

Environmental Assessment Program

Guide to Reviewing Environmental Impact Assessment Reports Updated March 2010

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PREFACE

The Environmental Assessment (EA) Team in Alberta Environment prepared this document with input from provincial and federal regulatory partners and industry¹.

The document will be reviewed periodically and updated to reflect current practices and information sources.

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1 INTRODUCTION

1.1 Background

Alberta Environment is responsible for ensuring that large-scale industrial and resource development projects do not adversely affect Alberta's environmental quality. The *Environmental Protection and Enhancement Act* (EPEA) and the *Water Act* govern Alberta Environment's regulatory process for proposed projects. Projects that have the potential for significant negative environmental effects may require an Environmental Impact Assessment (EIA) report as part of their regulatory submissions.

EIA reports are reviewed by multi-disciplinary teams with members from various provincial and federal agencies. The teams are led by an Alberta Environment EA Coordinator.

1.2 Purpose of the Guide

The purpose of this Guide is to provide direction and assistance to provincial, federal and, where appropriate, Third-Party Contractors² in the review of EIA reports submitted by Proponents.

This Guide provides direction to meet the requirements of the Environmental Assessment process. Alberta Environment recognizes that provincial and federal reviewers may also have other responsibilities and objectives under their own legislation associated with reviewing the information. This Guide does not address those responsibilities.

1.3 Reviewer's Responsibilities

To fulfill the requirements of the Environmental Assessment process, the reviewer must:

- Meet the deadlines set in the schedule; send in Supplemental Information Requests (SIRs) on time and inform the EA Coordinator if there are no SIRs
- Attend kick-off meetings, team meetings and clarification meetings with the Proponent
- Review sections of the EIA report that apply to the Reviewer's specific area of expertise (this includes general sections such as Project Description, Methodologies, etc.), and ensure information is complete and scientifically valid
- Have sufficient knowledge of overall content of the EIA report to determine how information in the Reviewer's section relates to other parts of the assessment

¹ Acronyms used in this Guide are listed in Appendix 1.

² A consulting team hired by Alberta Environment to review the components of the EIA report that fall within the mandate of Alberta Environment.

- Provide a list of major deficiencies within the timeframe specified by the EA Coordinator
- Focus SIRs on major impacts which have potential for significant adverse effects – ask if the answer makes a material difference to the public interest decision or an approval requirement; if not, consider not asking the question³
- Develop a preliminary list of SIRs and then review the list looking for duplicates, or SIRs that can be combined
- Check to see that information sought is not in another section of the EIA report
- Anticipate the answer to the SIR and ask follow-up SIRs if necessary rather than waiting for the response to come in
- Confirm all SIRs relate back to the final Terms of Reference (fTOR) and that requirements of the fTOR have been satisfied
- Clearly identify which questions relate to the EIA report and which relate to the approval applications
- Do not use a second round of SIRs to ask questions about the original Integrated Application
- Ensure references are properly cited
- Sort SIRs by reference
- Ensure proper SIR format and tone are used
- Ensure SIRs are clear, concise and grammatically correct
- Put editorial clarifications in Errata section
- Keep track of acronyms used and provide the list to the EA Coordinator with your SIRs

³ Some agencies have draft SIRs reviewed by senior management prior to submitting them to the EA Coordinator to ensure the right types of SIRs are being asked.

2 ENVIRONMENTAL ASSESSMENT PROCESS

Alberta's Environmental Assessment process is defined in Part 2, Division 1 of EPEA, the *Environmental Assessment Regulation*, and the *Environmental Assessment (Mandatory and Exempted Activities) Regulation*⁴. The environmental assessment information requirements for major industrial and resource development projects are specified in section 49 of EPEA. Terms of Reference issued by Alberta Environment instruct Proponents on the scope of assessment and the kinds of information that regulatory decision-makers will require.

Once deemed complete the EIA report is used by the appropriate Regulatory Board (Alberta Utilities Commission, Energy Resources Conservation Board, or Natural Resources Conservation Board) in making the decision about whether the project is in the public interest.

2.1 Integrated Applications

The EIA report and associated approval applications are often submitted together as an Integrated Application. In these cases, the EIA report and applications will be reviewed concurrently.

In some cases the information necessary to prepare the application cannot be provided until after the EIA process is completed. Such information may include the soil survey and detailed conservation and reclamation plans for in-situ operations or details of stream crossings necessary for authorizations under the *Fisheries Act (Canada)* or the *Navigable Waters Protection Act*. This missing information will not delay the Environmental Assessment review process.

3 REVIEW TEAM

Alberta Environment leads a multi-agency, multi-disciplinary review of the EIA report to

⁴ See the description of Alberta's Environmental Assessment Process at <http://environment.alberta.ca/2824.html>

determine if the information provided by the Proponent is sufficient to allow stakeholders, including regulatory decision-makers, to understand the Proponent's views about the project and its potential effects.

Alberta and Canada have a cooperation agreement with respect to the review of projects that are subject to environmental assessment requirements by both levels of government. The *Canada – Alberta Agreement for Environmental Assessment Cooperation (2005)* establishes a single process for provincial and federal departments and agencies to review EIA reports and related information. Cooperative assessments are conducted using the process mandated by the lead party, which in most cases is Alberta. Federal departments and agencies participate on the review team with provincial representatives to review the EIA report and provide advice to decision-makers.

A sample review team structure is shown in [Appendix 2](#).

3.1 EA Coordinator

The EA Coordinator is appointed by Alberta Environment and is responsible for the overall management of the review. The EA Coordinator, in consultation with the Coordination Group, will:

- a) establish the review team composition;
- b) establish the review schedule;
- c) schedule and lead the project kick-off meeting and EA School (if required);
- d) arrange team meetings with the Proponent;
- e) consolidate the SIRs from all the teams into the final package;
- f) send the final SIR package to the appropriate Regulatory Board; and
- g) consolidate the advice of the review teams into an EIA completeness recommendation to the Director⁵.

In most cases, the EA Coordinator will assume the role of Air, Water, Terrestrial and Socio-Economic Team Lead. Alberta Environment will ensure the teams have access to technical and policy specialists who can respond to specific Review Team questions.

3.2 Specialist Review Teams

Specialist Review Teams are comprised of the technical and professional experts with specific interests and expertise that make them qualified to examine the information provided in the EIA report and comment on its completeness and scientific validity. Teams may include Third-Party Contractors.

Specialist Review Teams are responsible for evaluating the information in the EIA report to ensure that the Proponent has:

- a) described the project and its collective activities;
- b) described the environmental setting for the project;
- c) described the effects of the project;
- d) discussed the significance of the effect;
- e) proposed reasonable mitigation for negative effects;
- f) described the cumulative effects;
- g) discussed the significance of residual effects;
- h) proposed reasonable plans to monitor and manage residual effects;
- i) identified issues raised by the public and proposed solutions to those issues; and
- j) used accepted scientific principles and practices in gathering and interpreting the information.

Review Team members also identify additional information that the Proponent needs to provide to completely understand the project. Review Team members are expected to subject this supplemental information to the same rigorous evaluation as the initial EIA report since the supplemental information forms part of that document and the public record.

⁵ An Alberta Environment employee appointed by Ministerial Order to make decisions under Part 2, Division 1 of the *Environmental Protection and Enhancement Act*.

3.3 AENV Approvals Review Team

Alberta Environment staff will review the EPEA and *Water Act* approval applications concurrently with the EIA report review and will provide approval SIRs to the EA Coordinator along with the rest of the Review Team.

The EA Coordinator may refer SIRs, especially those posed by Third-Party Contractors, to the AENV Approvals Review Team to confirm that the SIR is appropriate. The EA Coordinator can also arrange for AENV Approvals Review Team members to respond to Review Team questions.

3.4 Coordination Group

The Coordination Group provides a forum for discussion and resolution of issues that arise during the review. The Coordination Group also provides an opportunity to maintain consistency in review processes and decisions.

