



# Technical Customer Advisory Committee

## AGENDA

### *Members*

Melissa Armijo	Dave Hill
Andrew Bernard	Laura McCarthy
Janie Chermak	Ege Richardson
Amy Ewing	Scott Verhines
Mike Hightower	

Thursday, June 1, 2017	4:00 PM	ABCGC – 7th Floor Conference Room 7096
1. Call to Order		4:00-4:05
2. Approval of Agenda		4:00-4:05
3. Approval of April 6, 2017 Action Summary		4:00-4:05
4. Compliance Division Presentation		4:05-4:55
5. Irrigation Budgets / Water Conservation Plan Update		4:55-5:55
6. Public Comment		5:55-6:00
7. Adjournment		6:00

NOTICE TO PERSONS WITH DISABILITIES: If you have a disability and require special assistance to participate in this meeting, please contact the Water Utility Authority Office, Suite 5012, Albuquerque/Bernalillo County Government Center, phone 289-3100, as soon as possible prior to the meeting date.



# **Technical Customer Advisory Committee**

## **ACTION SUMMARY**

**April 6, 2017**

**Members Present:**

Janie Chermak  
Amy Ewing  
Elaine Hebard  
Mike Hightower  
Dave Hill  
Laura McCarthy

**Members Excused:**

Andrew Bernard  
Scott Verhines  
Ege Richardson

**Water Authority Staff Present:**

Frank Roth, Senior Policy Manager  
Stan Allred, Chief Financial Officer  
H. Warren, Customer Services Manager  
Armida Magallanes, Customer Services Division  
Celeste Rael, Customer Services Division  
Juaquin Zamora, Customer Services Division  
Carlos Bustos, Water Conservation Manager

**Others Present:**

Arnel Santos, CDM Smith

**Item 1 – Call to Order - Note presence of quorum**

The meeting was called to order at 4:02 pm by Chair Dave Hill.

**Item 2 – Approval of Agenda**

Elaine Hebard requested that agenda item 7 be moved after agenda item 4. Laura McCarthy made a motion to approve the agenda. Elaine Hebard seconded the motion. The motion passed on a 4-0 vote.

For: 4	Bernard, Ewing, Hebard, Hill
Against: 0	
Excused: 5	Chermak, Hightower, McCarthy, Richardson, Verhines

*Janie Chermak entered the meeting after Agenda Item #2.*

**Item 3 – Approval of March 2, 2017 Action Summary**

Janie Chermak made a motion to approve the action summary as amended. Elaine Hebard seconded the motion. The motion passed on a 4-0 vote.

For: 4	Chermak, Ewing, Hebard, Hill
Against: 0	
Abstain 1	McCarthy
Excused: 4	Bernard, Hightower, Richardson, Verhines

*Mike Hightower entered the meeting during Agenda Item #4.*

**Item 4 – Review FY18 Proposed Operating/Capital Budgets**

Stan Allred provided an overview of the Water Authority's proposed operating and capital budgets for Fiscal Year 2018. He reviewed the budget highlights and assumptions, and the projected expenditures and revenues. He also discussed the capital improvement appropriations and the planned spending for the next ten years.

**Item 7 – Final Comments and Questions**

Elaine Hebard provided comments to the committee.

**Item 5 – Presentation of Customer Service Department Initiatives**

H. Warren and his staff provided an overview of the Customer Care Portal and the Clevest mobile technology. Armida Magallanes, Celeste Rael, and Juaquin Zamora provided demonstrations of the new technology. It was noted that there is more flexibility for customers to donate money to the Living River Fund. In addition, property managers can now manage multiple accounts under one login. Committee members suggested that the Water Authority provide more outreach to inform customers and the media of the new initiatives.

**Item 6 – Public Comment**

None.

**Item 8 – Adjournment**

The meeting concluded at 5:55 pm.

# ABCWUA Compliance Division

Mark Kelly, P.E.  
Compliance Division Manager



## Programs

- NPDES
- Water Quality
- Water Quality Laboratory

# NPDES Program

- National Pollutant Discharge Elimination System (NPDES) Permit
  - Plant Discharge – Effluent and Sludge
  - Sanitary Sewer Overflows

