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| A picture containing text, clipart  Description automatically generated | **ENVIRONMENTAL SITE ASSESSMENT CHECKLIST**  Physical Address: 6534 Airport Road, Fort St. John, B.C. V1J 4M6 Mailing Address: BC Energy Regulator, 6534 100th Ave, Fort St. John, B.C. V1J 8C5 Phone: (250) 794-5200 | Date Received |

*A completed copy of this form must be provided to the Regulator as part of an Environmental Site Assessment Report submitted under Section 7(b) of the Dormancy and Shutdown Regulation and as part of an application for a Certificate of Restoration under Section 41(1) of the Energy Resource Activities Act.*

THIS IS AN AUDITABLE DOCUMENT

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| **ADMINISTRATION** | | | | | | | | | | | | | |
| Applicant Name: | | | | | | | | | | | | | |
| Address: | | | | | | | | | | | | | |
| City, Province, Postal Code: | | | | | | | | | | | | | |
| Contact: | | | Email: | | Phone: | | | | | | | | |
| Well Permit / Facility No: | | Well Name: | | Well Location: | | | | | | | | | |
| **A** | **SITE ASSESSMENT SUMMARY** | | | | | | **Yes** | **No** | | **N/A** | | **Note** | |
| Environmental Site Assessment for presence of contamination completed? | | | | | | |  |  | |  | | 1 | |
| Is/was the site contaminated? | | | | | | |  |  | |  | | 2 | |
| If the site was contaminated and no further remediation is/was required? | | | | | | |  |  | |  | | 3 | |
| If the site was contaminated and further remediation and/or risk assessment is/was required? | | | | | | |  |  | |  | | 4 | |
| **B** | **REGULATORY COMPLIANCE** | | | | | | **Yes** | **No** | | **N/A** | | **Note** | |
| Was the well head properly cut and capped and report submitted? | | | | | | |  |  | |  | | 5 | |
| Were the oil and gas activity permit conditions met? | | | | | | |  |  | |  | | 6 | |
| Was the drilling waste disposal information submitted? | | | | | | |  |  | |  | | 7 | |
| Was a Site Profile provided? | | | | | | |  |  | |  | | 8 | |
| Was a Site Classification report provided? | | | | | | |  |  | |  | | 9 | |
| Was a Notification of Independent Remediation submitted to Ministry of Environment and Climate Change Strategy? | | | | | | |  |  | |  | | 10 | |
| Was a Notification of Offsite Migration submitted to Ministry of Environment and Climate Change Strategy? | | | | | | |  |  | |  | | 10 | |
| **C** | **INVESTIGATION AND REMEDIATION** | | | | | | **Yes** | **No** | | **N/A** | | **Note** | |
| Are all Areas of Potential Environmental Concerns (APECs) identified? | | | | | | |  |  | |  | | 11 | |
| Are all Potential Contaminant of Concerns (PCOCs) for each APEC identified? | | | | | | |  |  | |  | | 11 | |
| Have all reasonable efforts been undertaken to identify APECs? | | | | | | |  |  | |  | | 12 | |
| Are all applicable investigation standards identified and applied? | | | | | | |  |  | |  | | 13 | |
| Are all APECs investigated? | | | | | | |  |  | |  | | 14 | |
| Are all PCOCs for each APEC tested? | | | | | | |  |  | |  | | 14 | |
| Is the investigation and sampling rationale for each location provided? | | | | | | |  |  | |  | | 14 | |
