

**PUBLIC NOTICE OF PROPOSED DETERMINATION TO
ISSUE A CLASS IIR UNDERGROUND INJECTION CONTROL (UIC) PERMIT TO
RESOLUTE NATURAL RESOURCES COMPANY (RESOLUTE)**

Purpose of Public Notice

The U.S. Environmental Protection Agency Region IX (EPA) is soliciting public comments on its proposal to issue an Underground Injection Control (UIC) Class IIR permit (No. NN208000006) to Resolute Natural Resources Company for the injection of produced water and carbon dioxide (CO₂) into the Paradox Formation of the Aneth Unit. The permit will be issued for the purpose of enhanced oil recovery in the Phase III project area within the Aneth Unit. The Phase III area is located entirely on Navajo land in Township 40 South, Range 24 East, and near the town of Montezuma Creek, San Juan County, Utah. The company has submitted a complete permit application and EPA has completed the technical review of this application. This permit will be issued for a period of twenty (20) years and will be reviewed by EPA every five (5) years.

The address of the applicant is:

**Patrick E. Flynn
Environmental Health & Safety Manager
Resolute Natural Resources Company
1675 Broadway, Suite 1950
Denver, Colorado 80202
Phone (303) 534-4600, ext. 145**

Background

EPA has completed its review of the application for a UIC permit to allow construction, conversion, and operation of Class IIR injection wells in the Phase III project area of the Aneth Unit, submitted by Resolute. The applicant has applied for a permit to allow injection of produced water and CO₂ for the purpose of enhanced oil recovery (EOR) in the Paradox Formation. The permit will authorize injection in thirty-two (32) existing Class IIR injection wells and an unknown number of future Class IIR injection wells in the Phase III project area. The Aneth Unit has been operated as a water flood EOR project since the early 1960's. In addition, a pilot CO₂ injection project has been in operation for the past ten (10) years in a portion of the Aneth Unit. Resolute proposes to expand CO₂ injection to the full Unit and drill horizontal boreholes in selected wells within the Unit. Most of the existing Aneth Unit injection wells have been authorized by rule since the promulgation of the Navajo UIC regulations in 1988. A permit is required to authorize the construction and conversion of new Class IIR injection wells to CO₂/water injection and for expansion of CO₂ injection to the Phase III project area.

Resolute proposes to operate the wells at an average injection rate of 500 barrels of water per day (BWPD) and 1,400 thousand cubic feet of CO₂ per day (MCFPD) and maximum rates of 3,000 BWPD and 5,000 MCFPD, at a maximum wellhead pressure of 2,750 psig for water and 2,980 psig for CO₂. The new wells will be constructed or converted, and all wells will be operated in a manner to minimize the potential for any well failure and migration of fluids into underground sources of

drinking water (USDWs). The applicant has notified all interested parties within the Area of Review (AOR) and there are no drinking water wells in the AOR that will be impacted by injection in the existing and new injection wells located in the AOR.

The purpose of the wells is to inject CO₂ and produced water, which is directly associated with the production of oil and natural gas from the Paradox Formation oil wells, operated by Resolute, into the Desert Creek and Ismay members of the Paradox Formation within the subsurface interval of approximately 5,200 to 6,000 feet below the surface. The permitted injection interval will be set at approximately 5,100 to 6,000 feet to allow horizontal boreholes to be drilled through the lower Honaker Trail Formation before horizontal orientation is reached in the borehole in the Paradox Formation injection interval. The actual depths will be determined from wireline logs run in each well. The initial maximum allowable injection pressures (MAIPs) are set at the proposed maximum injection pressures for water and CO₂, which are below the parting pressure of the Paradox Formation as determined from step-rate testing of eight (8) injection wells in the adjoining McElmo Creek Unit. The MAIP may be revised as a result of future step-rate tests conducted by the operator and witnessed and approved by the EPA.

Corrective action considerations were applied to the 7,500 acre AOR. The proposed AOR boundary is defined by a fixed distance of one-half (1/2) mile from the Phase III project area. The Phase III AOR overlaps portions of the Phase I and Phase IV project areas and AORs. The Phase I area permit has completed the public notice and review process and will soon be issued as final. Resolute has not yet submitted an application for the Phase IV project area. The injection rates and cumulative volumes of water and CO₂ that would be injected into the injection zone over the term of the permit are not relevant to the determination of the area of review in an EOR operation since fluid volumes injected are generally equivalent to fluid volumes withdrawn from the reservoir over the project life. A total of thirty-two (32) wells in the AOR have known deficiencies in the casing and cement placement and will require remedial cementing if a casing leak is detected during operations or mechanical integrity testing. If casing leaks do not occur, remedial cementing will be required when the wells are plugged and abandoned.

The existing wells were constructed in accordance with the UIC regulatory requirements and are required to pass a mechanical integrity test (MIT) every three years. Newly constructed or converted wells will also be constructed in accordance with UIC requirements and will also be required to pass a MIT to the satisfaction of EPA prior to commencing injection and every three years thereafter. The purpose of the MIT is to ensure that there are no significant leaks in the tubing, packer, and casing. Demonstrations of mechanical integrity will also be conducted within 30 days after any workovers or alterations of the wellbore and prior to resuming injection.

Demonstration of financial responsibility for plugging and abandonment of the wells will be provided in the form of a surety performance bond, with an associated standby trust agreement. The bond amount will be based on a third-party estimate of the cost to plug and abandon (P&A) the average well, which will be reviewed and updated periodically to account for increased P&A costs.

EPA has made a preliminary determination to approve this application. This action is being taken as provided by Part C of the Safe Drinking Water Act and pursuant to the UIC Regulations, found in Title 40 of the Code of Federal Regulations (CFR) Parts 124, 144, 146, and 147.

Public Comments

All non-proprietary data submitted by the applicant and the Draft Permit prepared by EPA are contained in the administrative record for this injection well. EPA's Statement of Basis and Draft Permit are available for public inspection online at:

<http://www.epa.gov/region9/water/groundwater/uic-permits.html>, as well as at the locations listed below:

**Farmington Public Library
2101 Farmington Ave
Farmington, NM 87401
Phone 505-599-1270**

**United States Environmental Protection Agency, Region IX
Ground Water Office, Mail Code WTR-9
75 Hawthorne Street
San Francisco, CA 94105-3901
Phone 415-972-3541 or e-mail: harper.jim@epa.gov**

Public comments are encouraged and accepted, in writing, through September 16, 2008.

A request for a public hearing may be made during the thirty (30)-day comment period. It should be in writing and should state the nature of the issues proposed to be raised at the hearing. A public hearing will be held only if significant interest is shown.

Final Permit Decision and Appeal Process

After the close of the public comment period, EPA will issue a Final Permit decision, and will notify all participants regarding this decision. The final decision will be to issue or deny the permit. The final decision shall become effective thirty (30) days after the Final Permit is issued, unless no participant requests a change and no changes are made to the Draft Permit, in which case the Draft Permit shall become the Final Permit, effective immediately upon issuance.

Within thirty (30) days after the Final Permit decision has been issued, any person who has filed comments on the Draft Permit, participated in a public hearing, or takes issue with any changes in the Draft Permit, may petition the Environmental Appeals Board to review any condition of the permit decision. Participants are referred to 40 CFR Part 124.19 for procedural requirements of the appeal process.