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# SWRP Effluent

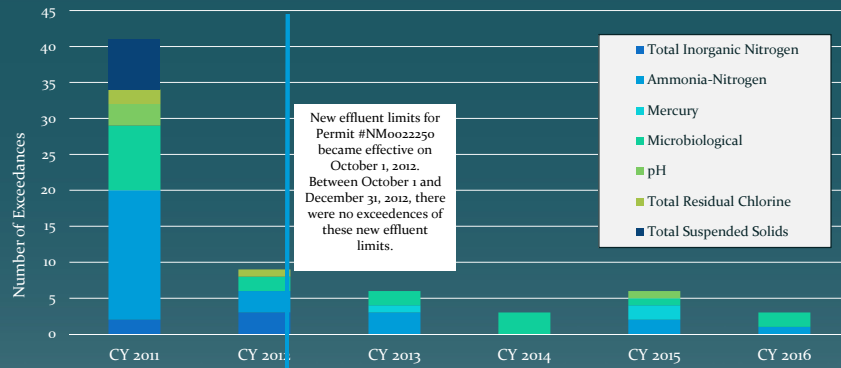
- Monitoring
  - Daily 24 hr composite sample (Ammonia, TSS, TIN, etc.)
  - Daily Grab sample (pH, DO, E. Coli, Cl-)
  - Weekly Mercury
  - Monthly metals (Cd,
  - Quarterly WET
  - Semi-annual Organics
- Reporting
  - Monthly DMR
  - Exceedances



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# Violations

Albuquerque Bernalillo County Water Utility Authority Southside Water Reclamation Plant  
NPDES Permit #NM0022250  
Exceedances of Effluent Limits by Calendar Year (2011-2016)

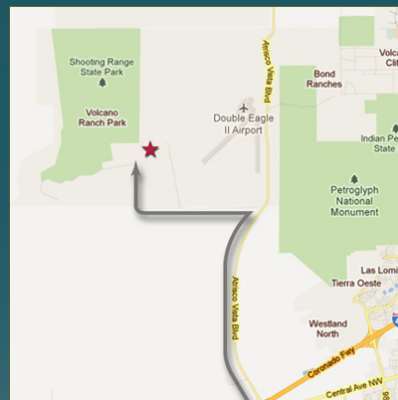


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# Sludge

- Disposal Methods
  - Rangeland Application
  - Composting
  - Surface Disposal
- Monitoring
  - Monthly fecal density
  - Bi-Monthly metals
- Reporting
  - Annual DMR
  - Exceedances

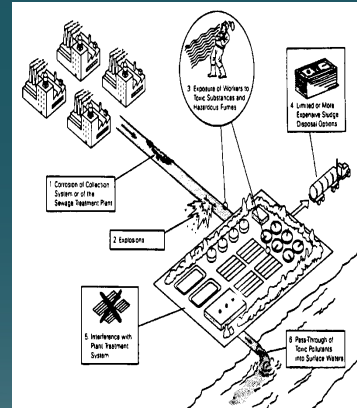


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# Pretreatment

- Sewer Use and Wastewater Control Ordinance
- Industrial Permittees
  - 70 Industries
- Fats, Oils, and Grease
  - 2100 Food Service Establishments
- Dental
  - 230 Dental Offices



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# Overflows

- Sanitary Sewer Overflows
- SWRP Overflows
  - Notification
  - Reporting
- Remediation

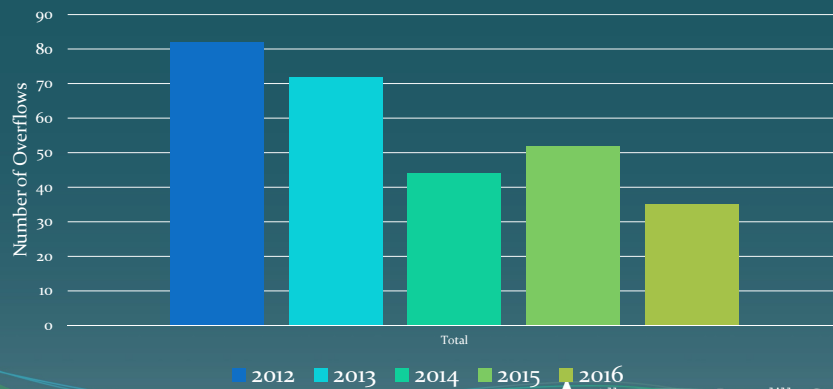


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# Collection System

Sanitary Sewer Overflows from the Collection System (Permit #NM0022250)  
2012-2016



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## Why have a CCR?

- SDWA Required
- Public notice of what was detected during required monitoring of regulated contaminants
- How does our drinking water compare to the SDWA set maximums?

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**Water System Information**

**Board Members**

**Phone Numbers**

**Websites**

Albuquerque Bernalillo County  
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Ground Water

+

Surface Water

→

**Sources of Water**

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# Definitions

## Definitions

**Cryptosporidium** is a microbial pathogen found in surface water throughout the U.S. We monitor untreated water for the presence of *Cryptosporidium*. If ingested, these parasites may produce symptoms of nausea, stomach cramps, diarrhea, and associated headaches. Note: *Cryptosporidium* is reported in oocysts, which are spores of the organism.

