

# Questions and Answers

## Pinedale Anticline Hydrogeologic Data Gaps (HDG) Report May 2012

### 1. Why is a Groundwater (GW) study being conducting on the Pinedale Anticline?

- a. There have been multiple low-level detections of hydrocarbons have been found since 2006 in water wells used for industrial operations in the Pinedale Anticline Project Area (PAPA).
- b. In response to these low-level hydrocarbon detections, the PAPA Supplemental Environmental Impact Statement (SEIS) Record of Decision (ROD) (2008) required the BLM, in cooperation with Wyoming Department of Environmental Quality (WDEQ) and Environmental Protection Agency (EPA), to complete a process under the *Regional Framework for Water-Resources Monitoring Related to Energy Exploration and Development* (USGS, 2007) to characterize the PAPA aquifers, modify the current monitoring program as necessary, and identify mitigation for all potential sources of the low-level hydrocarbon detections.

### 2. Who is participating in the GW study?

- a. The BLM is cooperating with the WY Department of Environmental Quality (WDEQ), the Environmental Protection Agency-Region 8 (EPA), and the proponents of the Pinedale Anticline 2008 Gas Development program: SWEPI, QEP, Inc., and Ultra Resources (USQ, or Operators). The contractor for this study is AMEC, Inc.

### 3. Why is the BLM publishing the HDG report?

- a. The BLM is providing this report under the Interim Groundwater/Aquifer Pollution Prevention, Mitigation and Monitoring Plan (Interim Plan) published in December 2008.
- b. The HDG report discusses groundwater flow and water quality characteristics of the Wasatch and Alluvial aquifers located beneath the Pinedale Anticline; aquifer characterization is specifically required by the PAPA SEIS ROD.
- c. It is the intent of the BLM and our agency partners to fully inform and engage the public in the ongoing groundwater study on the Pinedale Anticline and provide accurate dissemination of the results of this study.

### 4. Is the Sublette County Conservation District also monitoring water quality in water wells associated with PAPA development?

- a. Yes. This monitoring effort was carried forward in the PAPA SEIS ROD pending completion of a Final Plan.

### 5. Is the current monitoring program sufficient?

- a. A determination of this has not yet been made. Task 2 of the Interim Plan requires that we augment the existing monitoring program, as necessary.
- b. This determination will be discussed in the forthcoming Final Plan to be completed in 2013.



**6. Are there other reports that will be published? When?**

- a. Yes. The agencies will be providing 3 additional reports under the Interim Plan, which will culminate in the publication of a Final Plan.
- b. The 3 additional data reports include:
  - i. Low Level Petroleum Hydrocarbon Compound (LLPHC) - an evaluation of potential sources of low level petroleum hydrocarbons detected in existing industrial-use water wells and a discussion of additional best practices and/or further groundwater protection mitigation measures for activities occurring on the Pinedale Anticline (October 2012).
  - ii. A Numerical Groundwater Modeling Report (NM) describing the results of computer simulations of groundwater flow in the Wasatch and Alluvium environments (late 2012; final publication is pending receipt of the LLPHC report).
  - iii. A Mitigation Measures technical report assessing the adequacy of current water resource protection practices associated with oil and gas development. The report will include a discussion of additional best practices and/or further groundwater protection mitigation for oil and gas development (late 2012; final publication is pending receipt of the LLPHC and NM reports).
- c. The Final Plan will present for consideration of the agencies, a revised groundwater monitoring program. This report is expected in late 2012/early 2013.

**7. What is BLM going to do with the petroleum hydrocarbon data collected, but not reported in detail, in this report?**

- a. The petroleum hydrocarbon sample information will be analyzed within the ongoing LLPHC study. A specific Plan of Study (POS) was prepared to guide the investigation of potential sources of the low-level petroleum hydrocarbon detections. Potential sources being evaluated include, but are not limited to: natural petroleum hydrocarbon sources, water well sampling activities, historic and current oil field development activities, water well installation, spills and leaks.

**8. Should I be concerned about the quality of water in domestic and/or stock wells?**

- a. No. Compounds of petroleum hydrocarbons have not been detected above federal or state water quality standards in wells used for domestic or stock purposes.
  - One nested well pair installed for the Interim Plan study had sample results exceeding federal and/or state water quality standards for Benzene, Toluene, and Diesel-Range Organics; these 2 wells are located on an existing well pad (Warbonnet 7-15) with known contamination issues. This site is currently enrolled in the WDEQ voluntary remediation program (VRP) for source investigation and cleanup actions.
  - Remaining low level petroleum hydrocarbon detections are well below state and/or federal drinking water standards.

**9. Where can I find out more information regarding the WDEQ VRP program that the Warbonnet 7-15 is enrolled in?**

- a. <http://deq.state.wy.us/volremedi/index.asp>

**10. Where can I find more information regarding the PAPA Interim GW Study?**

- a. [http://www.blm.gov/wy/st/en/field\\_offices/Pinedale/anticline/resources/water.html](http://www.blm.gov/wy/st/en/field_offices/Pinedale/anticline/resources/water.html)