The Coordination Group is led by an EA Coordinator appointed by Alberta Environment and consists of coordinators from regulatory and planning agencies. Third-Party Contractors are not members of the Coordination Group. The Coordination Group will assist the EA Coordinator to:

- a) ensure that the relevant provincial and federal procedural requirements are being followed by the review team and the Proponent;
- b) ensure consistent application of review principles;
- c) ensure their Team Members are actively participating and are meeting deadlines;
- d) resolve issues brought forward by the EA Coordinator from individual Specialist Review Teams; and
- e) provide advice on communications with the Proponent and stakeholders.

This group also has a coordination function with respect to the review of applications required by the various regulatory agencies. The Coordination Group is also responsible for communications with senior officials and with other government and non-government stakeholders. This group may require the

assistance of key advisors for advice about policy, process or environmental issues.

4 REVIEW PROCESS

4.1 Review Schedule

A standard review schedule of 43.3 weeks ([Appendix 3](#)) has been developed to ensure that reviews are conducted in a timely manner. The schedule outlines the time commitments that will be required to complete each phase of the review. Once the Proponent submits their responses to the SIR package the EA Coordinator will provide a due date for the submission of the next round of SIRs or the EIA completeness recommendation. The due dates will be based on the general timeframes in the standard review schedule.

- 14 weeks to review the EIA report and prepare draft SIRs
- 3.5 weeks for the EA Coordinator to finalize the SIRs and send them to the Regulatory Board and for the Regulatory Board to add in their SIRs and send the final SIR package to the Proponent
- 5.8 weeks for the Proponent to prepare and submit their SIR responses
- 7.6 weeks to review the SIR responses and prepare any new SIRs
- 1.4 weeks for the EA Coordinator to finalize the SIRs and send them to the Regulatory Board and for the Regulatory Board to add in their SIRs and send the final SIR package to the Proponent
- 4 weeks for the Proponent to prepare and submit their SIR responses
- 5 weeks to review the SIR responses and for the EA Coordinator to prepare the EIA completeness recommendation
- 2 weeks to determine EIA completeness

By agreeing to participate in the Review Team, members are committing to meeting the deadlines set by the EA Coordinator.

At any point during the review process, the EA Coordinator may set a meeting between the Proponent and review teams to clarify issues, discuss information requests or potential responses or for any other reason where it may assist in the effective review of the EIA report.

Alberta Environment is tracking and reporting review performance for each of the various review stages up to the completeness decision⁶.

4.2 EIA Report Review

As noted earlier, the EIA report is part of an Integrated Application that contains information for multiple regulatory bodies. During the review of the Integrated Application, questions may arise that relate to the approval applications. A hierarchy of questions has been developed that provides clarification on distinguishing EIA report questions from questions related to the public interest decision and the associated approval applications. [Appendix 4](#) provides sample questions for reviewers to keep in mind as they go through the document.

4.2.1 Initial Technical Review

The first step in the review process is the technical review undertaken by the individual members of the Specialist Review Teams. Individuals review the sections of the EIA report and supporting information that apply to their area of expertise. While reviewers are not expected to review the whole EIA report, they should have sufficient knowledge of the overall content to determine how the information they are examining relates to other parts of the assessment.

It is important to remember that the EIA report is the Proponent's view of the project and its potential effects. The reviewer's task is to determine if the Proponent's view is reasonable and within the bounds of current scientific knowledge. The reviewer is not to use the SIR process to get the Proponent to "come around"

⁶ Performance reports are issued monthly on Alberta Environment's EA website as part of the *Environmental Assessment Statistics* document (<http://www.environment.alberta.ca/2618.html>)

to the reviewer's personal or professional way of thinking or to use the reviewer's preferred methodology.

The model input/output files that are used to conduct assessments do not need to be reviewed. The EIA report should contain detailed appendices explaining and describing the data, the model assumptions and options or switches that were used. Where the modellers have differed from the default model settings, there is often an explanation included. If an explanation has not been included, an SIR should be asked. Any major errors in the model inputs would most likely be caught by the consultant's internal quality assurance/quality control process. It is assumed that the modellers are the experts in the field and that they have set up the models as described in the EIA report.

Once individual Review Team members have completed their reviews, their analyses should be shared with the other members of their respective Specialist Review Teams. This provides an opportunity to discuss issues and combine individual opinions into a consolidated position for the team to present to the EA Coordinator. This team position includes a discussion about which parts of the EIA report have satisfied the requirements of the final Terms of Reference and those that have not.

4.2.2 Major Deficiencies Report

The EA Coordinator will set a date by which Review Team members are to provide a list of any major deficiencies in the EIA report. Major deficiencies are those that will require significant time, field work and/or costs for the Proponent. The EA Coordinator will identify these issues to the Proponent to provide them with sufficient time to gather the relevant information.

In some cases the Proponent may recommend that the review of the EIA report should stop at this point while they determine if and when the information can be gathered and provided to the team.

4.2.3 Statements of Concern (SOC)

While the review is underway the public has the opportunity to provide the Alberta Environment

Approvals Director⁷ with Statements of Concern (SOC) about the EPEA and *Water Act* approval application(s)⁸. Once the SOCs have been deemed by the Approvals Director to be from directly affected parties, they will be shared with the EA Coordinator. If the EA Coordinator believes the SOC comments will assist the Review Team in preparing SIRs the EA Coordinator will provide the SOCs to the team. Alternatively, the EA Coordinator may decide to incorporate relevant SOC comments into the SIR package.

4.2.4 Supplemental Information Request (SIR)

While the EIA report may adequately address the majority of the information required by the final Terms of Reference, additional information or clarification may be required to address some issues. The Specialist Review Teams must identify the additional or supplemental information required to clarify and understand the information provided in the EIA report. The list of questions prepared to address outstanding information is called a Supplemental Information Request (SIR).

Questions should be written down as the EIA is read. The reviewer should then go back and confirm that all of the questions on the list are warranted. The reviewer should be sure that an issue was not already addressed in another section of the application. The questions should then be rewritten using the proper format and tone. Before the list is sent to the EA Coordinator, it should be reviewed again.

After each Specialist Review Team has completed its review and prepared its SIRs, the EA Coordinator will consolidate the SIRs into a single package. Review Team members should be ready to answer questions concerning the importance and relevance of their SIRs. The

⁷ An Alberta Environment employee appointed by Ministerial Order to make decisions under Part 2, Division 2 of the *Environmental Protection and Enhancement Act*.

⁸ Although the legislation restricts SOCs to the approval applications many SOC filers provide comments on the EIA report.

EA Coordinator may organize a Review Team meeting at this stage to discuss the need for, and/or wording of SIRs, and where appropriate remove them from the list.

In general, once the SIR questions have been finalized, the EA Director will forward them to the Regulatory Board to be consolidated with the Board's technical application questions and sent to the Proponent.

The EA Coordinator will work with the Proponent to determine how long the Proponent will need to respond to the questions and share this information with the review team so they can plan for the next review phase. The EA Coordinator will check again with the Proponent as the proposed submission date nears and update the review Team on the likely submission date.

4.2.5 Supplemental Information Request Package

Every effort will be made to structure the Supplemental Information Request package so that questions related to the EIA completeness decision (see below) are separate from those related to approval requirements and the mandate of the public interest decision-maker. [Appendix 5](#) shows a sample structure for the SIR package.

4.2.6 Draft SIRs to Proponent

The EA Coordinator may send draft SIRs to the Proponent to provide early notification of potential SIRs⁹. Some Proponents may decide to begin preparing their responses to the SIRs as soon as they receive the drafts. Proponents are advised that the questions may change, be combined with others or be deleted before they are finalized, so they are proceeding at their own risk.

4.2.7 Subsequent Rounds of SIRs

While it is hoped that the supplemental information provided by the Proponent will address the outstanding issues in the EIA report, a second round of SIRs is possible. However,

⁹ This package will not contain the Regulatory Board's technical application questions.

this should only occur if there is no other way to resolve matters that are still outstanding. In any event, if a second round is necessary, it will be handled in the same manner as the first one.

The second round of SIRs is not an opportunity to revisit the original EIA report material – they will focus on the responses to the first round of SIRs. However, if the Proponent provided new or additional project information with the SIR response the Review Team may ask questions about the new information.