Based on the levels of *Cryptosporidium* found in source water, the USEPA requires water systems to use specific treatment techniques and to demonstrate their efficiency. The surface water treatment plant was designed to provide a multi-barrier approach (pre-sedimentation, clarification and filtration) to removing *Cryptosporidium* in order to meet the USEPA requirements.

**Detected:** The concentration of a substance measured at or above the USEPA specified Method Detection Limit.

**Maximum Contaminant Level (MCL):** The highest level of a contaminant allowable in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**ND (<1 PPB):** Not Detected at the Method Detection Limit specified in parentheses.

**Parts Per Billion (PPB):** Parts per billion or micrograms per liter (µg/L). 1 PPB = 0.001 PPM. Example: one drop of water in an Olympic-size swimming pool.

**Parts Per Million (PPM):** Parts per million or milligrams per liter (mg/L). 1 PPM = 1,000 PPB. Example: four drops of water in a 55-gallon barrel.

**picoCuries per liter (pCi/L):** A measure of radioactivity.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

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# Detected Contaminants

## 2016 Results of Compliance Monitoring at Entry Points to the Distribution System

USEPA sets regulations that limit the amount of certain substances in drinking water. USEPA defines where and how often samples for each substance must be collected. The table below shows the substances found in the most recent water quality testing done at the Entry Points to the Distribution System (EPTS) to comply with USEPA. (Detection limit in Parentheses.)

Substance	Sample Collection Years	Minimum Detected	Average Detected	Maximum Detected	Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal (MCLG)	Source	Health Effects Language
<b>Metals</b>								
Arsenic	2014-2016	Zero PPB	3 PPB	8 PPB	10 PPB (1 PPB)	Zero PPB (1 PPB)	Erosion of natural volcanic deposits.	See bottom of page 3.
Barium	2014-2016	Zero PPM	Zero PPM	0.2 PPM	2 PPM (0.1 PPM)	2 PPM (0.1 PPM)	Erosion of natural deposits.	
Chromium	2014-2016	Zero PPB	1 PPB	8 PPB	100 PPB (1.0 PPB)	100 PPB (1.0 PPB)	Erosion of natural deposits.	
<b>Minerals</b>								
Fluoride	2014-2016	0.3 PPM	0.5 PPM	1.2 PPM	4 PPM (0.10 PPM)	4 PPM (0.10 PPM)	Erosion of natural deposits.	Not Applicable
<b>Nutrients</b>								
Nitrate	2016	Zero PPM	0.3 PPM	3.0 PPM	10 PPM (0.10 PPM)	10 PPM (0.10 PPM)	Erosion of natural deposits.	Not Applicable
<b>Organics</b>								
Total Xylenes	2014-2016	Zero PPM	0.005 PPM	0.014 PPM	10 PPM (0.00009 PPM)	Zero PPM (0.00009 PPM)	Discharge from petroleum or chemical factories.	See page 3.
<b>Radionuclides</b>								
Gross Alpha Particle Activity	2014-2016	Zero pCi/L	0.6 pCi/L	2.6 pCi/L	15 pCi/L (0.8 pCi/L)	Zero pCi/L (0.8 pCi/L)	Erosion of natural deposits.	Not Applicable
Uranium	2014-2016	1 PPB	3 PPB	6 PPB	30 PPB (1.0 PPB)	Zero PPB (1.0 PPB)	Erosion of natural deposits.	Not Applicable
<b>Disinfectants</b>								
Chlorine	2016	Zero PPM	Not Applicable	Not Applicable	TT = Maintain required chlorine level or restore within 4 hours.	Not Applicable	Disinfectant (sodium hypochlorite).	Not Applicable
TT met at 100% of sites.								

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# Detected Contaminants

2016 Compliance Results of

## Distribution System Monitoring

USEPA sets regulations that limit the amount of certain substances in drinking water. USEPA defines where and how often samples for each substance must be collected. The table below shows the substances found in the most recent water quality testing done in the Distribution System to comply with USEPA. (Detection limit in parentheses.)

