalt	magnesium	selenium	uranium	

VOCs = volatile organic compounds, in **soil** include:

trichloromethane (chloroform)	tetrachloromethane (carbon	bromodichloromethane (BDCM)
1,1-dichloroethane	tetrachloride)	chloroethane (ethyl chloride)
1,2-dichloroethane	1,1,1-trichloroethane	chloroethene (vinyl chloride)
1,1-dichloroethylene	1,1,2-trichloroethane	monochloromethane (methyl chloride)

SUMMARY OF SITE CONDITIONS

Since the SoSC form was created there have amendments to the Regulation which have not been reflected in the current version.

4.4 Applicable Numerical Concentration Standards and Criteria
(if more than one land or water use applies to the site, expand this section to specify additional land uses covered by the instrument, i.e. riparian areas, roadways, etc. Include a diagram to clearly show the areas with different standards)

Soil (standards):

Property		CSR Land Use					
		AL	PL	RL	CL	IL	Other
Subject site	Current	☐	☐	☐	☐	☐	☒
	Proposed	☐	☐	☐	☐	☐	☐
Receiving site *(if completed in support of a Contaminated Soil Relocation Agreement)*		☐	☐	☐	☐	☐	☐
Offsite impacted property / management area		☐	☐	☐	☐	☐	☐

If Other is specified above, please explain: *(applicable or excluded guidance, protocols or policies specific to the site)*

- vapour attenuation factors;
- generic numerical vapour standards in Schedule 11 of the Regulation; or
- wildlands land use.

SUMMARY OF SITE CONDITIONS

Section 4.6. AEC and Contaminant Summary - Other features

4.6 AEC and Contaminant Summary

AEC / APEC # *(Use same #s as for APECs in Table above)*	Contaminant of Concern	Medium *(e.g., soil, groundwater, sediment, vapour, surface water, other)*	Maximum Measured Concentration (indicate units)	Extent of Contamination	
				Area (m^2)	Depth Range (m)

Notes:

- if a **site type** exists for the site, what is the type number (1A, 1B, 2 or 3);
- if the site has been classified a **high risk** site, what are the high risk site conditions; and
- if **background soil or groundwater** quality levels have been set under **Protocols 4 or 9**, what background levels have been approved for each applicable substance.

SUMMARY OF SITE CONDITIONS

Section 5.6. Remediation Issues

For type 1B, 2 and 3 sites, list the principal risk control clauses.

5.6 Remediation Issues

Identify remaining issues if the remediation plan, confirmation of remediation report or risk assessment report does not include CSR specified information and current applicable ministry protocols, guidelines, checklists, etc. for these documents..

For type 1B, 2 and 3 sites, please list the principal risk control clauses in this section.

QUESTIONS?

Next speaker will be Dave Mitchell on the Pre-Approvals

PRE-APPROVAL AND DIRECTOR DECISIONS

Relevant MOE Document – Protocol 6 (Eligibility of Applications for Review by Approved Professionals)

Relevant Section: Section 4.6 (Page 4):

Pre-approval is needed for the Ministry for the types of applications detailed in Table 2 of Protocol 6 (Page 5)

Useful Reference: Protocol 6 pre-approvals issued by the Ministry to date:

http://www.env.gov.bc.ca/epd/remediation/approvals/

PRE-APPROVAL AND DIRECTOR DECISIONS

Pre-approval Situations:

1. **Delineation – Full extent of contamination is not delineated / remediated.**
2. **Background Substances – Background concentrations in surface water, sediments or vapour were derived by any methods.**
3. **Involving Orders – If the site is subject to a remediation order, pollution prevention order or pollution abatement order under the Act**
4. **Greater than 5 year Approval in Principle**
5. **Risk Assessment with in-situ Hazardous Waste**
6. **Risk Assessment with:**
    a. **Probabilistic analysis**
    b. **Toxicity test**
    c. **Modification of toxicity reference values**
    d. **Derivation or use of a site-specific risk-based concentration.**

PRE-APPROVAL AND DIRECTOR DECISIONS

Items to consider for 6 Pre-approval situations

1. **Delineation – Full extent of contamination is not delineated / remediated.**

- **Fact Sheet 16** – Remediation Liability Overview – Details the Ministry's expectations of who is responsible for what
- **Procedure: Establishing the Boundaries of a Site** – Provides guidance on how the Ministry expects boundaries to be established.
- **Admin Guidance 11** – Expectations and Requirements for Contaminant Migration – Speaks to boundary issues and how to communicate with off-site impacted owners.

