2008 Update on Barite Soil Quality Guidelines in Alberta and BC

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Barite (barium sulphate) is used as a weighting agent in the majority of oilfield drilling muds, and consequently, is present on many active and decommissioned well sites as a result of mud disposal practices. Currently, barium in soil at well sites in western Canada is typically managed using the Canadian Council of Ministers of the Environment (CCME) agricultural guideline of 750 mg/kg. The CCME guideline is based on a limited dataset comprising studies on the toxicity of soluble barium compounds to plants and invertebrates. However, barite is highly insoluble, and accordingly, the current CCME barium guideline is likely unnecessarily conservative for the management of barite.

The guidelines for barite in soil were calculated from available physical, chemical, fate, and toxicological data for barite, using protocols from the CCME and Alberta Environment (AENV). A new study was commissioned on the toxicity of barite to plants and soil invertebrates, and demonstrated that barite is virtually non- toxic to these biota. This project was managed by a technical steering committee consisting

of industry, regulators and consultants.

2006 Axiom_Barite Update
2008 Axiom_Barite Presentation
2009 AENV_Barite Technical Appendices
2009 AENV_SOIL REMEDIATION GUIDELINES FOR BARITE-ENVIRONMENTAL HEALTH AND HUMAN HEALTH