Substance Detected	Safe Level	DETAILED INFORMATION						
Microbiological		Source	Year of Samples	Minimum Detected	Average Detected	Maximum Detected	Maximum Contaminant Level (or equivalent)	Maximum Contaminant Level Goal (or equivalent)
Total Coliform (240 samples each month)	Yes	Coliforms are bacteria that are normally present in the environment.	2016	--	--	Total coliform bacteria were detected in 0.00% of the samples collected.	Presence of coliform bacteria in 5.0% or more of samples in any month.	0% of samples with detectable coliform bacteria.
Disinfectants								
Chlorine	Yes	Disinfectant (sodium hypochlorite).	2016	0.2 PPM	0.8 PPM	1.5 PPM	4 PPM (MRDL)	4 PPM (MRDLG)
Disinfection By-Products								
Total Trihalomethanes (THMs) <sup>1</sup>	Yes	Source By-product of chlorination.	Year of Samples 2016	Range of Results 1-59 PPB <sup>2</sup>		Maximum Detected 41 PPB (highest LRAA <sup>4</sup> at site 1).	Maximum Contaminant Level (or equivalent) 80 PPB (0.15 PPB)	Maximum Contaminant Level Goal (or equivalent) Not Applicable
Halacetic Acids (HAA5) <sup>2</sup>	Yes	By-product of chlorination.	2016	0-19 PPB <sup>2</sup>		14 PPB (highest LRAA <sup>4</sup> at site 1).	60 PPB (0.06 PPB)	Not Applicable
Lead & Copper								
Zones 1-20 (10 samples every 3 years)		Source	Year of Samples	90th Percentile	No. of Samples that Exceed Action Level	Maximum Detected	Action Level <sup>3</sup>	Maximum Contaminant Level Goal
Copper	Yes	Corrosion of household plumbing.	2015	0.29 PPM	Zero	0.47 PPM	1.3 PPM (0.01 PPM)	Zero PPM
Lead	Yes	Corrosion of household plumbing.	2015	2 PPB	Zero	4 PPB	15 PPB (1.0 PPB)	Zero PPB

<sup>1</sup> THMs are the sum of the concentrations of the trihalomethane compounds. <sup>2</sup> HAA5s are the sum of the concentrations of the haloacetic acid compounds. <sup>3</sup> The range represents the minimum and maximum of all quarterly analytical results at all 12 locations. <sup>4</sup> The Locational Running Annual Average (LRAA) is the average of analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. <sup>5</sup> Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. The Action Level is compared to the concentration detected in the 90th percentile sample.

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# Detected Contaminants

2016 Results of Compliance Monitoring at the

## Surface Water Treatment Plant

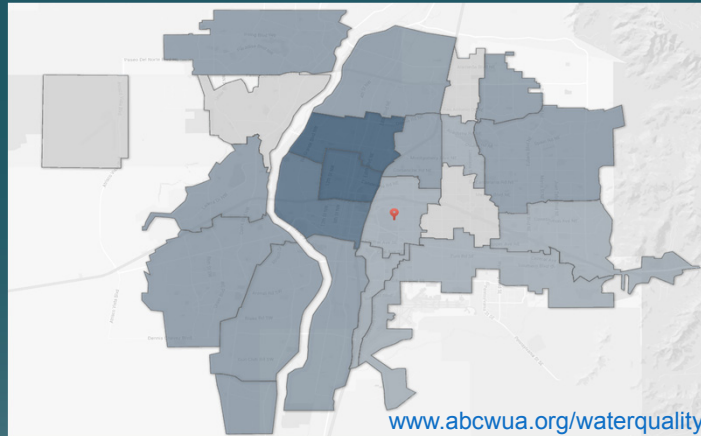
USEPA sets regulations that limit the amount of certain substances in drinking water. USEPA defines where and how often samples for each substance must be collected and how they must be analyzed. The table below shows only the substances found in compliance monitoring for the finished water at the Surface Water Treatment Plant. For surface water, USEPA also requires that specific treatment techniques are used and shown to be effective. (Detection limit in parentheses.)

Substance	Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal (MCLG)	Minimum Detected	Average Detected	Maximum Detected	Source
Microbiological						
Cryptosporidium (untreated water)	TT	Zero Oocysts/L	Zero Oocysts/L	0.09 Oocysts/L	1.0 Oocysts/L	Human and animal fecal waste.
Turbidity <i>A measure of cloudiness of the water. It is a good indicator of the effectiveness of filtration.</i>	1 Nephelometric Turbidity Unit (NTU) 95% of the finished water samples must be less than 0.3 NTU	Zero NTU	0.01 NTU 100% of samples taken in each month were less than 0.3 NTU.	Not Applicable	0.10 NTU	Soil runoff.
Total Organic Carbon (TOC)	TT (1.0 PPM)	Not Applicable	ND (<1.0 PPM)	0.9 PPM	1.6 PPM	Naturally present in the environment.
Minerals						
Fluoride	4 PPM (0.10 PPM)	4 PPM	0.35 PPM	0.35 PPM	0.35 PPM	Erosion of natural deposits.
Nutrients						
Nitrate	10 PPM (0.10 PPM)	10 PPM	0.15 PPM	0.15 PPM	0.15 PPM	Erosion of natural deposits.
Disinfection By-Products						
Bromate (for health effects - bottom left, page 3).	10 PPB (1 PPB)	Zero PPB	1.1 PPB	2.6 PPB	4.3 PPB	By-product of drinking water disinfection.
Disinfectants						
Chlorine	Maximum Residual Disinfectant Level (MRDL) 4 PPM	Maximum Residual Disinfectant Level Goal (MRDLG) 4 PPM	Minimum Detected 0.7 PPM	Average Detected 1.3 PPM	Maximum Detected 2.0 PPM	Source Disinfectant (sodium hypochlorite).