PRE-APPROVAL AND DIRECTOR DECISIONS

Items to consider for 6 Pre-approval situations

2. Background Substances – Background concentrations in surface water, sediments or vapour were derived by any methods.

Only one issued to date for current Version of Protocol 6 and for copper in sediment.

3. Involving Orders – If the site is subject to a remediation order, pollution prevention order or pollution abatement order under the Act

None to date.

4. Greater than 5 year Approval in Principle

None listed, but has been done. Provide rationale (new owners, permitting issues)

PRE-APPROVAL AND DIRECTOR DECISIONS

Items to consider for 6 Pre-approval situations

5. **Risk Assessment with in-situ Hazardous Waste**
6. **Risk Assessment with:**
   a. **Probabilistic analysis**
   b. **Toxicity test**
   c. **Modification of toxicity reference values**
   d. **Derivation or use of a site-specific risk-based concentration.**

Quite a number of these have been issued to date and have included:

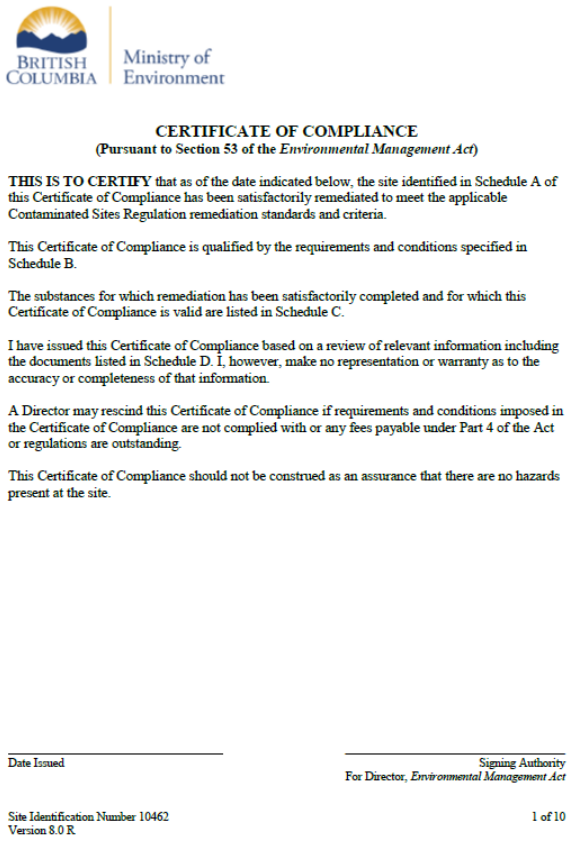
- Probabilistic RA, toxicity testing, food chain modeling, modification of TRVs, weight of evidence arguments
- Still no site specific risk based concentrations

QUESTIONS?

The next speaker will be Duncan MacDonald on CoCs…

DRAFT INSTRUMENTS- CERTIFICATE OF COMPLIANCE

- Draft generated by submission manager
- Requires edits, mostly to conditions and substances



BRITISH COLUMBIA | Ministry of Environment

CERTIFICATE OF COMPLIANCE
(Pursuant to Section 53 of the *Environmental Management Act*)

THIS IS TO CERTIFY that as of the date indicated below, the site identified in Schedule A of this Certificate of Compliance has been satisfactorily remediated to meet the applicable Contaminated Sites Regulation remediation standards and criteria.

This Certificate of Compliance is qualified by the requirements and conditions specified in Schedule B.

The substances for which remediation has been satisfactorily completed and for which this Certificate of Compliance is valid are listed in Schedule C.

I have issued this Certificate of Compliance based on a review of relevant information including the documents listed in Schedule D. I, however, make no representation or warranty as to the accuracy or completeness of that information.

A Director may rescind this Certificate of Compliance if requirements and conditions imposed in the Certificate of Compliance are not complied with or any fees payable under Part 4 of the Act or regulations are outstanding.

This Certificate of Compliance should not be construed as an assurance that there are no hazards present at the site.

Date Issued

Signing Authority
For Director, *Environmental Management Act*

Site Identification Number 10462
Version 8.0 R

1 of 10

DRAFT INSTRUMENTS- CERTIFICATE OF COMPLIANCE

Schedule A

- Generated by submission manager
- If metes and bounds, this should be described here

Schedule A

The lands covered by this Certificate of Compliance are located adjacent to and northeast of 1314-1348 Southwest Marine Drive, Vancouver BC, which is more particularly known and described as:

Commencing at the northeast corner of Lot 6, Block 1, Plan 2067, District Lot 318, NWD Lot 7, Block 1, Plan 2067, District Lot 318, New Westminster Land District;
Then N 61o 13' 09.77" W 0.939m;
Then N 61o 13' 09.77" W 21.61m;
Then S 73o 10' 38.78 E 7.916m;
Then S 61o 11' 51.54 E 13.867m;
Then S 28o 48' 08.46" W 1.683m to point of commencement.

