CSAP
Contaminated Sites Approved Professionals of British Columbia

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Risk Assessment Special Interest Group

February 5, 2019 – Meeting "Take-aways"

RAAP Attendees:

Allard, Patrick
Anderson, Michelle
Cameron, Marc (call-in)
Kennedy, Tara (call-in)
King, Blair
McDonald, Blair
Miller, Trish
Ott, Cindy
Power, Beth
Purewal, Mandeep
Quaglia, Stefan
Rankin, Mike
Reid, Lesley
Reimer, Sam
Sutherland, Greg
Thomas, Christine
Wagenaar, Audrey
Wilson, Ross
Zapf-Gilje, Reidar

ENV Attendees:

Evans, Peggy
Hains, Kim
Jerade, Liliana
Love, Sydney
McCammon, Alan
Nelson, Jasen
Osachoff, Heather
Puhallo, Jennifer (call-in)
Skelly, Kerri
Yetskalo, Valentina
Zanini, Lavinia

1. Risk assessment approach to high risk sites
    a. ENV working through this and has provided site-specific guidance.
    b. CSAP to request from ENV (Peggy)
2. Technical Review Committee – annual cycle of identifying Special Projects
    a. Welcome proposals – template is on the CSAP website for submissions.
    b. Risk APs could meet/communicate and prioritize topics and/or brainstorm with ENV to identify priority areas.
3. Bioaccumulative substance – definitions removed from Procedure 8 so posing challenges to risk assessors
    a. Sites that are black and white are simple; grey area sites (intermediate combinations of habitat quality/substances/receptors) are more problematic – it difficult to give direction because so site-specific. NOTE: important to provide rationale and look at site-specific conditions
    b. Definition of bioaccumulative substances – ENV is looking at a few definitions (e.g., log log Kow >4.5, BAF >20000, BCF >2000); might draft a list of priority substances (like PFOS, MeHg not typically caught by Kow); CSAP guidance (SLR document) may need updating due to changes in practice [future project?].
    c. Another problem is how to choose BAF/BCF variable across sources – need to know the toxicology and rationale behind QP/AP use of any values and document it in RA and in RA review.

d. Discussion: need definition for bioaccumulative substances – ENV planning to remedy this soon and add to Procedure 8. ENV also to prepare a recommended procedure for evaluating bioaccumulative substances.
e. Collect site-specific tissue data, but also need to know how to evaluate it

4. Groundwater plume stability
    a. CS-link just came out on this topic with new policy – uses wording in SLRA for two years; for DRA could be one year; but what about other/alternative methods to define a stable plume? For example, from TG8? What is a plume?
    b. Noted that a registered professional hydrogeologist would conduct the evaluation as part of the site investigation and it would be reviewed by the Standards AP, within a submission for a risk-based instrument (i.e., plume stability in and of itself is not an RA issue).
    c. Group noted that maybe some transition sites will need ENV pre-approval to go to P6 – professional judgement is another piece of the puzzle.
    d. If CSAP can document sites where the proposed new policy on plume stability would significantly affect the ability to obtain an instrument in a reasonable time, and at a reasonable cost, that would be helpful to ENV – or situations where professional judgement might be merited, where policy could be varied – CSAP to send some recommendations].
    e. Intent is to update TG8 on groundwater – so rolled into DSI requirements
    f. Technical Bulletin 2 (refs Technical Guidance 11 DSI checklist) was prepared for ENV use: that document includes requirement for "stable" – in the context of this meeting, risk AP should look for the standards AP to review hydrogeologist QP's statement in DSI and sign-off on it. NOTE: Standards AP for site delineation – a risk AP can request documentation.
    g. There are scenarios where a plume is not stable, but the receptors are so distant that exposure is unlikely.
    h. Does CSAP want to revisit PAC guidance on reviewing RAs? – e.g., use of TB2. It might be time to update CSAP guidance?
5. Notification of independent remediation
    a. ENV will take this question and provide advice in future – this part of regulation and act is general, so interpretation is challenging.
    b. Definition of remediation is at issue – is risk assessment remediation (not physical; not movement of soil) – if yes, is that a trigger? Independent remediation might not include risk assessment?
    c. There is a timing issue – NOIR and submission to CSAP