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## Additional Information Available



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## Compliance With Other Drinking Water Regulations

### Unregulated substances detected during UCMR3: Laboratory Minimum Reporting Level (MRL\*)

Substance Name	MRL	Range of Results	Average of Results
1,4-dioxane	0.07 PPB	<0.07 to 0.19 PPB	<0.07 PPB
Chlorate	20 PPB	<20 to 169 PPB	88 PPB
Chromium, total	0.2 PPB	<0.2 to 9 PPB	0.96 PPB
Chromium-6	0.03 PPB	<0.03 to 7.3 PPB	0.97 PPB
Molybdenum	1 PPB	<1.1 to 7.5 PPB	3.1 PPB
Strontium	0.3 PPB	144 to 631 PPB	379 PPB
Vanadium	0.2 PPB	<0.2 to 14 PPB	3.4 PPB

\* MRL is the lowest concentration that can be detected by laboratory equipment.

More information about the Unregulated Contaminant Monitoring Program is available at [www.epa.gov/dwucmr](http://www.epa.gov/dwucmr).

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# Educational Information

## USEPA Special Notice For Immuno-compromised Persons

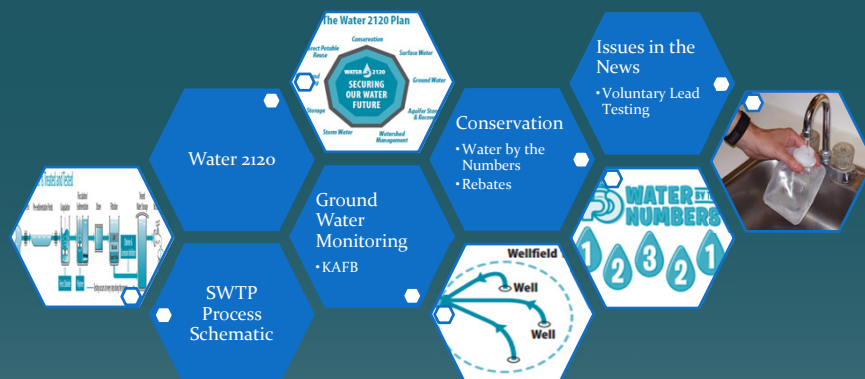
*Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.*

## USEPA Arsenic Health Effects Language:

**For water containing greater than 5 PPB of arsenic and up to and including 10 PPB of arsenic:**  
*While your drinking water meets USEPA's standard for arsenic, it does contain low levels of arsenic. USEPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. USEPA continues to research the health effects of low levels of arsenic, which is a metal known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.*

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# Optional Info



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# Voluntary Lead Results

2016 Customer Requested Testing				2015 USEPA Required Testing			
Parameter	Minimum	Maximum	90th Percentile	Minimum	Maximum	90th Percentile	Action Level
Lead PPB	0	13	2	0	4	2	15
Copper PPM	0.01	0.39	0.24	0.03	0.47	0.29	1.3

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# Lead Testing

- Also available in 2017
- Sign up Online
  - [www.abcwua.org/leadsurvey](http://www.abcwua.org/leadsurvey)
- Call 289-3653



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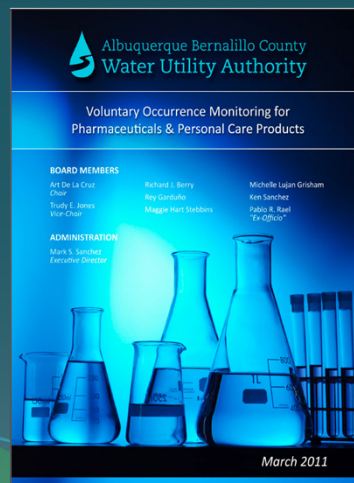
## Special Sampling

	Substance	Timeframe	Sampling Frequency
UCMR <sub>3</sub>	Unregulated Contaminants	March	Every 5 years
	• VOCs, SOCs		
	• Cr(VI), total Cr		
	• Hormones		
LT <sub>2</sub>	Cryptosporidium	April	Monthly for 24 months
	Turbidity		
	E.Coli		
Burton and Ridgecrest Wells	VOCs, SOCs, EDB	Since 2010	Monthly

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## Additional Monitoring



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- UCMR<sub>4</sub>
  - 30 Contaminants
  - Includes Cyanotoxins
- Pharmaceutical and Personal Care Products Monitoring
  - Update 2011 Report
    - 113 Substances
    - 6 Monitoring Locations
    - Will Include Reuse