The approximate centre of the site using the NAD (North American Datum) 1983 convention is:

Latitude: 49° 12' 11.82"
Longitude: 123° 08' 9.27"

Schedule A

The site covered by this Certificate of Compliance is located at 1314-1348 Southwest Marine Drive, Vancouver BC, which is more particularly known and described as:

Lot 4, Block 1, District Lot 318, Plan 2067, New Westminster Land District
PID: 014-052-113

Lot 5, Block 1, District Lot 318, Plan 2067, New Westminster Land District
PID: 014-052-121

Lot 6, Block 1, District Lot 318, Plan 2067, New Westminster Land District
PID: 014-052-130

Lot 7, Block 1, District Lot 318, Plan 2067, New Westminster Land District
PID: 014-052-148

Lot 8, Block 1, District Lot 318, Plan 2067, New Westminster Land District
PID: 014-052-156

Lot 9, Block 1, District Lot 318, Plan 2067, New Westminster Land District
PID: 014-052-164

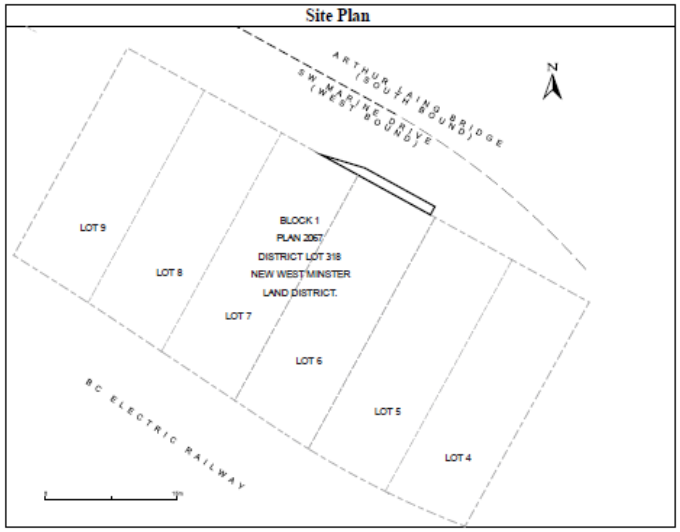
The approximate centre of the site using the NAD (North American Datum) 1983 convention is:

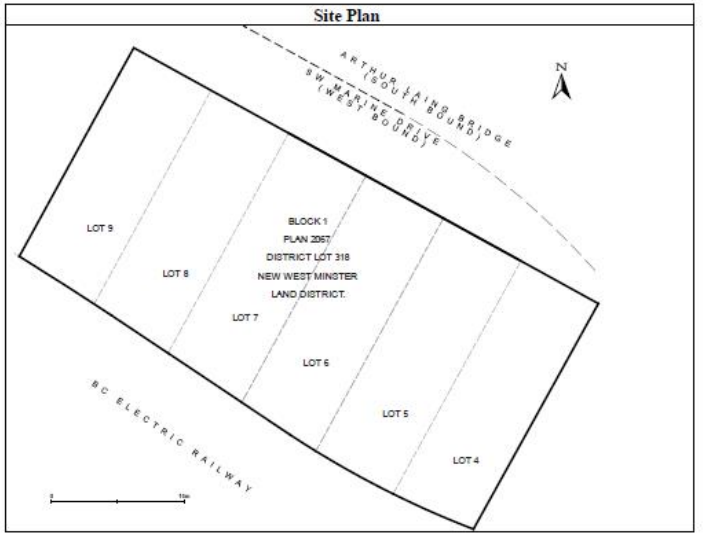
Latitude: 49° 12' 11.33"
Longitude: 123° 08' 10.30"

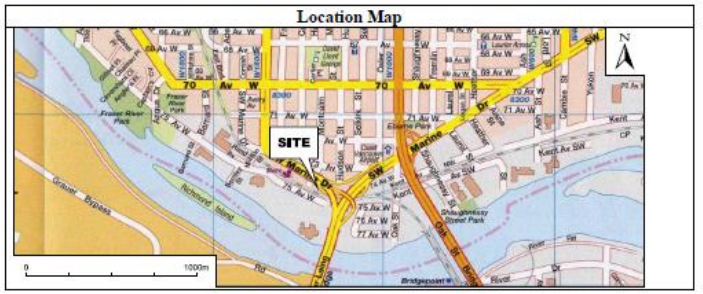
DRAFT INSTRUMENTS- CERTIFICATE OF COMPLIANCE

Schedule A continued

- Follow rules regarding figures







DRAFT INSTRUMENTS- CERTIFICATE OF COMPLIANCE

Schedule B

- Use the MOE templates
- Edit according to remediation type
- The signing director will read this schedule!