4.2.8 Differences of Opinion within Review Team

On occasion there may be unresolved differences of opinion concerning the Review Team's position on an issue. Developing an Issues Summary provides a structured format for documenting the issue and developing a final resolution. The Issues Summary should contain the following information:

- Issue (indicate Terms of Reference and EIA report source reference)
- Background
- The Proponent's view
- The various agency views
- Scientific support for the recommendation
- Potential resolution or alternative points for consideration in resolving the issue
- Contacts (Review Team Specialist and EA Coordinator e-mails and phone numbers)

If, after thoroughly discussing the issue and opinions within the Specialist Review Team, the issue is still unresolved the EA Coordinator should identify the position of the majority of the team and the rationale for the position. The matter should then be referred to the Coordination Group for resolution. If in the end there is still a disagreement, the Coordination Group should forward the issue to senior management within their respective organizations who can advise the EA Director of Alberta's position. The decision process and the rationale for the decision should be clearly documented for future reference by the EA Coordinator or EA Director.

4.3 Completeness Decision

The EIA report is a key component in determining if a proposed project is in the public interest and how it should be managed. In that sense, it is closely linked to the applications for approvals or authorizations that may be required from various provincial or federal departments.

The key decision with respect to an EIA report is that it is complete. Completeness does not imply that the potential effects are acceptable, nor is it an indication of approval by government or individual reviewers or their agencies. Completeness simply means that the Proponent has satisfied the information requirements specified in the EIA report Terms of Reference, and that the information presented is supported by scientific and/or traditional evidence.

For an EIA report to be considered complete, the Proponent must provide the information requested in the final Terms of Reference. Essentially, the EIA report must provide information about the following:

- the nature of a project;
- the environmental setting, including socio-economic conditions, in which it would occur;
- the effect that a project is expected to have on that setting;
- the mitigation a Proponent will undertake to minimize or mitigate negative effects; and
- management plans and monitoring a Proponent will undertake to manage negative residual effects that cannot be mitigated.

Once the Specialist Review Teams have completed their review of the original EIA report and any supplemental information provided by the Proponent, the EA Coordinator will ask the Review Team members if they are satisfied the EIA report is complete¹⁰.

¹⁰ Ideally Review Team members will acknowledge that the EIA report is complete. More frequently however Review Team members feel more comfortable indicating that they have no further questions.

The EA Coordinator, with advice from the Coordination Group as required, will prepare a recommendation to the EA Director concerning completeness. The recommendation will:

- a) confirm that the Team has reviewed the EIA report and believes it meets the completeness test as described above; and
- b) identify the primary issues raised in the EIA report and review.

The EA Coordinator will identify the information that was reviewed and discuss how the Proponent has addressed outstanding issues. The EA Coordinator will inform the EA Director of any matters that, while adequately addressed in the EIA report, may still be of concern to regulators.

The EA Director will consider the EA Coordinator's recommendation, and any advice from other government agencies as required, and make a decision concerning the completeness of the EIA report. However, the EIA report completeness is entirely an Alberta Environment decision. The decision also concludes any cooperative assessment process initiated under the *Canada – Alberta Agreement for Environmental Assessment Cooperation*. While provincial and federal representatives may continue to communicate on project-related matters, each level of government proceeds to make its own decisions concerning the acceptability of the project.

5 SUPPLEMENTAL INFORMATION REQUEST GUIDANCE

Given the time commitments required, reviewers should ensure that they have allotted adequate time for the review of the EIA report and the preparation of SIRs so that they can be submitted to the EA Coordinator by the assigned deadline.

To ensure that questions do not lead to erroneous responses and that responses can be provided in a timely manner, they should be clear, concise and grammatically correct. Poorly worded or confusing questions will most often result in inadequate answers and may lead to subsequent rounds of SIRs.

Reviewers should note that not all proposed questions will be incorporated into the final SIR package and that some may be edited, combined with other questions or deleted. Wherever possible, the EA Coordinator will consult with reviewers about changes to questions; however, the final decision will rest with the EA Director in consultation with the EA Coordinator.

Examples of well constructed and poorly constructed SIRs are provided in [Appendix 6](#).

5.1 Formatting SIRs

Questions must be prepared in the format provided by the EA Coordinator. Reviewers should carefully review their draft SIRs for formatting, grammar and accuracy of references to ensure that the SIR questions can be compiled in a timely and efficient manner.

The EA Coordinator will provide an SIR Template to each reviewer. The Template is set up using the Styles function in Word so that the SIRs can be automatically formatted. Reviewers familiar with the use of Styles are encouraged to apply the appropriate Style to each part of the SIR (see Section 5.1.2 below).

5.1.1 General

The EA Coordinator will provide the Review Team members with the proper name and, where applicable, the acronym for the Proponent – for example, Alberta Development Inc. or ADI. In this case, all SIRs must refer to Alberta Development Inc. or ADI, not “the Proponent” or “the company”. Avoid phrases like “it is stated that” or “the EIA report stated that” and instead use “ADI stated”. Past tense (ADI stated) not present (ADI states) is preferred.

Occasionally questions may arise that may be of interest to other team members. These should be noted and directed to the appropriate member for consideration. This can be done verbally or in writing. These questions should then be removed from the reviewer's list.

If it is necessary to cite references:

- in the body of the SIR use the format (Caraco, Cole and Likens 1989¹¹) and
- footnote the detailed reference.

Make a list of acronyms used in the SIRs and provide the list to the EA Coordinator.

The SIR Template assumes that a question will be asked and therefore includes a question mark at the end of the Question. However the SIR is often in the form of “Provide XXX” or “Update XXX” or “Describe XXX”. As these are not questions the reviewer should remove the question mark (see example below – question 1, part a).

5.1.2 Format

The SIR consists of three parts: the *Reference*, the *Preamble* and the *Question*.

The reference is used to indicate the section/paragraph of the EIA about which the question is being posed. Avoid using abbreviations. Words such as Volume, Section, Figure, Table and Page should be written out in full. Place the reference on a separate line from the preamble. A colon or period at the end of the reference is not necessary.

Where there are multiple references for a question place each reference on a separate line (use the soft return keys Shift-Enter to ensure the formatting for the Reference is kept). The first reference should be the primary one discussed in the question since questions will be sorted by the first reference.

Questions should be referenced as follows:

1. Volume 1, Section 6.7.9.1, Figure 1.8 or Table 8.1, Page 31

The preamble helps provide clarity and context for the question. It is helpful to provide a preamble to each SIR or group of SIRs developed. The preamble makes it easier for the EA Coordinator to combine similar questions

¹¹ Caraco, N.F., J.J. Cole and G.E. Likens 1989. *Evidence for sulphate-controlled phosphorus release from sediments of aquatic systems*. Nature 341: 316-318.

from different reviewers. Information attributed to the Proponent or the EIA report should be in italics without quotes. For example:

Alberta Development Inc. (ADI) states that *Crushed, calcinable limestone from the quarry will first be passed through an activation kiln to remove and completely combust volatile organic constituents (VOCs) from the limestone.*

Many SIRs have multiple parts – these should be referenced in a list by letters. If there is only one question with a preamble it should still be in list form with the letter a. If there is no preamble no letter is needed.

The overall SIR should be formatted as follows:

1. **Volume 1, Section 9.7.6, Page 1-8**
Alberta Development Inc. (ADI) states that *Crushed, calcinable limestone from the quarry will first be passed through an activation kiln to remove and completely combust volatile organic constituents (VOCs) from the limestone.*
 - a. Describe the type of VOC emissions that are expected to be released.
 - b. How were these VOC emissions accounted for in ADI’s assessment of the environmental impacts of the Project?
 - c. What impact would these emissions have on the environment?