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# Water Quality Laboratory



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# Accreditation

- A2LA Audit every 2 years
- Internal audit annually

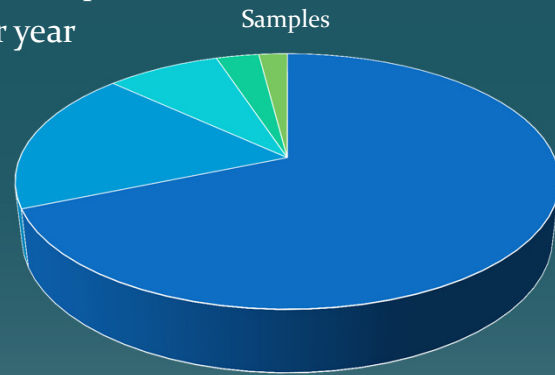


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## Workload

- 365 Days a year
- 1,447 Results reported per week
- 75,231 Results per year



SWRP Water Quality Pretreatment Water Reuse MDC

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## New LIMS System

- 14 to 9 Laboratory analysts



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## **WATER CONSERVATION**

- Irrigation Budgets
- Water Conservation Plan Update

**Carlos A. Bustos**  
**Water Conservation Program Manager**  
**TCAC presentation June 1<sup>st</sup>, 2017**

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## **BACKGROUND**

### **Irrigation Budgets**

- In the early 2000's the seasonal "conservation charge" was instituted to discourage excessive summer irrigation use.
- "Conservation Charges" occur when seasonal use is at least double the winter average.
- This doesn't make sense for irrigation accounts since they use little water in the winter. In fact, many systems are turned off.

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## CURRENT LANDSCAPE ORDINANCE

- Ordinance allows **35"** (22 gals per sq ft) of water per year for each irrigated square foot of landscaped area.
- Athletic fields get **45"** (28 gals per sq ft) and golf courses **40"** (26 gals per sq ft)
- An **"irrigation budget"** is established for each site with an irrigation meter
- Surcharges are assessed once per year by comparing the entire previous year's usage to the total irrigation budget

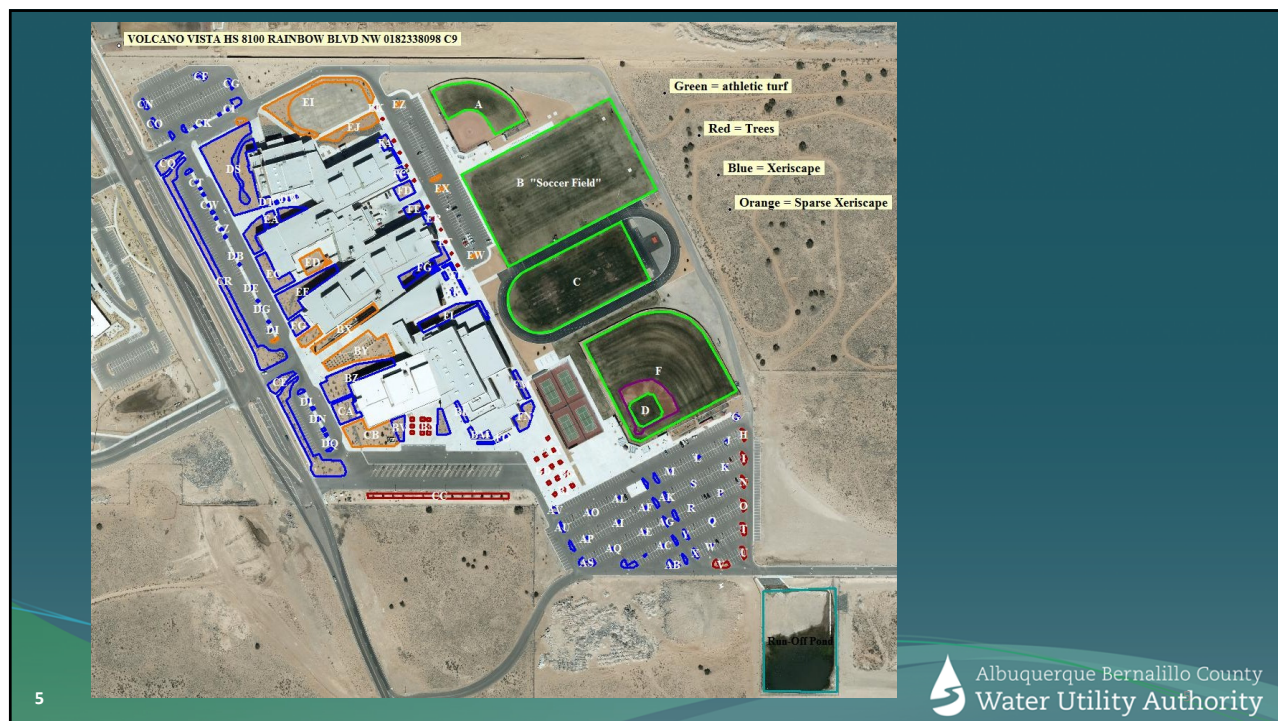
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## HOW IRRIGATION BUDGETS ARE ESTABLISHED

Metric	2004	2016
<u># of Irrigation Accts</u>	1362	2524
<u>Approx. # of Sites</u>	912	1412

- For each site with an irrigation meter, our contractor, Smart Use, LLC measures irrigated square footage according to the type of plants – athletic turf, other turf, trees, or xeriscape, golf course.
- Measurements are done using high resolution aerial photography and mapping software. An on-site visit is also done.

