

Report to the

City of Albuquerque

Bernalillo County

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Albuquerque Bernalillo County Water Utility Authority

# 2014 Annual Report

# Annual Report

2014

Prepared by the  
Albuquerque and Bernalillo County  
Water Protection Advisory Board

## Members:

J. Steve Glass, Chair  
Elizabeth H. Richards, Ph.D., Vice Chair  
Michael J. Bitner, P.G.  
John S. Derr, Ph.D.  
Pete Domenici Jr., J.D.  
Kerry J. Howe, Ph.D.  
Caroline Scruggs, Ph.D.  
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This report presents an overview of the Water Protection Advisory Board's (WPAB) areas of focus, activities, and accomplishments during calendar year 2014. In addition to summarizing WPAB activities, this report offers a list of the threats to water quality in the basin 2014.

## **Background**

Starting in 1988, the City of Albuquerque (City) and Bernalillo County (County) passed resolutions calling for action to clean up and protect the Middle Rio Grande's (MRG's) shared groundwater resources. After five years of planning and research, the Albuquerque/Bernalillo County Ground-Water Protection Policy and Action Plan (GPPAP) was adopted by the County in November 1993, by the City in August 1994, and subsequently by the Albuquerque Bernalillo County Water Utility Authority (Water Authority) after its creation in 2003.

GPPAP was updated and revised in 2009 to include surface water quality protection activities, resulting in a single Water Quality Protection Policy and Action Plan (WQPPAP). The WPAB was established by parallel City, Authority, and County ordinances and is made up of citizen members appointed by those governments. Policy Implementation Committee (PIC) member agencies work to provide solutions to improving public health, protect the environment, engineer water quality and enhance area residents' quality of life.

The WPAB was charged with studying surface and groundwater protection concerns and advising the City, the Authority, and the County accordingly. The WPAB was also tasked with overseeing implementation of the Groundwater Protection Policy, including conducting periodic reviews and evaluations of the effectiveness of the Groundwater Protection Policy and Action Plan and recommending any necessary changes to it. Figure 1 shows the WQPPAP planning area within the MRG basin. The planning area corresponds to the watersheds that either lie within or cross the Bernalillo County border.