Schedule B

Requirements and Conditions

1. Any changes in land, vapour, water or sediment uses must be promptly identified by the responsible persons in a written submission to the Director. An application for an amendment or new Certificate of Compliance may be necessary. The uses to which this condition applies are described in Schedule C and in the site investigation documents listed in Schedule D.

   The documents listed in Schedule D indicate that vapour attenuation factors were applied to meet Contaminated Sites Regulation numerical and or risk-based standards at and adjacent to the site. These vapour attenuation factors were selected based on assumptions about the structures, locations and depths of buildings and trenches existing or expected at and adjacent to the site. These assumptions include the following:

   (a) Building construction at the site will be limited to slab-on-grade;
   (b) Outdoor attenuation factors or slab-on-grade attenuation factors are applicable adjacent to the site.

   Any inconsistencies that arise between the structures, locations and depths of proposed or constructed buildings or trenches at or adjacent to the site and the range of structures, locations and depths of buildings or trenches assumed in the selection of vapour attenuation factors in the documents listed in Schedule D must be promptly identified by the responsible persons in a written submission to the Director. An application for an amendment or new Certificate of Compliance may be necessary.

2. The principal risk controls which must be present or implemented and must be maintained at the site include the following:

   a) Future buildings at the site must be of slab-on-grade construction
   b) A health and safety plan must be prepared by a qualified professional to minimize the inhalation of vapour contamination by archaeologists, construction, and utility workers while completing activities in a trench setting in the northern area of Lot 6 defined by Figure 1 in the Performance Verification Plan (Report #1).
   c) Deep rooting vegetation must not be established in the northern area of Lot 6 defined by Figure 1 in the Performance Verification Plan (Report #1).

DRAFT INSTRUMENTS- CERTIFICATE OF COMPLIANCE

Schedule C

- Use the MOE templates
- Follow the rules!
  - Separate by substance class
  - Separate by media use
  - Use regulated names, etc.

Schedule C

Substances and Uses

Substances remediated in soil for urban park and residential soil use:

To meet numerical remediation standards:

- *toluene*
- *VPHs*
- *zinc*

To meet risk-based remediation standards:

- *benzene*
- *ethylbenzene*
- *xylene total*

Substances remediated in water for aquatic life marine water use:

To meet numerical remediation standards:

- *lead*
- *VHwC6-C10*
- *ethylbenzene, toluene*
- *pyrene*

To meet risk-based remediation standards:

- *LEPHw, VPHw*
- *Benzene*
- *naphthalene*

Substances remediated in water for drinking water use:

To meet numerical remediation standards:

- *lead; lithium*
- *VHwC6-C10*
- *Xylene total*

To meet risk-based remediation standards:

- *arsenic*
- *Benzene, ethylbenzene, toluene*

QUESTIONS?

The next speaker will be Paul Webb on Determination…

Schedule C

Substances and Uses

Substances evaluated in soil for residential land soil use:

To meet numerical remediation standards prescribed for defining whether a site is contaminated:

- VPHs;
- Benzene, Ethylbenzene, Styrene, Xylene;
- Bromodichloromethane, bromoform, bromomethane, carbon tetrachloride, chlorobenzene, chloroethane, chloroform, chloromethane, dibromochloromethane 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, dichloromethane, 1,2-dichloropropane, cis-1,3-dichloropropylene, trans-1,3-dichloropropylene, methyl t-butyl ether (MTBE), 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, trichlorofluoromethane and vinyl chloride.

Substances evaluated in vapour for residential vapour use:

To meet numerical remediation standards prescribed for defining whether a site is contaminated:

- Benzene, bromobenzene, bromodichloromethane, bromoform, bromomethane, carbon tetrachloride, chlorobenzene, , chloroethane, chloroform, chloromethane, decane (nC10), dibromochloromethane, 1,2-dibromo-3-chloropropane, dibromomethane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, dichlorodifluoromethane, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, dichloromethane, 1,2-dichloropropane, 1,3-dichloropropane, ethylbenzene, n-hexane (nC6), methyl t-butyl ether (MTBE), styrene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethylene, toluene, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, trichlorofluoromethane, 1,2,3-trichloropropane, vinyl chloride, VPHv and xylenes (mixture).