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## SITES WITH MULTIPLE IRRIGATION METERS

**A site can have many irrigation meters**, for example, the common areas of an HOA like Tanoan Communities East (41 accts).

All meters at a “site” are **combined** and all square footage at the site is combined into **one irrigation budget**. It would be impractical to determine exactly how much irrigation is served by each meter.

## EXAMPLE OF HOW IT WORKS MONTGOMERY PARK

SF of turf and trees:	656,014
Annual Irrigation Budget	19,503 units
<b>Irrigation Meters:</b>	<b>3</b>
Accounts and 2016 Usage:	
1854579560	11,362 units
5874579560	848 units
9874579560	<u>6,339 units</u>
Total Usage for 2016	18,549 units
Surcharge for 2016 = \$0	

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## CALCULATION OF SURCHARGES

Annual Water Use	Surcharge	Cost of Surcharge
Up to 100% of Budget	None	
Up to 150%	50% of commodity rate for each unit over the budget	\$1.04/unit from 100-150% of budget
150% -200%	100% of commodity rate for units over 150% of budget	\$2.08/unit from 150-200% of budget
Over 200%	150% of commodity rate for units over 200% of budget	\$3.12/unit over 200% of budget

**Landscape Irrigated area: 2,579 sq ft**

**Budget: 75 units for the yr**

**Units used: 276**

**2016 Surcharges: 201 units**

**Tier 1 (Up to 150%)** 37.5 units \* \$1.04 = \$37.84

**Tier 2 (150 – 200%)** 37.5 units \* \$2.08 = \$78

**Tier 3 (Up to 200%)** 126 units \* \$3.12 = \$393.12

**TOTAL SURCHARGE: \$508.96 plus tax**

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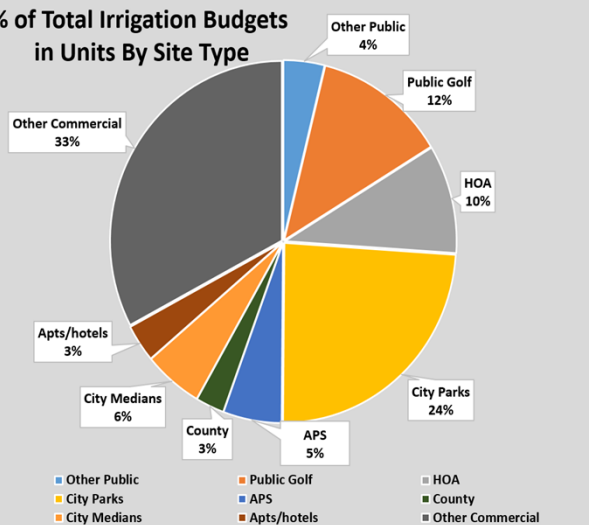




EXISTING SITES					
Site Type	Budget	Use	% Used	Surcharge*	MOU Charge
City Park	1,317,574	1,574,728	120%	\$535,932	\$255,185
Public Golf Course	935,899	980,644	105%	\$144,772	
Multi/Apartment	168,255	194,147	115%	\$97,822	
Retail	243,735	147,124	60%	\$70,164	
HOA	563,799	386,267	69%	\$67,267	
APS	306,814	301,465	98%	\$62,788	
Median	300,185	114,939	38%	\$45,684	
Private Golf Course	456,041	340,405	75%	\$45,280	
County	136,395	130,738	96%	\$27,986	
Restaurant	24,835	19,491	78%	\$22,340	
Office	65,974	51,025	77%	\$19,034	
Other City	120,709	105,496	87%	\$17,399	
Other Commercial	224,876	105,948	47%	\$13,211	
City PWD	24,952	11,122	45%	\$10,750	
Hotel/motel	18,547	19,302	104%	\$8,018	
Church	39,129	23,176	59%	\$6,050	
Healthcare	30,915	21,324	69%	\$3,311	
Higher Education	28,733	18,553	65%	\$1,474	
Manufacturing	5,580	1,455	26%	\$1,426	
Wholesale/warehouse	7,592	4,522	60%	\$1,387	
Single Family	4,505	1,581	35%	\$669	
Fitness/rec	927	1,256	135%	\$345	
Other School	137,285	97,728	71%	\$107	
Utilities	10,874	380	3%	\$102	
Mobile Home Park	45	57	127%	\$13	
Federal	10,061	4,640	46%	\$0	
Car Wash	370	0	0%	\$0	
Sm Comm Non Irr	1,078	143	13%	\$0	
State	24,731	2,015	8%	\$0	
<b>Grand Total</b>	<b>5,210,415</b>	<b>4,659,671</b>	<b>89%</b>	<b>\$1,203,330</b>	<b>\$255,185</b>