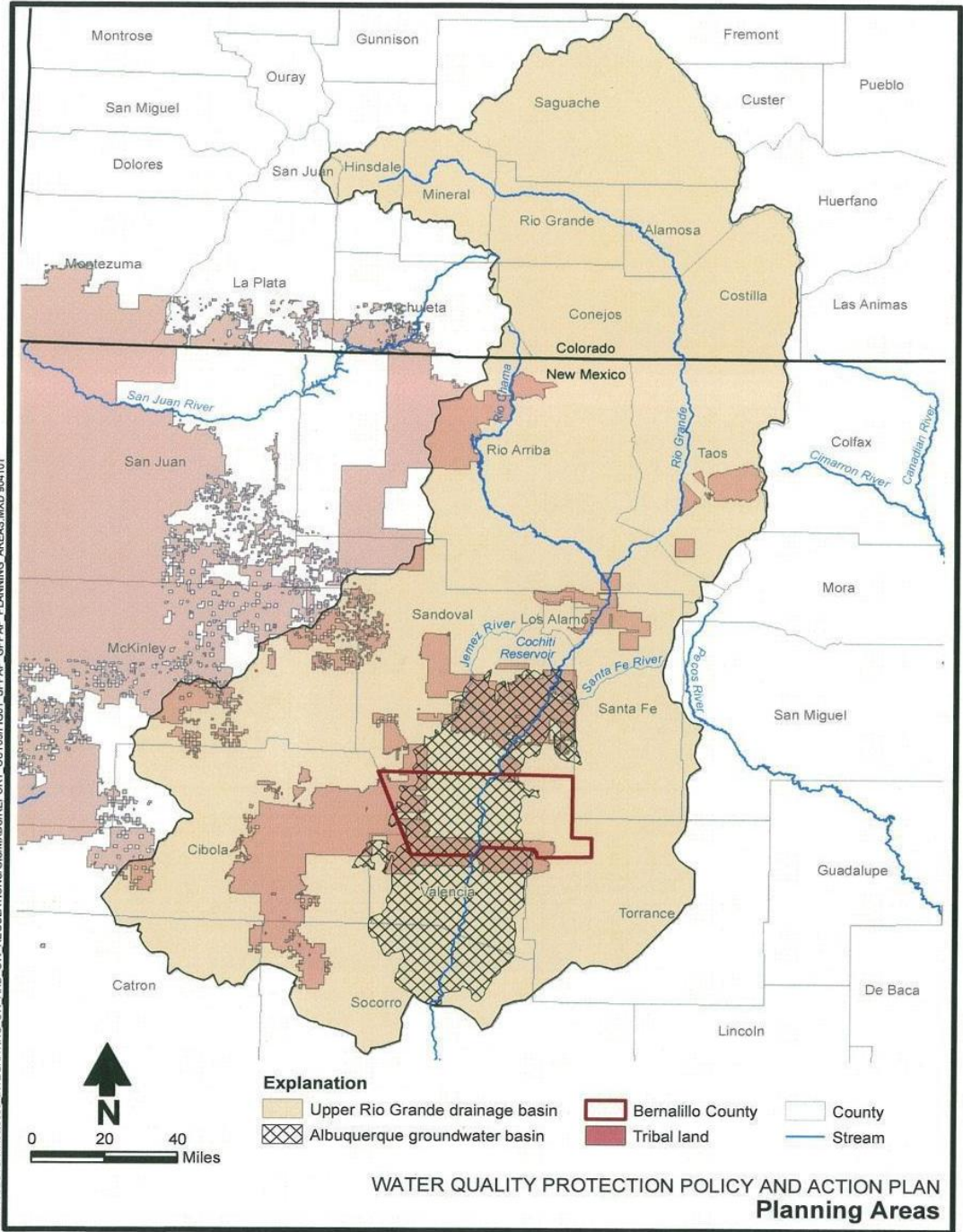


Figure 1

Figure 1. The WQPPAP Planning Areas include the Albuquerque groundwater basin and the Upper Rio Grande surface water drainage basin.

The purpose of the WPAB as established by ordinance is to:

- Study and advise the Authority, City, and County on surface and groundwater protection concerns;
- Oversee implementation of the Water Quality Protection Policy and Action Plan;
- Promote consistency in Authority, City, and County actions to protect surface and groundwater quality; and
- Advocate effective protection of surface and groundwater quality.

The WPAB consists of nine members, two appointed by the Water Authority, three appointed by the Mayor with the advice and consent of the City Council, and three appointed by the County Commission. One member is appointed jointly by the County Commission and the Mayor with the advice and consent of the City Council.

A Policy Implementation Committee (PIC), comprising of members from several organizations with water quality protection programs in the region, is responsible for implementing the WQPPAP. A summary of the current members' qualifications is located in Appendix A.

The PIC also helps the WPAB fulfill its purpose through technical assistance, administrative services, and staffing resources. Core PIC entities and agencies that implement activities related to the WQPPAP, in addition to other environmental and public health services, include:

Albuquerque Bernalillo County Water Utility Authority

- Compliance Division
- Water Resources Management Division

Bernalillo County

- Natural Resource Services

City of Albuquerque

- Environmental Health Department
- Stormwater Management Section

## Water Protection Advisory Board Activities for 2014

The WPAB is required to hold meetings at least once a quarter, but usually holds meetings on the second Friday of each month, addressing specific water quality concerns included on an agenda agreed to by the board members. The board receives much of its information from formal presentations by government agencies or environmental advocates conducting investigations or outreach activities on topics of interest. In 2014, the WPAB meeting agenda topics included presentations in the following areas, consistent with the board's established priorities for the year:

- I. Protection of groundwater quality in the Albuquerque Basin;
- II. Protection of surface water quality and Watershed Health, and;
- III. Foster intergovernmental coordination, cooperation, and communication.

Below is a summary of significant action items taken by the board and technical presentations heard by members during the 2014 calendar year.