    d. CSAP to consider if this is an urgent issue (talk to detailed screeners) and if it is, then CSAP should flag to ENV; Trish will follow-up with Tara to communicate issues.
6. Risk managed high risk sites
    a. Can an AP apply for a risk-based COC under P6 without ENV reclassification? No – the site has to be reclassified AND an AP needs approval of ENV to do the review (Section 4.4 of P6 – a priori approval, under "additional services and function" is way to make submission). Protocol 6 future/possible revision to add this clarity. These risk manage sites are STILL high risk.
    b. When are such sites approved? Depends on many factors like: why it is being risk managed and how, nature of risk, ENV capacity – each decision is independent – no precedent set.
7. Risk Controls
    a. PVPs and COCs are posted on CSAP website – there are inconsistencies over time and evolution of practice and individuals.
    b. For example, do you need a PVP for restrictions on DW use?
    c. Want to have consistency in level of protection – and avoid extremes either way.
    d. PVPs needed when explanation of risk controls beyond Schedule B is merited
    e. Examples:
        i. Restriction on deep-rooting vegetation – policy would be helpful here from a bigger picture perspective (in some cases there are unintended consequences of habitat loss if the RA is $$ or concludes risks present). Pathway elimination, like is provided for in SLRA, is a policy option for some land uses like high density – but might have precluding conditions (species-at-risk, safety (tree fall), bioaccumulatives). Anchors back to protection goal for site. In general, plants are not driving risk management, so we don't want to overemphasize this exposure pathway in PVP/Schedule 2 unless there are site specific conditions (e.g., salt, anoxia, pH, culturally important plants).
        ii. Need for inspection of paved surfaces? – site-specifically, decisions have been made that inspection is not needed when it can be "reasonably be expected" that surface will be maintained (e.g., road and sidewalk); this approach was communicated broadly at that time; but - would that extend to a Strata? Concrete vs pavement? Existing pavement vs installed pavement (why paved?)? Presence of pavement and clean fill or bed materials? What is nature of contamination that is being covered? What is HQ/PCOC? What is likelihood of accessing that area now and in the future? Will it be a change in site conditions? Brought up "intrinsic cover."

iii. Restrictions on various aspects of land use (e.g., no fruit trees, no vegetable garden etc.) – have the risk calculations been made? Can they be made (future plants like median gardens, future blackberries, fruit trees on CL/IL land, etc.)? Predicting the future is problematic – we can expect to run into our current decisions increasingly… going forward.
iv. Slab on grade buildings provides de minimus approach to get a COC – depending, could be Type 1B or Type 2. AG11 is another aspect.

f. Potential solutions:
i. Key is to provide RATIONALE and document professional judgement
ii. Consider doing (aka "always do"?!) RA as if pavement wasn't present – to characterize risk without risk control; provides information on degree of reliance on risk control. Connects to idea of taking into consideration "low threat" (CA speaker at CSAP meeting about two years ago). Current approach is - If no pathway, then don't need to do RA for that pathway – this approach becomes most problematic for off-site parties – AG11.
iii. Consider doing RA with several scenarios – that would help with AG11 and communicating to affected parties. Preference is to avoid onerous restrictions on land use.
iv. Idea of restrictive covenant to provide certainty – but, does that lessen reliance on PVP?

g. Discussed SLRA 1 m vs DRA - noted that some of those assumptions can restrict future use.
h. AG14 – Type 2 site, might be driven by deep-rooting vegetation (therefore, possibly requiring a PVP). CSAP had a working group that looked at Schedule B conditions with ENV input –AG14 text wrt deep-rooting plants currently with the ENV. CSAP to consider whether CSAP wants to revisit their work in light of the passage of time, since document over a year old. Tara to communicate with Peggy, in Peter's departure.
i. WRT Protocol 1, "we" should try to find a memo from 2006-2008 (?) that was prepared that reviewed P1 and identified what should be retained and what should be dropped. Can any of us involved in DERA (Sam, Cindy, Blair, Beth, ?) find it?