5.2 SIR Content

When preparing SIRs, reviewers should:

- a) frame questions in a neutral, non-aggressive tone (*please* and *thank you* are not needed);
- b) not state personal beliefs or comment on the Proponent’s perceived intent;
- c) not use questions to create or infer policy;

- d) check the Concordance Table to see if the information is in another section (Proponents believe that many of the SIR responses can be found in the EIA report)
- e) not word a question in a way that would imply an acceptable answer – however, if the reviewer knows that any other response will elicit another SIR, the reviewer should discuss the appropriate approach with the EA Coordinator or their representative on the Coordination Group before submitting the SIR;
- f) determine if the likely response to the question will almost surely elicit a subsequent question (e.g., when asking for missing data or requesting a model be rerun) – the reviewer should discuss the appropriate approach with the EA Coordinator or their representative on the Coordination Group before submitting the SIR;
- g) avoid questions that may have a “yes” or “no” answer;
- h) avoid questions that are related to another project or another Proponent;
- i) not ask “what if” questions;
- j) not ask Proponents to commit to tasks that are beyond their control;
- k) not ask Proponents if or how they will comply with regulatory requirements, including conditions of an approval or Code of Practice (compliance is a given); and
- l) not ask for information that cannot be obtained with good science in the time frame of an EIA (about a year).

If reviewers find that there are a considerable number of questions related to a particular issue, they should consider whether there is a greater, more fundamental question that needs to be addressed instead.

SIRs must relate directly to a requirement specified in the EIA report final Terms of Reference. They cannot be used to raise new issues or to gather information that the reviewer or the reviewer’s agency would like to have. However, if in the course of reviewing the EIA report reviewers identify a new issue not

previously addressed in the final Terms of Reference that has the potential to affect the outcome of the project, this matter should be brought to the attention of the EA Coordinator immediately. The EA Coordinator will raise the matter with the EA Director who may require the Proponent to provide information on this new issue under section 51 of EPEA.

In some cases a new or emerging government policy may arise between the time the final Terms of Reference are published and the EIA report review is completed. The Proponent is not likely to have incorporated this new policy into their EIA report. Reviewers should ask questions related to the potential impact of the new policy but must not expect that the Proponent will redo the assessment to accommodate the new policy. However, Proponents must understand that their approvals will likely reflect the new policy.

Reviewers should attempt to determine if the SIR relates to EIA completeness or to an EPEA or *Water Act* or other agency Approval. Each SIR should be classified accordingly in the SIR Template. EIA completeness questions are posed to request more information to understand a project, the surrounding environment, potential effects, mitigation or management. They should link directly to the final Terms of Reference. Approval related SIRs ask for more detail about how the information will be used or the plans will be carried out. Some general guides to help separate the questions:

- EIA questions are often about the concept (e.g., a stream monitoring program will have four sites and quarterly sampling for standard quality parameters) whereas approval questions are often about details (four sites located at XX, sampling using method YY and analysis using methods ZZ and UU)
- EIA questions are often about actions that happened in the past (e.g., what has monitoring to date shown?) whereas approval questions are often about actions that will occur in the future (e.g., what will monitoring be used for?)

- EIA questions will often be about *why* or *what* whereas approval questions are often about *how* or *when*

Approval SIRs could request information at a level of detail that is too great for the Proponent to supply at the EIA stage. In this case, the SIR may still be posed, however the answer may not be provided until the Approval stage of the process. The delay in response will not hold up the EIA review process.

5.3 Errata

The Errata section is used for minor deficiencies that should be included in the formal public record but would not be considered “big ticket” items. They are usually in the form of directions (e.g., provide, update, include, etc.) rather than questions. The following types of requests should be placed in the Errata section:

- a) corrections to page numbers, reference sources, map legends, etc.; and
- b) provision of missing data, maps, references, etc that do not have an associated question.

Do not provide Errata about spelling mistakes unless the mistake could lead to a misinterpretation – for example a species name, place name or person/organization name.

5.4 SIR Checklist

Before submitting draft SIRs reviewers should run through the following checklist and correct any problems:

- ✓ SIR relates to the final Terms of Reference or is clearly labelled as an Approval question
- ✓ Errata questions are appropriately labelled
- ✓ SIRs are formatted properly
- ✓ SIRs are sorted by Reference
- ✓ Full and accurate Reference provided
- ✓ List of acronyms used is provided
- ✓ Quotes attributed to the Proponent are in italics without quotation marks
- ✓ Spelling checked (watch for commonly misspelled words like metre, modelling, naphthenic, sulphur)

- ✓ Superscripts (e.g., km², m³) and subscripts (e.g., CO₂, SO₂, H₂S) are used appropriately

6 INTERACTIONS WITH THE PROPONENT

6.1 Project Kick-off Meeting

For many projects, a Proponent-led project kick-off meeting is held. The Proponent will walk Review Team members through the Integrated Application package and will bring their technical specialists (consultants) to provide specific technical details about the project in media-based sessions.

Generally the meeting will be held within a few weeks of the start of the review to allow some time for Review Team members to look at the Integrated Application.

The kick-off meeting is a good opportunity for reviewers to get a sense of the project scope, EIA content, to give the Proponent an indication about questions likely to be asked, and any serious deficiencies in the EIA report. It is also a good opportunity to meet fellow Review Team members and learn what areas of expertise are available for future consultation should they have questions.

6.2 Clarification Meetings with Proponent

At several stages during the review of the EIA and subsequent SIRs, the EA Coordinator may organize meetings with the Proponent and their consultants to discuss issues, potential SIRs and potential SIR responses. The intent of these meetings is to provide Review Team members and the Proponent the opportunity to focus and clarify questions and responses. It is often possible to rephrase a question so that an appropriate response can be provided. In some cases the Proponent may be able to direct the reviewer to a place in the Integrated Application where the answer can be found.

Although a Proponent’s response at these meetings may satisfy a reviewer, the question may still need to be asked to ensure that the public record is complete.

6.3 Team Member Communication with Proponents

Direct communication between Review Team members and the Proponent or the Proponent's consultants may facilitate review of the EIA report and subsequent SIR responses. This type of communication should only be occurring after discussions with the EA Coordinator. Review Team members should keep records of the communications and should immediately notify the EA Coordinator and Coordination Group representative if it appears that any of the discussions may lead to policy issues or to Proponents communicating directly with senior review agency staff. Review Team members may also wish to apprise the other team members of the discussion to ensure all participants have the same information.

7 HEARINGS

Provincial Review Team members may be required to assist legal counsel in preparation for regulatory hearings. Assistance may include:

- a) drafting Issues Sheets;
- b) drafting and reviewing the government submission; and
- c) participating in mock hearings to prepare the government panel members.

Review Team members may also be asked to participate in the government panel as expert witnesses.

Alberta Environment uses Issues Sheets as a standardized approach to present information arising from the review of an Integrated Application for consideration in the hearing process. This ensures a consistent level of information and presentation. The content of the Issue Sheets is as follows:

- a) Background
 - Alberta's Position
 - Implications to Alberta
 - Key Messages
- b) Panel Submission
 - Issue
 - Alberta's Position

8 APPROVALS ADVICE

The Alberta Environment Approvals Director may ask Review Team members for advice on the approval requirements based on their review of the Integrated Application and their departmental policy requirements. This request may come at any time after the review is complete but is most likely to occur following the public interest decision by the appropriate Regulatory Board.

Approvals advice will generally be provided in the form of verbal discussions rather than written information.

9 RECORDS MANAGEMENT

The formal records related to the Environmental Assessment process for each project are held by Alberta Environment. Under section 56 of EPEA, Alberta Environment is required to keep a Register of Environmental Assessment Information that must be made available to the public.

