

## **APPENDIX E**

### **Adaptive Management in the PAPA**

## Adaptive Management in the PAPA

### E.1 Introduction

The potential value of adaptive management to the National Environmental Policy Act of 1969 (NEPA) process is strongly supported by a number of agencies at the national level, including U.S. Department of the Interior (DOI), U.S. Environmental Protection Agency (EPA), and the U.S. Department of Agriculture Forest Service (USFS). Adaptive management in the Pinedale Anticline Project Area (PAPA) was first implemented through the Pinedale Anticline Working Group (PAWG).

In addition to the uncertainties about how natural systems will react to human interventions, it has become apparent that the current development as outlined in the 2000 PAPA ROD is not providing adequate protection for some resources. However, national demand makes it imperative that as much natural gas as possible be recovered from the PAPA. Project proponents, along with state and federal agencies, are continually striving to develop and use drilling and production mitigation technologies to lessen the impacts of natural gas recovery. There is uncertainty regarding the short- and long-term effectiveness of these new technologies, as well as uncertainty regarding the effectiveness of the mitigations and management restriction in this ROD. These uncertainties require that a number of assumptions be used to predict the impacts associated with development; those assumptions may or may not be partially or wholly correct, which means the impact analysis may or may not be partially or wholly correct. Also, considering the expected level of impacts associated with the proposed development, a significant off-site mitigation program will be necessary.

Uncertainty regarding the accuracy of the predictive assumptions and models used in the impact analysis and uncertainty regarding how the environment will react to future development in the PAPA using current and future untested development and mitigation technologies and untried restrictions, creates a need for a mechanism through which BLM can make incremental adjustments to field management over time, as information is gained about how resources are reacting to new technologies and/or restrictions. That mechanism is adaptive management.

The adaptive management process allows for changes in the management without further NEPA analysis, unless designated thresholds are reached. The process increases the speed at which managers learn how resources react to their decision and development activities, and thereby increases the speed at which managers can adjust mitigation and management restrictions for unanticipated impacts, or lack thereof. The adaptive management framework has several continuous steps: Decision is implemented; impacts are monitored; monitoring data are evaluated; modifications to mitigation or management restrictions are recommended, based on monitoring data; adaptive management decision is made and implemented; impacts are monitored; etc.

The purpose of this adaptive management process is to ensure that impacts of development and production are monitored, the information from that monitoring is evaluated and incorporated, on a regular basis, into future mitigation and management decisions.

### E.2 Goals and Objectives

The specific goals and objectives adaptive management for the PAPA are:

- Determine the effects of PAPA development on area resources;
- Determine the effectiveness of the mitigation measures contained in this ROD;
- Suggest modification to mitigation measures to achieve the stated goals/objectives;

- Assure oil and gas related BLM decisions regarding the PAPA are coordinated with non-oil-and-gas-related decisions (such as grazing, recreation, etc.)
- Provide a rapid response to unnecessary and undue environmental degradation, should any occur;
- Validate predictive models used in the SEIS and revised the models/projections as necessary based on field observations and monitoring;

### **E.3 Implementation Model**

BLM will implement and coordinate the adaptive management process. The BLM Pinedale Field Manager will accomplish that through the Pinedale Anticline Project Office (PAPO) as established in this ROD. The PAPO will be staffed by BLM, Wyoming Department of Environmental Quality Air, and Wyoming Game and Fish Department employees.

Details on the PAPO duties and objectives will be developed within 3 months of the signing of this ROD.

#### **E.3.1 PAPO Operating Procedures**

It is anticipated the PAPO will be necessary for at least the next 25 years, with funding support provided by the Proponents, Ultra, Shell, and Questar. Other PAPA operators may contribute to the Pinedale Anticline Monitoring and Mitigation Fund. Office oversight will be provided by an Agency Managers Committee consisting of individual agency heads or representatives from BLM, WDEQ, and WGFD. The committee will meet at least once per year to provide senior-level guidance, evaluate past progress, and review staffing levels and future needs.

In accordance with an agreement between the Wildlife Heritage Foundation of Wyoming and the PAPO Charter members, the Pinedale Anticline Monitoring and Mitigation Board will receive and hold all compensatory mitigation funding provided by PAPA operators. The PAPO will maintain an accurate accounting of all compensatory mitigation fund expenditures and provide the Agency Managers Committee an annual financial report.

Specific PAPO operational procedures will be developed by the office staff to meet defined goals and objectives.

Based upon the impacts and assumptions contained in the SEIS, Ultra, Shell and Questar have voluntarily proposed, and the BLM herein approves the creation of the Pinedale Anticline Monitoring and Mitigation Fund to mitigate potential impacts to wildlife, air, and other resources identified in the Final SEIS (BLM, 2008). The total contribution to the fund by Ultra, Shell, and Questar will be \$36 million. Ultra, Shell and Questar will each annually contribute \$7,500 for each well spudded on their respective leaseholds the previous calendar year. Ultra, Shell and Questar may make advanced contributions to the Fund to implement projects. Such contributions will be credited toward the end of development contributions. Annual contributions are anticipated to be \$1.8 million per year with an initial contribution of at least \$4.2 million. This Fund will provide the financial support for mitigation and monitoring for the life of the project.