8. Performance Assessment and Detailed Screening
a. Detailed screeners are subcommittee of PAC; established when Dave Lockhart turned screening over to CSAP.
b. Revisiting wording of conditions for CoCs; reviewed recent instruments to look at wording and developed consistent wording for common risk controls, provided below in italics (note, these do not take into account considerations covered earlier in this meeting today; 2012 building code is a given for 2019+ developments)):

i. *Groundwater from the Site must not be used as a source of drinking water.*
ii. *Future buildings on the Site will include up to (x) level(s) of underground parkade with a mechanical ventilation system.* [PAAD has been used, so risk control required]
iii. *The vapour mitigation system installed at the Site must continue to operate in accordance with the system's detailed design specifications, as provided in X report listed on Schedule D.*
iv. *Soil contamination must remain a minimum of 1 m below the grade of <<the Site or the area of the Site described by the below metes and bounds>> as of <<date>>.* [might want to describe geodetic elevation] But what about sites that slope? There have been questions about moving contamination (within and outside any metes and bounds) and still keeping it >1m; might trigger other aspects of applicable regulations. There was discussing about adding clarity to the wording of "soil contamination" – to in situ, currently located, etc.].
v. *Vegetation with roots that extend beyond 1 m below ground surface must not become established <<at the Site or within the area of the Site described by the following metes and bounds>>.* [not merited everywhere - use at discretion, if merited?]

c. Again, we circled back to wording in relation to what are consequences if risk control fails… PVP could spell out response where merited, if adds value.
d. Most common issues (not only RA aspects) based on detailed screening:
    i. Not using the Annotated SoSC *[cslink just came out; new annotated SoSC pending from CSAP]*
    ii. Principal risk controls are inconsistent between the PVP, SoSC and draft CofC Schedule B (i.e., make sure that conditions listed in PVP, CofC and SoSC *(and ideally the RA itself, if they describe risk controls)* are consistent) *[important that wording is identical for stated risk control; PVP may elaborate, but core language should be consistent*
    iii. Listing of substances remediated to risk-based standards is not consistent between SoSC and draft CofC (e.g., non-prescribed substances or prescribed substances for non-prescribed uses) *[Procedure 12 is out date, CAS numbers have come in; detailed screening subcommittee has started discussion with ENV]*

iv. Schedule B Clause 1 assumptions on CoC should not be included as principal risk controls in PVP – e.g., DSI assumes that a building will be slab on grade, which is not a risk control, whereas groundwater not being in contact with the foundation is a risk control.
v. Risk control wording is not clear (e.g., 1 meter of clean soil cover or asphalt cap).
vi. Risk controls are more onerous than necessary based on likelihood of exposure/residual concentrations.

e. ENV and RAAP communication
   i. Site- or case-specific decisions
   ii. QUESTIONS are to go to site@gov.bc.ca and from there they get routed to the right person.
   iii. Heather O. for risk assessment topics, but prefer that we use the site@gov.bc.ca
   iv. When in a PA – critical that questions that come from the submitting AP:
      1. Are flagged as being the subject of a PA
      2. Provide site number associated with questions, especially when the question is not generic in nature. That way it can go to file.
      3. When a PA is in progress - Under very preliminary discussion – have the DM ask the question of ENV (drafted by submitting AP), rather than the submitting AP.
      4. No phishing to multiple individuals at ENV.
   v. Lessons learned concept is being passed over to having the TRC's Q&A's so they get posted.
   vi. Questions related to when do we need a pre-approval for P6?
      1. Use site@gov.bc.ca
      2. Use the available guidance before seeking input from ENV, but better to discuss before it goes into P6 process with CSAP so that it gets addressed up-front.
   vii. Working together on risk aspects
      1. Under TRC, reviews get conducted on ENV draft documents at the request of ENV (budget is set aside from this);
      2. ENV can also identify topics for "Special Projects" – template to be used and will go into evaluation process by TRC.
      3. Working group approach to technical topics might be helpful to ENV - pending