

## **APPENDIX K**

# CONTENT AND FORMAT FOR ALTERNATE CONCENTRATION LIMIT APPLICATIONS

## Application Content

The application should contain sufficient information to show that a hazardous constituent will not pose a substantial present or potential harm to human health or the environment, as long as the proposed Alternate Concentration Limit is not exceeded; and the proposed Alternate Concentration Limit is as low as reasonably achievable, considering practicable corrective actions. This demonstration should assess the hazards of the constituent in question and evaluate the consequences presented by potential exposures to the constituent. The application must consider the 19 factors listed in 10 CFR Part 40, Appendix A, Criterion 5B(6).

For ease of review, the application should address these factors through the following assessments. The Hazard Assessment should evaluate the radiological dose and toxicity of the constituents in question and the risk to human health and the environment posed by the constituents. The Exposure Assessment should examine the existing distribution of hazardous constituents, as well as the potential source(s) for future constituent releases. This should include the fate and transport of the hazardous constituents in ground water and hydraulically-connected surface water; and the potential consequences associated with human and environmental exposure to the hazardous constituents. The Corrective Action Assessment should (1) identify all realistic corrective action scenarios available; (2) assess their technical feasibility; (3) determine the costs and benefits associated with each scenario; and (4) select a practicable corrective action to achieve the hazardous constituent concentration that is protective of human health and the environment. The outcome of this assessment is a determination that the selected corrective action is as low as reasonably achievable.

There should be enough detailed information in the application to allow the NRC reviewer to independently verify that the proposed Alternate Concentration Limit will not pose a significant present or future hazard to human health or the environment, and that the limit is as low as reasonably achievable, considering practicable corrective actions. Site characteristics, milling processes, disposal operations, and ore composition should be discussed in the application. Information related to each of the 19 factors listed in 10 CFR Part 40, Appendix A, Criterion 5B(6) should be addressed; however, all of these factors may not be applicable to every site. If this is the case, the applicant must explain why a particular factor is not appropriate. For example, ground-water discharging into surface waters may not occur near a mill tailings site. Therefore, stream flow characteristics and transport assessments within the surface water may not be necessary. In any regard, the burden of proof resides with the applicant to demonstrate that selected factors do not need to be considered.

Much of this detailed information may already be available in existing licensing documents, such as environmental reports, license applications, or annual compliance monitoring reports. This information can be readily incorporated into the Alternate Concentration Limit application to produce a stand-alone document. The applicant may simply reference this existing information; however, additional time and NRC resources will be needed to collect the information from the licensee's docket file in order to proceed with the detailed review.

## Appendix K

### Application Format

A standard application format helps to assure the application contains information that addresses all applicable regulatory requirements, and helps to guide both the reviewer and interested stakeholders to pertinent and crucial information. A standard format also greatly contributes to the time efficiency and effectiveness of the review process. The applicant is not required to follow this standard format. Any application, regardless of format, that adequately addresses the suitability of a proposed Alternate Concentration Limit is acceptable for NRC review; however, reviewing an application with a significantly different format will likely require considerably more NRC staff time and resources to conduct the review. An applicant is strongly encouraged to provide a cross-reference table comparing the standard format to the format used in the application, if that format significantly differs from the standard format.

The applicant should present the technical information as clearly as possible and assure it supports compliance with the requirements in 10 CFR Part 40, Appendix A, Criterion 5B(6). Applicants are encouraged to follow the numbering system and headings of the standard format and use appendices for including supporting data not specifically included in a particular section. Conventional abbreviations should be used consistently throughout the application. Any abbreviations, symbols, or special terms should be defined where they first appear in the text. Where appropriate, calculated error bands or estimated uncertainties should be included along with numerical values. Some types of information are better presented clearly and concisely in a graphical manner by using maps, graphs, drawings, or tables and appropriate citations in the text descriptions. Applicants should ensure that graphical materials are legible and that the physical scales are adequate to clearly show details and notations. Symbols should be clearly defined and referenced.

Table 1 shows the standardized outline for an Alternate Concentration Limit application. It includes chapters for supporting information on the site and its setting, a hazard assessment, an exposure assessment, a review of realistic corrective action alternatives, and the proposed concentration limits.

The application should also be structured to allow ready substitution of pages in response to reviewer comments and information requests. Pages should be punched for a standard loose-leaf binder. Revisions should be provided on pages that will replace the original pages, with the changes indicated by a "line change" demarcation in the margin. The date and revision number should be indicated in the bottom outside margin of each revised page, and the package of submitted revisions should include a list of all page replacements for the application. The font style and text size should be plain and large enough to allow the document to be scanned electronically for easy inclusion in the Agencywide Documents Access and Management System (ADAMS). All figures and diagrams should also be clearly presented to assist in electronic scanning.

A legible base map is essential for all applications. The base map should include the tailings disposal area, the location of the reclaimed slopes, the Point of Compliance locations, the Point of Exposure locations, monitoring wells locations, and the proposed long-term control boundary. Pertinent site data, such as potentiometric surfaces, isoconcentration contours, and forecasted concentrations should use the base map as the common reference.

**Table K-1. Standard Format of an Alternate Concentration Limit Application**

EXECUTIVE SUMMARY

TABLE OF CONTENTS

1. General Information
  - 1.1 Introduction
  - 1.2 Facility Description
  - 1.3 Extent of Ground-Water Contamination
  - 1.4 Current Ground-Water Protection Standards
  - 1.5 Proposed Alternate Concentration Limit(s)
2. Hazard Assessment
  - 2.1 Source and Contamination Characterization
  - 2.2 Constituent(s) of Concern
  - 2.3 Health and Environmental Risk(s) of Constituent(s)
3. Exposure Assessment
  - 3.1 Transport and Pathway Assessment
  - 3.2 Human Exposure Potential
  - 3.3 Environmental Exposure Potential
  - 3.4 Consequences of Exposure
4. Corrective Action Assessment
  - 4.1 Previous and Current Corrective Action Programs
  - 4.1 Potential Corrective Action Alternatives
  - 4.2 Feasibility of Corrective Action Alternatives
  - 4.3 Costs and Benefits of Corrective Action Alternatives
  - 4.4 As Low As Reasonably Achievable Demonstration
5. Alternate Concentration Limit(s)
  - 5.1 Proposed Alternate Concentration Limit(s)
  - 5.2 Proposed Implementation and Ground-Water Monitoring Measures
6. References
7. Appendixes and Supporting Information