

Alberta Environment Incident Reference No. 214287
Scientific and Technical Review by Dr. Alec Blyth, Alberta Research Council (ARC)
Terms of Reference

Background

Alberta Environment (AENV) initiates a stepped investigative process to address all complaints brought forward to Alberta Environment. Guided by the nature of the complaint, different levels of investigation are applied to each situation. The level of response may range from straightforward processes to complex progressive investigations including technical reviews, field based procedures, sampling programs and interaction with specialists, academia and multiple government agencies.

AENV responded to a complaint regarding Section 17(1) water well, and based on the call information initiated an investigative process to fully assess the allegation that Encana has impacted the Section 17(1) water well, and a few other water wells in the area. The complaint is tracked under AENV file Reference No. 214287 (the File).

Purpose and Principles

Purpose

The purpose of the scientific and technical review:

- To engage a qualified party (Alec Blyth, ARC) to fully review the File from a factual, scientific, and technical standpoint.
- To review and assess the scientific and technical adequacy of the File information.
- To validate the preliminary AENV conclusion(s) made on the File based on information contained in the File.
- The Reviewer (Alec Blyth, ARC) to produce an independent conclusion founded on factual, scientific, and technical information.
- To compare the Reviewer's independent conclusion to the preliminary AENV conclusion(s) and identify parallels and discrepancies.

Principles

The scientific and technical review will be guided by the following core principles:

- Scientific reasoning and judgment to be exercised on a professional basis.
- Only information contained in the File (as received by Reviewer) is to be reviewed.
- Supplementary information not contained within the file but required in support of the Reviewer's comments or conclusion(s) must be referenced.

- If significant deficiencies are identified in the File information not allowing for further assessment by the Reviewer. The Reviewer will clearly identify the deficiencies to AENV as they are recognized.
- All information reviewed by the Reviewer is strictly confidential and no part of the File may be shared with any outside party.

Scope of Work and Deliverables

Technical and scientific review of all information contained within AENV file Reference No. 214287 (the File) in the following areas:

- Review, assess and provide written comments on the validity of the scientific and technical information contained in the File.

The AENV Compliance Investigative Process has yielded a significant amount of scientific and technical information to assess the claims brought forward to AENV in the complaint. This information includes but is not limited to;

- a. Groundwater quality data*
 - b. Water well construction characteristics (water well drilling reports)*
 - c. Encana subject resource well(s) drilling, completion, and stimulation information*
 - d. Third party preliminary assessments and interpretation of information contained in the File if applicable*
- Review, assess and provide written comments on the interpretation of the technical and scientific information contained in the File by AENV.
 - Compile, review and assess supplementary information from external sources not included within the File in support of statements and/or conclusion made by the Reviewer. The Reviewer must reference all external information sources used.

Supplementary information may include but not be limited to existing scientific and technical reports, area geologic, hydrogeologic and geo-chemical information, water well drilling reports and baseline water well analytical information (Example: EUB Directive 35: Baseline Water Well Testing Requirement for Coalbed Methane Wells).

- Review, assess and provide written comments on the preliminary AENV conclusion(s), founded on the information contained within the File.
- Review, assess and provide written comments on the preliminary Alberta Energy and Utilities Board (EUB) conclusion(s), contained within the File, if applicable.

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- The Reviewer to make a conclusion and provide a written statement independent of the preliminary AENV conclusion(s) based on the information contained within the File to identify the following:
 - a. Does the information contained in the File suggest that groundwater has been impacted by EnCana subject coalbed methane resource wells?
 - b. Does the information contained in the File suggest that groundwater has been impacted by resource extraction operations including conventional and unconventional oil and gas extraction operations?
- The Reviewer is to prepare a written submission comparing the Reviewer's independent conclusion(s) to the preliminary AENV conclusion(s) and identify parallels and discrepancies.