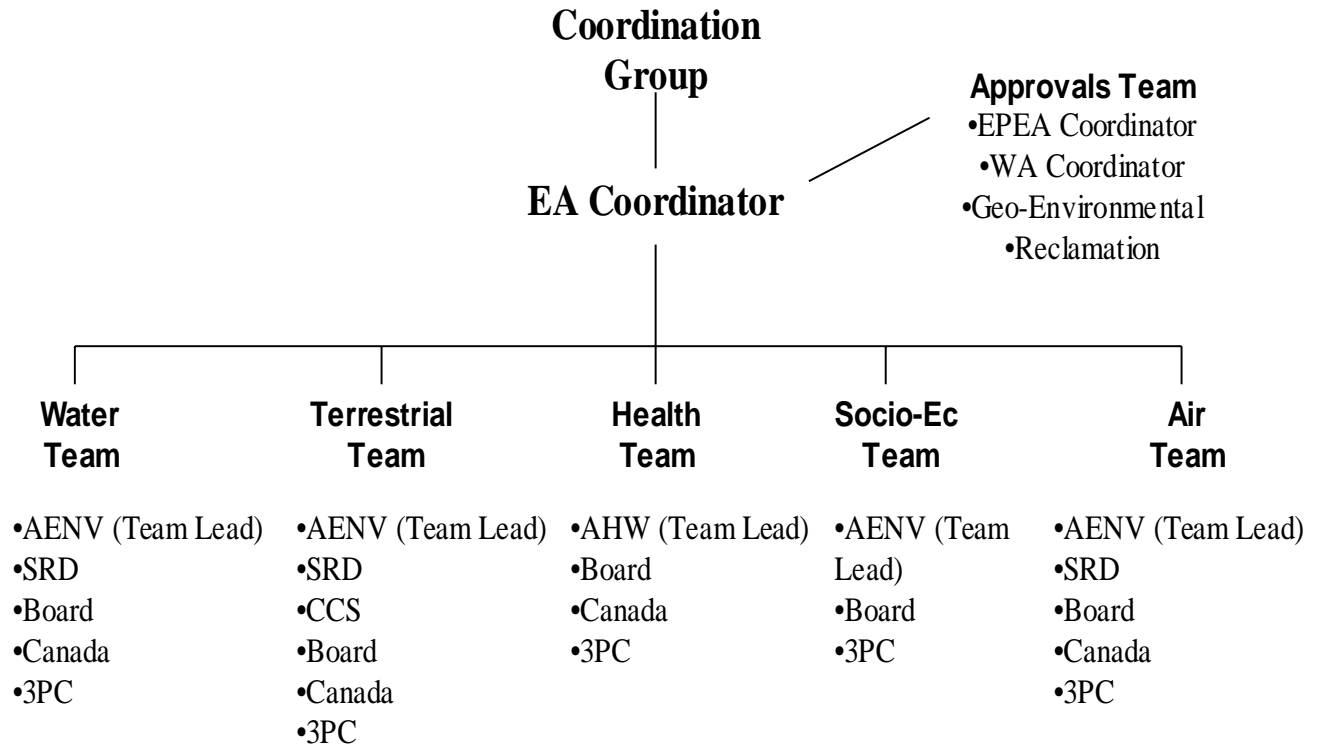
All internal written communications may be subject to public review and may be used at hearings. This includes all electronic mail. Therefore, careful judgment needs to be used so that appropriate documents are retained as records, and transitory documents are not confused with permanent records. Transitory documents include temporary information, duplicates, draft documents, meeting summaries, presentation materials and working materials, outside publications and direct mail (advertisements). If the information has no future administrative, financial, legal, research or historical value to the Government, it should not be included in the file.

All reviewers must follow the records management requirements of their specific agency.

Appendix 1: Acronyms

3PC	Third-Party Contractor
AENV	Alberta Environment
AHW	Alberta Health and Wellness
AUC	Alberta Utilities Commission
CCS	Alberta Culture and Community Spirit
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EPEA	<i>Environmental Protection and Enhancement Act</i>
ERCB	Energy Resources Conservation Board
fTOR	Final Terms of Reference
LSA	Local Study Area
NRCB	Natural Resources Conservation Board
RSA	Regional Study Area
SAGD	Steam Assisted Gravity Drainage
SIR	Supplemental Information Request
SOC	Statement of Concern
SRD	Alberta Sustainable Resource Development
WA	<i>Water Act</i>

Appendix 2: EIA Report Review Team Structure



Appendix 3: Review Schedule

Task	Time
Technical Review of Integrated Application	14 wks
Technical Review of Integrated Application	12 wks
Review Team to Attend Half Day Environmental Assessment Training, if necessary	
Review Team to Attend Half Day Project Overview Meeting, if possible	
Reviewers to Send SIRs to EA Coordinator	
Coordination Group Meeting, if necessary	
EA Coordinator to Compile SIRs	2 wks
Finalization and Distribution of SIRs	3.5 wks
Coordination Group to Review SIRs	1.5 wks
AENV to Finalize SIRs and Send to Regulatory Board	1 wk
Regulatory Board to Finalize SIRs and Send to Proponent	1 wk
Preparation of SIR Response	5.8 wks
Proponent to Prepare SIR Response and Send to Regulators	5.8 wks
Technical Review of SIR Responses	7.6 wks
Technical Review of SIR Responses	5.8 wks
Reviewers to Send SIRs (#2) to EA Coordinator	
Clarification Meeting with Proponent, if necessary	
EA Coordinator to Compile SIRs	1.8 wks
Finalization and Distribution of SIRs (#2)	1.4 wks
Coordination Group to Review SIRs (#2)	0.7 wks
AENV to Finalize SIRs (#2) and Send to Regulatory Board	0.2 wks
Regulatory Board to Finalize SIRs (#2) and Send to Proponent	0.5 wks
Preparation of SIR (#2) Response	4 wks
Proponent to Prepare SIR (#2) Response and Send to Regulators	4 wks
Technical Review of SIR (#2) Responses	5 wks
Technical Review of SIR (#2) Responses	5 wks
Reviewers to Send Completeness Recommendations to EA Coordinator	
Coordination Group Meeting, if necessary	
EIA Completeness	2 wks
EA Coordinator to Prepare and Present Completeness Memo to Director	1 wk
AENV to Prepare and Send Completeness Letter to Regulatory Board	1 wk
TOTAL	43.3 wks

Appendix 4: Hierarchy of Questions for Integrated Application

The hierarchy of questions below form a framework for reviewers to think about as they work through the EIA report. The questions may guide development of specific SIRs that could be asked if the information wasn't provided by the Proponent in the Integrated Applications. Proponents may also want to use this hierarchy of questions as a guide to verify that the minimum information has been provided as outlined by the Terms of Reference or for their regulatory applications. When the SIRs are placed within the SIR Package, the hierarchy of the question is considered to ensure they are placed in the right category as Board, EIA or Approval related questions. Alberta Environment only considers the EIA-related questions when determining if the EIA is complete.

The following series of questions has been adapted from various sources, including the work of consulting firm Management Solutions in Environmental Science¹² (used by permission (Petr Komers, pers. comm, Calgary, March 2008)).

Level One - Public Interest Questions

Environmental impact assessments provide information to assist decision makers in determining how a project should proceed if deemed in the public interest. Information provided during the review of environmental impact assessment is considered by the Regulatory Board when making the public interest decision by answering the following questions:

- Is this project in the public interest? Why?
- Is it probable that an EPEA approval can be issued?
- Is it probable that renewable natural resource allocations can be issued?
- Can a detailed Regulatory Board approval (if required) be issued?

Level Two – Application Related Questions

The Integrated Application that is submitted will normally include the *Environmental Protection and Enhancement Act*, *Water Act* and any Regulatory Board (ERCB, NRCB and/or AUC) applications. When reviewing the applications the following questions should be answered to support each application:

- What makes this project a sustainable development?
 - How is it socially sustainable?
 - How is it economically sustainable?
 - How is it environmentally sustainable?
- What is changing and how?
- Is the environment getting better or worse?
- Are existing values and users protected?
- Are environmental performance objectives established and will they be met?
- Is the project compatible with public laws, management plans, policies, public service delivery and infrastructure?
- Were comments from regulators, stakeholders, First Nations and the public considered and incorporated in the design of the project?
- What are the issues from public consultation efforts that require review by regulatory decision-makers?

¹² MSES, 2007. Review of Environmental Impact Assessments for Oil and Gas Developments in Northern Alberta.