### JANUARY

#### Action Items

Members approved revisions to a letter to Mr. Tom Blaine, Director of the Environmental Health Department of the New Mexico Environment Department (NMED), requesting that a five-year review of the remedy for the Mixed Waste landfill on the Sandia National Laboratories be performed during 2014 in accordance with the Final Order issued for the Resource Conservation and Recovery Act (RCRA) permit modification for the lab issued in 2005.

### FEBRUARY – NO MEETING WAS HELD.

### MARCH

#### Priority Updates – Groundwater Quality Protection

Ms. Katherine Yuhas, Water Conservation Officer for the Albuquerque Bernalillo County Water Utility Authority (Water Authority) and Ms. Amy Ewing of DBS&A, updated the board on the status of the Water Authority's Aquifer Storage and Recovery (ASR) pilot projects. The Water Authority currently has two ASR projects in the assessment phase, including the Bear Canyon Recharge Project and the Large-Scale ASR Project. The Bear Canyon project, located in the Bear Canyon Arroyo just downslope of the Sandia foothills, has demonstrated success by being able to infiltrate approximately 93% of the treated reuse water diverted into the arroyo for natural seepage to the aquifer. Ms. Ewing told the board that the Large Scale ASR Project, which is taking advantage of an existing production well that has been retrofitted to be used as a reinjection well. Treated San Juan-Chama water is pumped directly into the aquifer in an area with historically and naturally high arsenic levels, and is pumped out after a sufficient recharge has occurred. Ms. Ewing told the board that water removed from the test well was shown to have lower arsenic levels than were historically detected at this well.

Mr. Ken Ziegler of the City Environmental Health provided the board an update on the City's monitoring and remediation activities at the former Los Angeles Landfill (LA Landfill). Tetrachloroethylene (PCE) and Trichloroethylene (TCE) are solvents used for many industrial and manufacturing purposes, and both have been found in the ground water below the LA Landfill. PCE and TCE remain at detectable levels at the site, which has been remediated by the COA EHD since 2007, using "pump and treat" technology to clean up the ground water and soil vapor extraction to clean the contamination of the soil. Groundwater remediation activities have lowered PCE and TCE to just above the drinking water standard for this contaminant. COA EHD has requested the New Mexico Environment Department (NMED) for a modification to their abatement plan, and proposes to drill two more monitoring wells and pause the pump and treat system to determine if additional active remediation is needed in the future.

#### Action Items

Board members approved the annual report for 2013, and passed the WPAB's Open

Meetings Resolution, which expresses the board’s intent to follow the state Open Meetings Act that provided direction and instructions for governmental transparency.

## APRIL

### Priority Updates – Groundwater Quality Protection

Mr. Rick Shean of the Water Authority provided the board with a summary of the Water Authority’s response to the Kirtland Air Force Base (KAFB) Bulk Fuels Facility (BFF) Spill, and describing the service area in the area of the contamination. Mr. Shean told the board that the collaborative contingency plan between the Water Authority and the Air Force is still being drafted, however, the Water Authority has formally notified the New Mexico Environment Department (NMED) that in the event a production well is contaminated by the jet fuel spill, the Water Authority would shut down the affected well and adjust pumping and San Juan Chama water use to make up the difference until a new well or surface water rights could be acquired.

Dr. John Sigda and Ms. Eileen Marcillo of INTERA, Inc., the independent environmental consulting firm for the Water Authority, provided the board with the conceptual site model they have prepared for the Water Authority using groundwater quality data collected by KAFB’s contractor at the BFF site. INTERA has determined that there are significant data gaps in the KAFB’s investigation of the jet fuel spill, precluding an accurate understanding of the current extent and future movement of the contamination in the subsurface, including the aquifer, towards the Water Authority’s production wells.

## MAY

### Priority Updates – Watershed Health

Ms. Laura McCarthy of The Nature Conservancy and Ms. Susan Rich of the New Mexico Energy Minerals and Natural Resources Department (EMNRD) provided the board with the status of efforts by multiple public and private stakeholders to create a fund used to plan and implement proactive fire prevention activities in the upper reaches



of the Middle Rio Grande watershed. Ms. McCarthy told the board that there are several examples of funds like this in the world and the U.S., including programs in Denver and Flagstaff, and they address the increasing areas of high-severity burns, post-fire flooding and debris flows, and the resulting water quality degradation in their nearby watersheds.