| Is a comparison table with laboratory results and applicable standards provided? | | | | | | |  |  | |  | | 15 | |
| Are all applicable remediation standards identified and applied? | | | | | | |  |  | |  | |  | |
| If contaminated, are all Areas of Environmental Concerns (AECs) remediated? | | | | | | |  |  | |  | | 16 | |
| Are all Contaminant of Concerns (COC) considered remediated? | | | | | | |  |  | |  | | 16 | |
| Are the minimum reporting requirements met? | | | | | | |  |  | |  | | 17 | |
| **D** | **DATA QUALITY** | | | | | | **Yes** | **No** | | **N/A** | | **Note** | |
| Are the sampling procedures provided? | | | | | | |  |  | |  | | 18 | |
| Were all samples submitted to the laboratory in time? | | | | | | |  |  | |  | | 19 | |
| Were all samples extracted and analysed in the laboratory in time? | | | | | | |  |  | |  | | 19 | |
| Are all laboratory reports included? | | | | | | |  |  | |  | | 19 | |
| Is a chain of custody and sample integrity receipt from the laboratory included? | | | | | | |  |  | |  | | 19 | |
| Are relative percent differences provided and within acceptable range? | | | | | | |  |  | |  | | 20 | |
| Is groundwater sampling QA/QC provided? | | | | | | |  |  | |  | | 21 | |
| **E** | **CONCLUSION VALIDITY** | | | | | | **Yes** | **No** | | **N/A** | | **Note** | |
| Are investigation conclusions provided and valid? | | | | | | |  |  | |  | |  | |
| If contaminated, are confirmation of remediation conclusions provided? | | | | | | |  |  | |  | | 15 | |
| **F** | **PROFESSIONAL RELIABILITY** | | | | | | **Yes** | **No** | | **N/A** | | **Note** | |
| Were samples collected or supervised by a qualified environmental professional? | | | | | | |  |  | |  | | 22 | |
| Is the professional or technologist qualified to sign the assessment report or CoR application? | | | | | | |  |  | |  | | 22 | |
| **G** | **PROFESSIONAL SIGNATURES** | | | | | | | | | | | |
| I confirm that the investigations referred to above have been conducted in accordance with approved procedures and standard professional practice. I confirm the above information to be true, based on current knowledge as of the date completed. Where data gaps may exist in the information that this submission is based upon, I have used my professional judgement. I confirm that I have demonstrable experience in conducting investigations of the type reviewed above.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Print Name Signature & Professional Seal Date (YYYY/MM/DD) | | | | | | | | | | | | |
| **H** | **REGULATOR USE ONLY** | | | | | **Yes** | | | **No** | | **N/A** | |
| Are all the regulatory requirements are fulfilled? | | | | | |  | | |  | |  | |
| Are investigation and remediation complete? | | | | | |  | | |  | |  | |
| Is the quality of data acceptable? | | | | | |  | | |  | |  | |
| Are investigation and remediation conclusions acceptable? | | | | | |  | | |  | |  | |
| Can the Regulator rely on the professional who submitted the application? | | | | | |  | | |  | |  | |
| Is the site ready to be certified? | | | | | |  | | |  | |  | |
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**Environmental Site Assessment Checklist Notes**