Level Three – EIA Report Questions – Non-Technical

The regulators and the public need to fully understand the position of the company, have an understanding of the project and how the conclusions from the assessment were reached. Through the review of the EIA, answers to the following questions should be provided:

- Are the needs and objectives of the Project explained?
 - Does the EIA include all the different aspects of the development?
- Is there evidence of the Proponent considering alternative actions and justification for the proposed action?
 - Does the EIA consider the timing of project activities?
- What environmental performance objectives are proposed?
 - What objectives have been proposed in other applications?
- How likely is it that environmental objectives can be met?
 - What is the level of confidence to meet the objectives?
 - What are the key uncertainties?
 - Were scientifically valid methods used to define objectives?
 - Are follow-up or contingency plans proposed that increase the confidence in meeting the objectives?
- Have resource management objectives been addressed?
 - What are the existing resource consumption patterns/locations?
 - What are the existing and proposed resource allocation decisions?
 - What resource management objectives are proposed by the Proponent?
 - How likely is it that natural resource management objectives can be met?
- How have siting issues been taken into consideration?
 - What makes the proposed site acceptable/preferred?
 - Has the study area been defined broadly enough to include all the areas likely to be significantly affected by the Project?
 - Has the Proponent addressed co-use of facilities and corridors?
 - Has the Proponent addressed access to site(s) and access control?
- What are the key predictions of the EIA report?
 - For air quality?
 - For water quality and quantity?
 - For aquatic resources?
 - For terrain, soils and vegetation?
 - For wildlife?
 - For human health?
 - For biodiversity?
 - For sustained use of water, public land, forests, etc.?
- What are the preferred environmental protection, mitigation, monitoring and resource conservation measures (action plans, as opposed to objectives)?
- How has technology been considered to reduce the potential environmental impact and to maximize environmental performance, specifically the use of Best Available Technology Economically Achievable (BATEA)?
 - What is the capability of proposed and alternative production processes and technologies?
 - What is the capability of proposed and alternative pollution control technologies?

- What makes this EIA a cumulative effects assessment?
 - Has the Proponent identified those projects and activities that will interact with the project? (Planned Development Case - existing, approved, proposed and likely future activities disclosed up to 6 months prior to submission.)
 - Has the Proponent looked at future development scenarios?
 - Have the temporal and spatial boundaries used been identified?
 - Has the Proponent described the cumulative effects methodologies and assumptions used?
 - Where appropriate, has the Proponent addressed thresholds for acceptable change?
 - What has the Proponent considered as appropriate indicators of change which can be measured?
 - Has the Proponent considered how cumulative effects should be managed in the future?
 - Has the Proponent identified the existing or proposed management frameworks for managing cumulative effects that they are a current member of or can become a member of? (Note that it is not expected that the Proponent can mitigate the cumulative effect of multiple activities on their own. A combination of individual and co-operative efforts will usually be needed, starting with a management framework.)
- What characteristics of the Proponent and its existing operations provide assurance that the project can be developed/operated with a consistent, high level of environmental performance?
 - Is there a description of the proponent and it's history in Alberta?
 - What are the company's corporate policies?
 - Are desirable objectives such as "continuous improvement" in effect?
 - Does the company have experienced and qualified staff?
 - Does the company have operating experience/performance record with similar operations?
- Does the information address issues raised by all relevant stakeholder and outline pathways for ongoing stakeholder participation? Is it comprehensible to a lay member of the public?
- Is the information accessible to decision makers and key stakeholders?

Level Four – EIA Report Questions – Technical

The EIA is a very technical document and requires a thorough review by individuals who have a specific area of expertise (see [Section 3.2 Specialist Review Teams](#)). Questions at this level are to focus on obtaining clarification that is necessary to determine that the information presented in the EIA has fulfilled the final Terms of Reference for the Project. There may be multiple levels of questions and questions between environmental disciplines that interrelate. Obtaining answers to the following questions is vital for both the Proponent and the regulators.

- Project Description
 - Have the proposed activities, facilities, resource and land uses been clearly described?
 - What are the chemical inputs, pollution sources, outputs, and pathways?
 - What are the land surface and water disturbances?
 - What allocation of water is required? Is it freshwater? How will water be recycled, reused and conserved?
 - Are the chemical and waste management plans (existing and proposed) described?
 - What are the discharge sources, contaminant characterization, and pathways?
 - What is the influence of segregation, mixing or diffusion of contaminants on objectives?
 - What methods are presented to establish proposed source limits (technology/impact basis)?
 - Does the proposed project conform to the Land Use Framework and associated Regional Plan?
- Baseline Information
 - Has all existing information been collected and utilized?

- Does the baseline information adequately represent the existing environmental condition?
- Were appropriate baseline data collection, mapping and classification methods used?
- Is the baseline information presented in a manner that will allow the formulation of clear and verifiable impact predictions?
- Is the baseline information adequate to be used as a benchmark for monitoring programs?
- Have any important gaps in the baseline data been identified and have measures to rectify these gaps been explained in the assessment?
- Assessment Methodology
 - Were scientifically valid methods used for data collection, measurement, analysis (i.e., “good science”)?
 - Does the assessment follow conventional scientific knowledge and practice?
 - Did qualified and experienced personnel undertake the assessment?
 - Are assumptions adequately described?
 - Are the methods documented?
 - Are the methods for data collection applied in a manner that will enable rigorous quantitative analyses? Are these analyses employed to formulate accurate impact predictions?
 - Is scientific uncertainty acknowledged and how is it addressed (quantitative vs. qualitative assessment)?
 - Did the Proponent describe the quantification of the effects?
 - Are the significance of effects and the thresholds for cumulative effects assessment described?
- Evaluation of environmental effects (residual and cumulative)
 - Is the study area for each environmental component (project, local and regional) clearly defined?
 - Have transboundary effects been considered?
 - Were appropriate parameters, indicators or VEC’s identified?
 - Were the individual and cross discipline effects discussed, including what’s changing, appropriate mitigation and the consideration to cumulative effects?
 - Was traditional uses/knowledge collected and applied to assessment?
 - Were existing special habitats, terrain features, watershed features identified and potential impacts and mitigation discussed, including the application of buffer zones?
 - Were protected areas considered?
- Evaluation of economic and social effects (residual and cumulative)
 - Is there a clear definition of study area (project, local and regional)?
 - Is there a summary of historical, archaeological and related resources?
 - What are the existing values and resources? How will they change?
 - What is the existing demographics, employment, economic indicators, institutions, infrastructure capacity? How will this change and be managed for the life of the project?
 - Have future social and economic scenarios (Application and Planned Development Case) been described?
 - Have the incremental and cumulative social and economic effects been quantified?
 - Have the significance of effects and mitigation plans been described?
 - What is the existing transportation/access/infrastructure, how will it change and how will impacts be mitigated?
 - What are the positive and negative impacts of the project for existing residents and users?
 - Are there competing economic interests? How will they be managed?
- Confirmation of the accuracy of EIA report predictions
 - Does the EIA identify all reasonable foreseeable impacts?

- Was a required degree of accuracy reached?
- Are the predictions measurable?
- Were the assessment results conclusive or vague and generalized?
- Is there uncertainty about the impacts on the environment, are confidence limits and worst case scenarios described?
- Did the Proponent discuss uncertainties, provide data and management strategies?
- Does the EIA address the degree to which the possible effects on the environment may be uncertain or involve unique or unknown risks?
- Are sufficient data and references presented to allow review of the validity of analysis methods and results?
- Is appropriate mitigation included for all the predicted effects?
- Are there follow-up or contingency plans that increase confidence in predicted outcomes?
- Environmental and resource management goals/plans
 - Does the EIA report describe mitigation, reclamation and contingency plans?
 - Did the Proponent undertake sensitivity analysis (what drives success)?
 - Does the EIA report describe monitoring and other follow-up regulatory programs or co-operative management plans (especially for cumulative effects identified as significant)?
 - Are mitigation measures explicit, comprehensive, transparent and systematic?
 - Have the effects of these measures on impact magnitude and significance been clearly explained?
 - Are methods to monitor and manage residual impacts explicitly described for the lifespan of the Project (including post-decommissioning)?
 - What are the residual impacts, beneficial and adverse and short and long term?
 - Has the closure plan provided an outline of reclamation and end land use concepts and objectives?
 - Are the commitments identified by the Proponent feasible?