Ms. McCarthy informed the board that the mechanism to collect the fund had not been determined as of yet, but in other areas the local water purveyor has served as the conduit for the revenue. Also, Ms. McCarthy told the board that federal and state legislation had recently been introduced in the respective elected entities, supporting the concept of protecting water quality through proactive management of watershed forest and rangelands. Ms. McCarthy added that the federal bill, HR 3992, titled the “Wildfire Disaster Funding Act”, is currently being considered by Congress, and all of the New Mexico Congressional delegates have signed onto it.

## **JUNE**

### Priority Updates – Watershed Health

Mr. Rick Billings of the Water Authority provided the board with the status of efforts for the Silvery Minnow spawning. Mr. Billings told the board that recent “pulses” of stream flow created by designed releases down the Middle Rio Grande (MRG) appeared to be successful in creating optimal spawning conditions for the Rio Grande Silvery Minnow along stretches of the MRG. Mr. Billings said that egg counts would be performed in the weeks following the pulses and the success of the artificial water releases would be better known the results of the counts.

### Action Items

Members voted to write a letter supporting the Wildfire Disaster Funding Act.

## **JULY – NO MEETING WAS HELD.**

## AUGUST

### Priority Updates – Watershed Health

Mr. Rick Billings of the Water Authority provided the board a status on the water quality of the Middle Rio Grande and how it affects the silvery minnow population. Mr. Billings told the board that the Rio Grande Silvery Minnow, which is protected as an endangered species, is a hardy fish and effects from water quality in the middle Rio Grande are limited. Mr. Billings cited a recent study performed by Tetra Tech that concluded that water quality is not the most important limiting factor affecting the silvery minnow, even though adverse water quality affect may have affected the species during some periods in the past.

## SEPTEMBER

### Priority Updates – Groundwater Quality Protection

Dr. John Sigda of INTERA Inc., the environmental consulting firm advising the Water Authority on technical issues concerning the Kirtland Air Force Base (KAFB) Bulk Fuels Facility (BFF) Spill, provided the board with a presentation describing a process that can be used to evaluate various “pump and treat” scenarios in an aquifer with uncertain hydraulic properties. Dr. Sigda proposed to the board that by evaluating a range of values for various aquifer property characteristics through an analytical element model to perform the simulations, one can easily determine the optimal pumping rates and capture zone locations to effectively extract a dissolved phase plume from a minimally characterized saturated zone. Dr. Sigda provided an example of results from model simulations performed by INTERA that used multiple extraction wells pumping placed near the estimated edge of the dissolved phase ethylene dibromide (EDB) plume at the KAFB BFF Spill site to stop the contamination from spreading. Dr. Sigda explained that many simulations were performed with variable inputs, including but not limited to the direction of the groundwater gradient, hydraulic conductivity in the shallower unconfined aquifer zone that the plume is currently entrained, and pumping rates for the extraction wells. Dr. Sigda concluded that a robust pump and treat system can be rapidly designed

using an analytical solution model that would draw enough water to stop the EDB plume, while creating a manageable amount of water in the process. This approach, Dr. Sigda added, could be adopted to develop other conceptual remedial plans for the EDB plume being considered by the Air Force.

## **OCTOBER**

Priority Updates

## **NOVEMBER**

Members attended the Carpe Diem West Seminar.

**DECEMBER – NO MEETING WAS HELD.**

## Top Areas of Focus for Water Quality Protection

Members of WPAB and PIC evaluated several identified threats to water quality in the MRG using the following criteria:

1. Nature and extent of contamination;
2. Proximity to drinking water supplies;
3. Regulatory effectiveness and efficiency, and;
4. Costs associated with not eliminating the threat.

Below is a table of the topics of significant concern to the WPAB.