1. Environmental Site Assessment is intended to assess the presence or absence of all identified potential contaminants of concern (PCOCs) within the areas of potential environmental concern (APECs). Environmental Site Assessment is considered complete when all identified PCOCs within the APECs are assessed adequately in a manner acceptable to the Regulator.
2. Section 39 of EMA defines a contaminated site and Section 11 of the CSR, specifies when a site is considered contaminated. The numerical standards must be applied in determining whether a site is a contaminated site.

A site is considered contaminated if substances in the soil, surface water and groundwater, sediment or vapour at the site exceed the applicable numerical standards.

1. Site is contaminated but after consideration of site specific conditions, the impacts to the environment are adequately addressed in accordance with risk based policies and procedures acceptable to the Regulator. For example, the site is contaminated but source/pathway/receptor review demonstrates that existing and potential future receptors are adequately protected in accordance with screening level risk assessment approach acceptable to the Regulator.
2. If substances encountered during the site investigations have concentrations exceeding the applicable standards, then remediation will be required, unless any exemptions apply, in order to prevent risks to the environment and human health. As per Section 16 of the CSR, contaminated soil, groundwater, surface water, sediment and vapour must be remediated to either numerical or risk-based standards.
3. Well status must be “abandoned” and “case cut off”.
4. The reviewer should ensure that any permit conditions related to site restoration have been met. Permit conditions may be found in the well file or in the IRIS database.
5. As per Section 51 (4) of the *Drilling and Production Regulation*, within 90 days of completing a drilling waste disposal, a well permit holder must submit a report of the drilling waste disposal to the Regulator. In case of missing drilling waste disposal records, the disposal area will be considered an APEC that should be addressed.
6. The application must include all site profile information required by the site profile form in *Schedule 1* of the *Contaminated Site Regulation* (CSR).
7. A site is not eligible for a certificate of restoration if it has been classified by the Director, Environmental Management and Reclamation as being High Risk. Such sites are not eligible for a CoR and will be forwarded to the Ministry of Environment and Climate Change Strategy (MOE) for management until such time as the site is reclassified to “not a high risk” by the MOE Director. A Site Classification Report, in the form presented in Appendix 2 of the [Upstream Oil and Gas Site Classification Tool](http://www.bcogc.ca/node/5762/download), must be included with the CoR Part 1 Application package, or the Dormant Site Assessment.
8. If independent remediation was undertaken or offsite migration occurred, the applicant should provide confirmation that the applicable required notifications were submitted to the MoE.
9. The reviewer will use historical information, site visit, interviews, and other screening techniques such as Electromagnetic (EM) surveys to identify APECs. It is assumed the reviewer is familiar with upstream oil and gas operations and the associated PCOCs and understands how to identify APECs from review of the well file information. If *CSR Schedule 2* activities which have been determined to have the potential to cause contamination have occurred onsite, then all APECs due to these activities must be identified.
10. All reasonable efforts should include a thorough review of all documentation, site visit, interviews and may include other screening techniques such as electromagnetic (EM) survey.
11. The applicant should provide rationale for the identification of current and future land, sediment, and water uses and the selection of site specific factors which apply to the site. Risk-based standards cannot be used during an investigation to assess the presence of residual contamination.
12. The borehole locations and samples selected for analysis must adequately represent all APECs and all associated PCOCs.
13. The site investigation report should include a table of analytical results that presents laboratory results for each sample as well as the applicable environmental quality standards.
14. The concentration of all contaminants of concern (COCs) in areas of environmental concern (AECs) must not exceed local background concentrations or the applicable remediation standards.
15. The site investigation report must satisfy the minimum reporting requirements.
16. The application should demonstrate that samples were collected, handled, stored and preserved in accordance with the [*British Columbia Environmental Laboratory Manual*.](http://www.env.gov.bc.ca/epd/wamr/labsys/lab-manual/)
17. Samples must be submitted, extracted and analyzed in accordance with the [*Current Ministry Preservation & Holding Time Requirements*](http://www.env.gov.bc.ca/epd/wamr/labsys/lab-manual/pdf/2014/summary-of-sample-preservation-and-hold-time-requirements.pdf). The laboratory provides with its analytical report a copy of the chain of custody with sample integrity receipt form.
18. The MOE endorses the RPD < 20% limit as an estimate of acceptable QA/QC for field duplicates in contaminated site characterization. (As per Appendix 3, of the [BC Field Sampling Manual](http://www.env.gov.bc.ca/wsd/data_searches/field_sampling_manual/field_man_pdfs/fld_man_03.pdf), the quality control limit for relative percent difference is 20 %.)
19. Groundwater QA/QC procedures can include but are not limited to: decontamination of equipment, proper sample handling, field blanks, travel blanks, and field duplicates during groundwater sampling. QA/QC procedures and results should be included in the site investigation report.
20. [Information Bulletin 2015-14](https://www.bc-er.ca/files/publications/Industry-Bulletins/indb-2015-14-review-certificate-restoration-manual.pdf) *[Certification of Restoration Application Process]* provides a list of qualifications that must be met by the professional submitting an application for a certificate of restoration.

**Note**: The BC Energy Regulator is committed to the continuous improvement of its documentation. Stakeholders who would like to provide input or feedback on Regulator documentation may send comments to [ServiceDesk@bc-er.ca](mailto:ServiceDesk@bc-er.ca).

**Disclaimer:** This checklist may not cover all provisions relating to investigations, remediation and confirmation of remediation and does not replace the *Energy Resource Activities Act*, *Dormancy and Shutdown Regulation,* *Environmental Management Act* or its regulations. If there are differences oromissions in this document, the Acts andregulations apply*.*