

Appendix F

Conceptual Adaptive Management Plan and Environmental Management System

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EMS and Adaptive Management

The Project Participants plan to implement an Environmental Management System (EMS) incorporating adaptive management as part of the selected alternative; therefore, the EMS is included as an element common to all FEIS alternatives. The goal of the SDS EMS is to assimilate procedures to bring about compliance with laws, regulations, permit requirements, and mitigation measures identified in the EIS.

As stated in the Council on Environmental Quality's April 2007 Guide, *Aligning National Environmental Policy Act Processes with Environmental Management Systems*, the EMS is intended to "integrate environmental accountability into day-to-day decision making and long-term planning processes, across all project activities, and functions."

The EMS is an organizational framework for minimizing adverse impacts, improving environmental performance, and attaining regulatory compliance. It builds on the Participants' existing audit systems, quality control, data and process management, contingency plans, and health and safety programs. Based on the principles of the International Organization for Standardization (ISO) EMS standard (ISO 14001), the EMS provides tools to achieve project objectives and targets.

As shown in Figure 1, the four basic elements of the EMS are: **Plan** (Policy planning, identifying laws and permits, and setting objectives and targets); **Do**

(Implementation training and managing outcomes); **Check** (Monitoring and corrective actions); and **Act** (Reviewing and acting to make needed changes in the EMS).

During the planning phase, the project team identifies goals and objectives, reviews existing methods, and defines enhancements. Relevant legislative and regulatory requirements are identified and policies put in place to consider pollution prevention and watershed and water quality protection. Leadership and staff work together to evaluate performance, anticipate and avoid problems, and change management approaches.

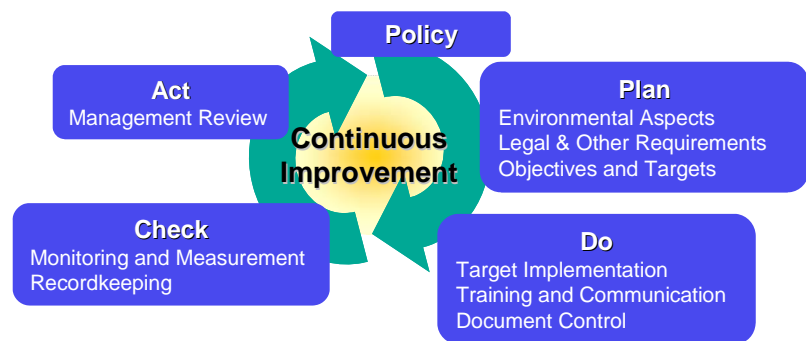


Figure 1
Four Basic Elements of the EMS

The EMS promotes a commitment to continuous improvement, achieving performance objectives, and complying with permit requirements. This includes documentation, staff training and awareness, and system reviews and upgrades based on monitoring results or new information.

Adaptive Management principles will guide the EMS in addressing unforeseen conditions. The Department of Interior defines Adaptive Management as "a system of management practices based on clearly identified outcomes, monitoring to

determine if management actions are meeting outcomes, and, if not, facilitating management changes that will best ensure that outcomes are met or to re-evaluate the outcomes.” (*Department of the Interior Departmental Manual, May 27, 2004 Environmental Quality Programs*). The Adaptive Management model provides flexibility to respond to changes in environmental conditions, adjust to unanticipated impacts of project implementation, or modify mitigation measures to improve effectiveness. The Participants adaptive management plan will be prepared in general accordance with Department of the Interior guidance (Order 3270) and the report Adaptive Management, The U.S. Department of Interior Technical Guide (Williams et al. 2007).

The actions and mitigation measures analyzed during the NEPA process will be merged into the EMS objectives and targets. Monitoring procedures serve as the basis for adaptive management adjustments. The EMS builds upon existing communication plans for internal and external communications and includes mechanisms to communicate monitoring results and to facilitate collaborative management decisions.

The EMS and the adaptive management approach are tools to increase efficiency and monitor environmental effects. Performance measures determine whether changes should be made to avoid or minimize environmental effects. The EMS identifies quantifiable parameters to set ranges to assess performance. Monitoring plans identify schedules, protocols, data collection, and verification procedures. Comparing monitoring results to performance standards show whether objectives have been achieved or adaptive actions are needed.

References

Williams, B.K., R.C. Szaro, and C.D. Shapiro. 2007. Adaptive Management: The U.S. Department of the Interior Technical Guide. Adaptive Management Working Group, U.S. Department of the Interior, Washington, DC.