Area of Focus	Explanation
KAFB BFF Spill	Several production wells could be impacted, and corrective action activities are slow.
Stormwater Quality	Large stormwater discharge above the Water Authority's San Juan Chama Drinking Water Project water diversion.
Groundwater Contamination Sites	Several groundwater contamination sites are being investigated / remediated in the basin, including leaking underground storage sites, Superfund Sites, and former industrial sites.
Watershed Health	Primary threat to surface water quality. No regulatory requirements for prevention activities, but debris flowing to drinking water plant diversion can be eliminated.
Septic Systems	Septic systems are designed to seep contaminants; however, local ordinances are in place to minimize impacts.
Lack of Local Ordinances	Many water quality protection measures in place, but may need to be updated / revised to address new threats.
SNL Mixed Waste Landfill	The mixed waste landfill contains a mixture of toxic chemical and radioactive wastes in a legacy unlined disposal pit. WPAB authored a letter to NMED in January 2014, urging enforcement of a 5-year re-assessment and reporting requirement established by a 2005 order of the NMED Secretary.

## Summary of Board Priority Activities for 2015

Based on the study and analysis of the topics and issues described above, the Board identified three areas of focus as priorities for calendar year 2014.

### ***PROTECTION OF GROUNDWATER QUALITY***

WPAB will continue to monitor the progress of groundwater remediation and investigation projects in the MRG, including the KAFB BFF Spill, Superfund sites, and other contamination sites that threaten the Water Authority water supply. Board members will be provided updates on the corrective action contingency planning activities at the KAFB BFF Spill, environmental restoration activities at the Sandia National Laboratories, and other regulated groundwater contamination sites.

### ***PROTECTION OF SURFACE WATER QUALITY***

WPAB will monitor the progress of the surface-water protection measures outlined in the Water Quality Protection Policy and Action Plan, adopted in 2009, is in the early stages. The Board will work with the Policy Implementation Committee to help ensure adequate progress occurs on these measures. Watershed health, stormwater quality, and impacts of fire-scarred lands on surface water quality will be examined during the year.

### ***FOSTER INTERGOVERNMENTAL COORDINATION, COOPERATION, AND COMMUNICATION***

More than a dozen local, regional, state, and federal agencies have the authority and responsibility to further the aims of the Water Quality Protection Policy and Action Plan. Building on the efforts noted above, the board intends to continue to serve as a forum to foster communication among these groups. Board members will review how agencies coordinate regulatory efforts, the status of the WBP, and interaction between local and federal agencies on resolving threats to water quality in the basin.



## APPENDIX A

### Summary of Member Qualifications

J. Steve Glass, Vice Chair (2013), 2014 Chair-Elect

- County appointment
- Term – August, 2012 to August, 2015
- Master of Science level of education, 39 years' professional experience in environmental chemistry and biology applications in environmental science and regulation.

Elizabeth H. Richards, Ph.D., 2014 Vice Chair-Elect

- City appointment
- Second term – August, 2013 to August, 2016
- Ph. D. level of education, 31 years' professional experience addressing energy and water sustainability problems.

Erik K. Webb, Ph.D., Chair (2013)

- City appointment
- Second term – August, 2013 to August, 2016
- Ph. D. level of education, 29 years' professional experience addressing and developing policy for groundwater, environmental restoration, and water resources problems.

Michael J. Bitner, P.G.

- Water Authority appointment
- Second term – March, 2013 to March, 2016
- Masters level of education, 31 years' experience in water resources management, environmental and hydrology issues.

John S. Derr, Ph.D.

- County appointment
- First term -- August, 2012 – August, 2015
- Ph. D. level of education, fifty years' of experience in studying and reporting geological, planetary and seismological phenomena.

Pete Domenici Jr., J.D.

- City appointment
- First term – August, 2012 to August, 2015
- J.D. level of education, 28 years practicing water rights, environmental and negligence and nuisance law.

Kerry J. Howe, Ph.D.

- Joint City – County appointment
- First Term – August, 2014 to August, 2017
- Ph.D. level of education, over 21 years of experience in water treatment technologies and professional engineering.

Caroline Scruggs, Ph.D.

- County appointment
- First term – October, 2012 to October, 2015
- Ph.D. level of education, 21 years' experience in civil and environmental engineering, and water resource planning.

Jennifer Thacher, Ph.D.

- Water Authority appointment
- First term – Sept. 2012 to Sept. 2015
- Ph.D. level of education, 12 years' experience in environmental economics, international water utility infrastructure, and watershed management.

\* Second term pending approval of the Water Authority Governing Board.