Appendix 5: Sample SIR Package Structure

Acronyms used in this Supplemental Information Request

Board

General

Public Engagement and Aboriginal Consultation

Noise

Socio-Economic

Emergency Response Plan

Transportation

Historic Resources

Air

Air Quality Assessment

Dispersion Modeling

Emission Management

Water

Water Management

Hydrogeology

Hydrology

Surface Water Quality

Aquatics

Terrestrial

Land Use and Land Management

Conservation and Reclamation

Terrain and Soils

Vegetation

Wildlife

Biodiversity and Fragmentation

Health

Approvals

Environmental Protection and Enhancement Act

Water Act

Alberta Sustainable Resource Development

Federal

Other

Errata

Appendix 6: Example SIRs

The following examples were taken from previous SIR packages. Some have been modified to exaggerate good and bad points. All the examples are directed at a fictitious company called Alberta Development Inc.

Examples of Well Constructed SIRs

Good SIRs meet the formatting and content guidance in [Section 5](#) and are easy to read and determine what exactly will be required in a response.

1. Volume 1, Section 5.6.3.4, Page 5-25

Alberta Development Inc. states it was also assumed that metals were emitted only through the PM₁₀ fraction of the total particulates emitted.

- a. Provide evidence to support this assumption.

Good Point: Question mark deleted by reviewer prior to submission of SIR to EA Coordinator.

2. Volume 1, Section 2.3.4, Page 2-26

Alberta Development Inc. states that *[it] is investigating opportunities to increase the proportion of coke in the fuel feed mixture...*

- a. What is the status of Alberta Development Inc.'s investigation?
- b. What is the maximum substitution possible and what impact would this have on project emissions of SO₂, NO_x, PM_{2.5} and metals?
- c. What impact would these incremental emissions have on the environment?

3. Volume 1, Section 12 and 13, Figures 12.3 and 13.7, Pages 12-16, 13-12, 13-14, 13-16, 13-18, 13-21, 13-23, 13-25, 13-26 13-28, 13-37, 13-42, 13-46, 13-51, 13-62, 13-67, 13-70 and 13-77

Alberta Development Inc. states that *a buffer of 200 m will be maintained between River X and Project Z to protect important riparian habitats that are used by moose.* This statement suggests that all wildlife habitat area within 200 m of River X will remain untouched. None of the "Full Development" habitat maps show any habitat within the Project Z footprint, even along River X.

- a. Clarify what is meant by the 200 m buffer that will be maintained between River X and Project Z.
- b. What development, if any, will occur within 200 m of River X?

Good Point: (a) Seeks clarification of an ambiguous statement. (b) was rephrased from a Yes/No question "Will any development ...".

4. Volume 1, Section 14.5.1, Page 14-10

In the fourth paragraph, Alberta Development Inc. describes the *forestry interests*. A Timber Salvage Plan is usually required annually depending on the clearing timeline.

- a. How will Alberta Development Inc. meet the requirements for an approved Timber Salvage Plan for areas falling within the proposed mineral surface lease?

5. **Volume 1, Section 12.4.2.1, Figure 12.1, Page 12-4**
The Vegetation Survey site location map clearly portrays one major sampling bias; nearly all plots are located adjacent to existing access. It is common practice to position access on higher and drier ground.
- Discuss the potential for skewed survey results, given that more diverse vegetative communities are normally found within the lowland, wet areas.
 - Describe Alberta Development Inc.'s confidence in the results given the potential sampling bias.

6. **Volume 1, Section 4.2, Page 4-2**
Alberta Development Inc. states that *all cleared brush will be piled and burned*. This material contains many nutrients and other benefits.
- Explain why Alberta Development Inc. has not considered retaining and composting some of this material for future reclamation activities.

Good Point: Simple question. It would be better to ask the logical follow-up question requesting an updated plan if Alberta Development Inc. determines the material should be retained.

7. **Volume 1, Section 2.3.1, Page 2-12**
Alberta Development Inc. states that mineral soil, organic soil and overburden will be salvaged for reclamation purposes.
- Explain why subsoil material has not been mentioned as a material that would need to be salvaged for reclamation purposes.

Good Point: Simple question. It would be better to ask the logical follow-up question requesting an updated salvage plan if Alberta Development Inc. determines subsoil should be salvaged, or alternatively ask what the impacts on the project would be if Alberta Development Inc. were directed in an approval to salvage subsoil.

8. **Volume 1, Section 13, Page 13-1 to 13-108**
Alberta Development Inc. does not mention the *Species at Risk Act* (SARA)-listed Yellow Rail in the EIA report. This species is known to inhabit wetlands, which make up 52% of the Project Y footprint.
- Evaluate the habitat available to the Yellow Rail at baseline, estimate population size, impact of development on the species, and what mitigation strategies will be put in place for this species.

Good Point: The Preamble is clear and simple. Mention of SARA and the 52% of Project footprint clearly sets stage for the question.

9. **Volume 3, Section 8.1.7, Page 6**
The flooding of peatland and wetland areas associated with the impoundment of Lake Y will enhance the potential for biomethylation of metals and metalloids.
- Discuss the potential for heavy metal contamination.
 - Propose potential mitigation measures to address this issue.

10. Volume IIB, Page 2-47 to 2-48

Alberta Development Inc. discusses potential thermal impacts associated with SAGD operations.

- a. Provide an indication of the potential for thermal mobilization of compounds such as arsenic due to SAGD operations.
- b. Indicate whether effects will be experienced in the regional groundwater.
- c. Discuss potential effects on human health.

Good Point: Breaks questions down into simple, clear and logical steps.

11. Volume I, Section 10.1.8, Page 10-7

Information is provided on sulphur recovery for the Project but a sulphur balance is not provided nor is an assessment for the potential for changes to the sulphur balance over the life of the Project.

- a. Does Alberta Development Inc. anticipate the H₂S content of the produced gas changing with time due to aquathermolysis or other reasons?
 - i. If yes, has Alberta Development Inc. considered this fact in the air quality assessment and in the determination of sulphur recovery requirements; and,
 - ii. have these changes been built into the sulphur balance?

Good Point: Anticipates an answer and asks further questions, rather than waiting for response and asking a follow-up SIR.

12. Volume 3, Section 2.2.9, Page 2-11

Volume 3, Section 2.4, Table 2.4-30, Page 2-25

Volume 3, Section 2.6, Tables 2.6-15, 2.6-16, 2.6-17, 2.6-18, Pages 2-34, 2-36 & 2-38

Alberta Development Inc. states that *One of the most important factors affecting noise levels is proximity of activities to the receptors. As a result, the noise assessment of the project is focused on Plant 3A and 3B and all operating wellpads and infrastructure within the project area boundary.* The proximity of activities to receptors was not provided.

- a. Provide updates to Tables 2.4-30, 2.6-15, 2.6-16, 2.6-17 and 2.6-18 that include the proximity of project activities to the receptors considered in the noise assessment.

Good Point: The multiple References have been split into separate lines using the soft return feature

Examples of Errata Questions

1. Volume IIB, Section 3.5.1.1, Table 3-5, Page 3-21

- a. Table 3-5 indicates that there is no existing landfill in the Baseline Case. Clarify and update Table 3-5 if necessary.

2. Volume 1, Section 14, Figure 14.3, Page 14-11

Forest Management Units (FMU) A4 and A4J were amalgamated as part of FMU A15.

- a. Update all sections and/or figures accordingly.

3. **Volume IIB, Section 3.5.2.1, Table 3-20, Page 3-44**
The LSA column shows that the Disturbances for plant sites / facilities, pads, roads / utility corridors / pits, landfill, and cleared land / exploration are all 0.00 km².
 - a. Correct and update Table 3-20.
4. **Volume 3, table B1-45, Page B1-114**
Title should be “Application Emissions” not “Baseline Emissions”.
5. **Volume 2, Section 7.2.4.1, Figure 7.16, Page 7-43**
Sampling location UC2 is missing from Figure 7.16.
 - a. Provide a corrected map that includes this sampling location.

Examples of Poorly Constructed SIRs

Formatting Problems

1. **Volume 2, Page 4**
 - a. How does Alberta Development Inc. plan to use ultra-low sulphur fuel in Project X’s fleets through all the phases of the project?

Problem: Incomplete reference.