Substances evaluated in water for marine water aquatic life water use:

QUESTIONS?

Next speaker will be Dave Mitchell on Site Risk Classification

SITE RISK CLASSIFICATION

Relevant MOE Documents:

- **Protocol 11:** Upper Cap Concentration of Substances
- **Protocol 12:** Site Risk Classification, Reclassification and Reporting

Other References:

- **Protocol 12:** Ministry Response to Comments
- **Q&A's** – Site Risk Classification
- **Protocol 16:** Determining the Presence of Mobility of NAPL and Odourless Substances

SITE RISK CLASSIFICATION

Protocol 11: Upper Cap Concentration of Substances

Provides upper cap concentrations for:

- Schedule 4 and 5 substances in soil (Table 1, 2, 3 and 4)
  Human Health and Environmental Toxicity in separate tables
- Schedule 6 substances in groundwater (Table 5)
  Provided for AW, IW, LW and DW standards
- Schedule 9 substances in sediment (Table 6)
  Provided for Marine, Freshwater (Typical and Sensitive)
- Schedule 10 soil (Table 7)
  Provided for AL, PL, RL, CL, IL in soil and DW water
- Schedule 11 substances for soil vapour (Table 8)
  Provided for AL, PL, RL, CL, IL

SITE RISK CLASSIFICATION

Protocol 12: Site Risk Classification, Reclassification and Reporting

HIGH RISK if:

1. Mobile NAPL is present
2. Upper Cap Concentrations are exceeded and exposure pathway present

- If High Risk, then it can't be CSAP'd, absent Ministry pre-approval

- Classification is based upon current conditions, but also must consider the proposed use.

SITE RISK CLASSIFICATION

Protocol 12 Exemptions:

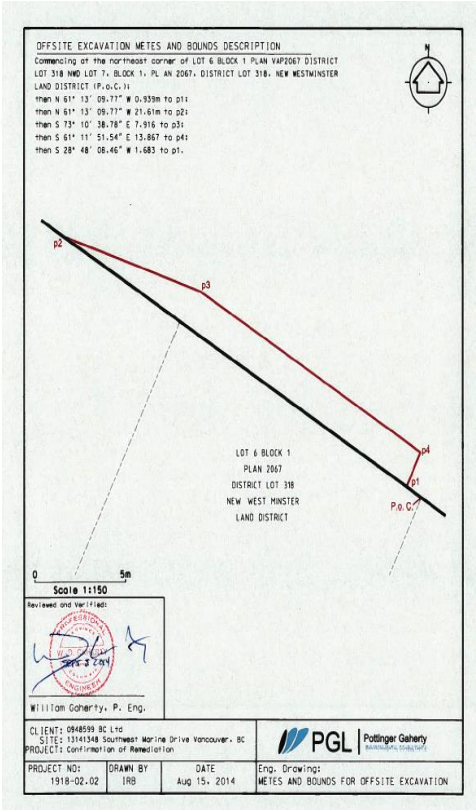
- RL heating oil tanks
- Determination of no contamination

QUESTIONS?

Next speaker will be Duncan MacDonald and Dave Mitchell on Other Documentation

DOCUMENTATION

- Land Title
- Legal Plans
- Road Dedications and Boundary Issues



PSI AND DSI CHECKLISTS
GUIDANCE DOCUMENTS 10 AND 11

Guidance Document 10: PSI Checklist

Guidance Document 11: DSI Checklist

- Fill it out as best you can.
- Everybody recognizes these forms are really dated.

Note **Mandatory** Items:

- All laboratory data relied upon – tables not sufficient
- Lab QA/QC
- Borehole Logs
- Site Maps showing sampling locations

SITE REGISTRY AREA SEARCH AND SITE SEARCH

- Ministry and CSAP Expect these to be no older than 6 months
- If any Site Registry filings are known to have occurred within the 6 months, order new documents.
- Consider if surrounding Site Registry listings are relevant to the Site. Remember that the Site Registry indicates when a Site was last updated. If current, then additional detailed reports may be required.
- Ecolog Searches – The Ministry has expressed a preference for BC Online results. If Ecolog is used, then maybe check with the Ministry first.

IN CLOSING…

We'd like to thank Duncan, Dave and Paul for their time and hard work.

Please feel free to contact us if you have any questions from today!

A new Webinar series will be starting in 2015. We welcome any suggestions for future presentations.