2. **Volume 3b. Appendix II. Section 3.2, Project Expansion Emissions. Produced Gas Sweetening**
Alberta Development Inc. states *the produced gas sweetening unit was assumed to have a sulphur recovery rate of 95% and an annual service factor of 90%*.
 - a. Provide the evidence for this assumption.
 - b. Would the sulphur recovery rate and service factor be considered upper, lower or average values?
 - c. Will the sulphur actually be recovered and re-used, or will the sulphur only be removed from the produced gas and then disposed of?

Problem: Reference should include page number, not the title of the paragraph. Periods instead of commas between components of the Reference. Change states to stated.

3. **Volume 6, Section, Figure, Page 5-14, Table 1**
 - a. Explain why you feel adequate baseline sampling was achieved with, in some cases, a single sample.

Problem: Question is not addressed to the Proponent.

4. **Volume 1, Section 7.5.3, Table 7.4 and 9.9, Page 7-16, 8-15 and 9-20**
An estimate of 68,000 m³/yr groundwater inflow is used as one of the variables to estimate the number of years to fill the lake ...

Problem: Preamble should clearly link the statements to the Proponent (e.g., Alberta Development Inc. used a groundwater inflow estimate of ...). Also, m³ should be written with a superscript as m³.

5. **Volume 5, Section 5.6.1.3 and Volume 5, Section 5.8, Page 5-114, Page 5-45**
- Alberta Development Inc. stated *Experience to date suggests that reclaimed landscapes can achieve equivalent capability for forestry*. Provide a summary of the experience that the statement refers to regarding reclaimed landscapes achieving equivalent land capability; and
 - Provide the status on the Reclamation Monitoring Program and its current findings if available

Problem: Preamble should not be part of the question.

6. **SIR response 137, Page 257**
Alberta Development Inc. indicated that if storm water from pads is not of acceptable quality for discharge it will be trucked off-site and disposed of at an appropriate facility.
- Discuss if Alberta Development Inc. has considered using this water as process water?

Problem: Delete the question mark and use a period – look carefully when using words like discuss, describe, clarify, explain, provide, compare, etc. Would be better if the question was extended to ask ... and Alberta Development Inc.'s rationale for not using this water as process water.

Content Problems

1. **Volume 1, Section 4, Page 4-401**
Golden eagles and prairie falcons forage in the valley as well as upland areas. Eagles will take Canada geese along the river (see above), while prairie falcons will hunt magpies, flickers and other birds in the river valley.

Problem: Statement not a question.

2. **Volume 1, Section 4, Page 4-393**
Moose are an important species of interest in the LSA and RSA for all residents, including First Nations, and for commercial outfitters. Currently resident hunters wait an average of 3 years before being drawn to hunt antlered moose in the LSA. Thus any reduction of prime moose wintering and calving habitats is an issue.

Problem: Statement not a question

3. **Volume 2, Section E, Subsection E.3, p. E.1-7**
The stakeholders concerns that are project specific should be differentiated from those that relate to regional or cumulative issues associated with industrial development in the region.

Problem: Direction rather than a question.

4. Volume 1, Section 4.4.4, Page 4-37

Monitoring of revegetated areas should be in line with protocols as outlined within the Alberta Regeneration Standards manual. In order for these areas to be re-introduced into the timber supply, they must meet regeneration standards as outlined within this manual. Longer term sampling should be following the permanent sample plot protocol.

Problem: Offers advice instead of posing a question.

5. Volume 6, Section, Figure, Table, Page 4.29

The X Report contains a plethora of total suspended solids samples for River X and we did not stop in 2000. There are over 30 samples from post-2000 alone.

- a. Why were these not included?

Problem: Negative tone. “Plethora” is not a useful descriptor.

6. Volume 6, Pg. 5-54

- a. Elsewhere Alberta Development Inc. noted spills as potential effects but I fail to see them included in the assessment here. If probability and risk can be assigned to seepages etc. there is enough data to capture potential impacts from unforeseen events. Consider and discuss potential emergency planning, response and expected impacts from the potential unforeseen, but experience tells us, expected upsets.

Problem: Negative tone. Do not personalize SIRs (e.g., “I ...”).

7. Volume IA, Section 7.5, Page 7-6

- a. Do the emergency flares at the well pads have pilots? If so, is this an air emission source?

Problem: Yes/no questions.

8. Volume IA, Section 8.3, Page 11-6

Alberta Development Inc. stated they *will require large volumes of mineral borrow for development purposes.*

- a. Is Alberta Development Inc. aware that the recovery of borrow material may require a lease or licence issued pursuant to the *Public Lands Act*?

Problem: Yes/no question. In addition, we do not need to ask if Proponents are aware of regulatory requirements.

9. Volume IIB, Section 3.5.3, Page 3-32

Alberta Development Inc. stated that *appropriate setbacks from wellpads to watercourses and waterbodies, where practical, will provide a filtering buffer.*

- a. Clarify that wellpad setbacks from watercourses/water bodies will comply with ERCB Directive 056.

Problem: We do not need to confirm their duty to comply with legislative requirements.

10. Volume 6, Section 3, Page 3-47

Alberta Development Inc. stated that *any depressurization required for potential developments will be offset by matching decreases in depressurization rates from existing and approved developments and from the project.*

- a. How does this statement relate to project X?

Problem: Question references another project, not Alberta Development Inc.'s project.

11. Volume IIB, Section 3.5.1.4.2, Page 3-29

Alberta Development Inc. stated *The LSA is defined by 23 defined drainages as well as other small undefined drainage areas located on the west side of River X (Figure 3-2). In general, streams associated with these drainage areas trend east – west from River X.*

- a. Clarify this statement.

Problem: Question is ambiguous – what part requires clarification?

12. Volume 1, Section 9.4.4, Page 9-12

The water quality mass balance model does not account for influx of brackish groundwater from the basal McMurray sandstone aquifer. Seepage from the aquifer may increase the likelihood of meromixis, and will affect the mass balance of solutes in the lake.

- a. Explain what the contribution of the saline basal aquifer to the solute balance in the lake.

Problem: Question is unclear; deleting “what” may help but even then are we looking for a number, a percentage or an explanation of the impact?

13. Volume 6, Appendix 5c, Tables 5C-7 and 5C-11, Page 245

Total nitrogen is predicted to decrease guideline attainment frequency by 36% from pre-development to potential development at node M3, whereas at node M1, the prediction is for a 47% increase in guideline attainment frequency. This is particularly interesting in that total phosphorus, at both sites, is predicted to undergo a 42% decrease in guideline attainment frequency.

- a. What limnological, project impact and/or adaptive management processes account for this striking difference in nitrogen between these two nodes?
- b. What implications does this have for developments along the River X that may be affecting nitrogen flux?

Problem: Preamble doesn't indicate if the predictions are the Proponent's or the reviewer's. Also unnecessary to use “striking” and “This is particularly interesting in that ...”.

14. Volume 6, Section, Figure, Pg. 5-14, Table 5-1

Sampling frequency for Lake Y is too low given the proposed development and direct impacts via the compensation extension.

- a. Revise and discuss a more appropriate strategy that captures seasonality.

Problem: Preamble is unclear – is reviewer stating personal beliefs? Reword to ask a question about rationale for sampling frequency and the implications of any changes that may occur if rationale is not accepted. Remember you don't have to like the answer, just understand it.

15. Volume 1, Section 9.5.5, Page 9-20

Alberta Development Inc. stated that *Elevated concentrations of some substances are expected in the water at first release ...*

- a. Revisit the conclusion that water quality will improve as groundwater inputs (which are rich in iron) decline.

Problem: Question is unclear. What does “revisit” mean?

16. Volume 6, Pg. 5A-29

- a. Did Alberta Development Inc.'s method of generating flows for tributaries using the available but often incomplete distribution for the flow series adequately capture the range of dry and wet conditions over the past 42 years? Clarify if the available dataset for each tributary was weighted towards drier or wetter than normal conditions.

Problem: Implies what an appropriate answer should be.

17. Volume IIA, Section 2.4.2, Table 2-4-1, Page 2-15

It is noted that no NOx emission rate is provided for the flare stack

Problem: Phrase “it is noted that” is unnecessary. Rephrase as “No NOx emission rate ...”