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% of Total Irrigation Budgets  
in Units By Site Type



## HISTORICAL DATA

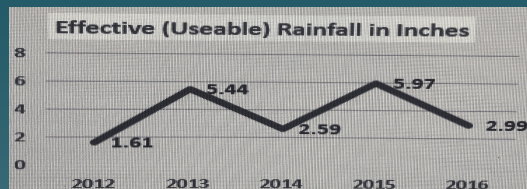
Irrigation budgets were first **established in 2004** and the program has grown since then....

Metric	2004	2016
# of Irrigation Accts	1362	2524
Approx. # of Sites	912	1412
% with Surcharges	46%	35%
Total Surcharges	\$ 523,952	\$ 1,185,153

## RESULTS BY TYPE OF SITE

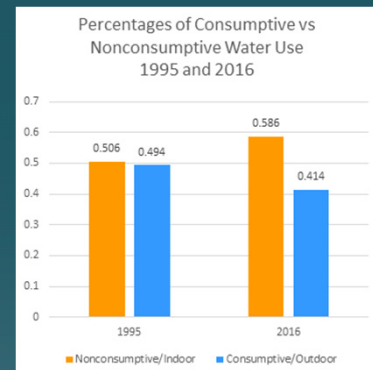
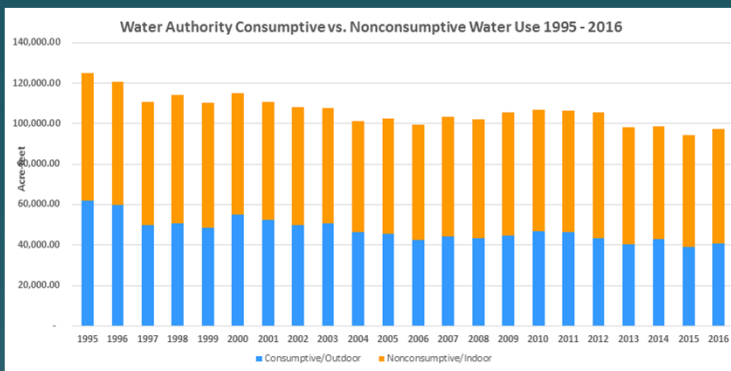
% of IRR BUDGET USED	ALL SITES	APTS/ HOTEL	OTHER PUBLIC	PUBLIC GOLF	HOA	PARKS	APS	OTHER COMM	COUNTY	MEDIANS
2011	94%	133%	103%	133%	90%	109%	100%	66%	70%	24%
2012	93%	128%	89%	126%	80%	117%	102%	73%	86%	36%
2013	90%	130%	83%	118%	75%	103%	99%	74%	78%	46%
2014	91%	120%	77%	125%	70%	115%	102%	70%	84%	36%
2015	82%	115%	59%	106%	62%	109%	82%	60%	80%	32%
2016	90%	115%	77%	119%	68%	120%	98%	64%	96%	38%

Note that 2015 was the wettest year while 2016 was much dryer



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## Water Use 1995-2016



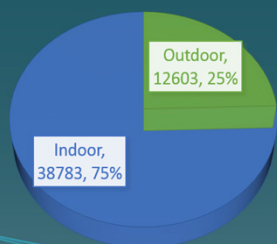
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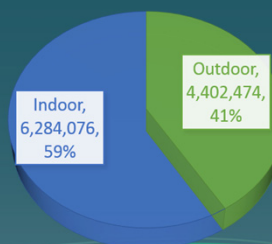
## Water Conservation Rebate Trends and Data

Rebate Type	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL	TOTAL Amount
Xeriscape	326	225	228	285	320	205	131	89	1809	3,284,095
Outdoor	891	939	710	2210	2041	1076	1451	1392	10710	466,678
Cisterns	1	3	52	18	6	2		2	84	651,701
Outdoor									12603	4,402,474
Toilets	3152	3049	2152	1755	1651	1498	1058	551	14866	3,953,601
Washing Machine	2480	5080	3869	3068	2753	2228	1830	1015	22323	2,238,500
Hot Water Recirculation	107	121	106	64	106	57	52	39	652	65,400
SwampCoolerThermostat			640	87	81	63	47	24	942	26,575
Indoor									38783	6,284,076

### REBATE PARTICIPATION

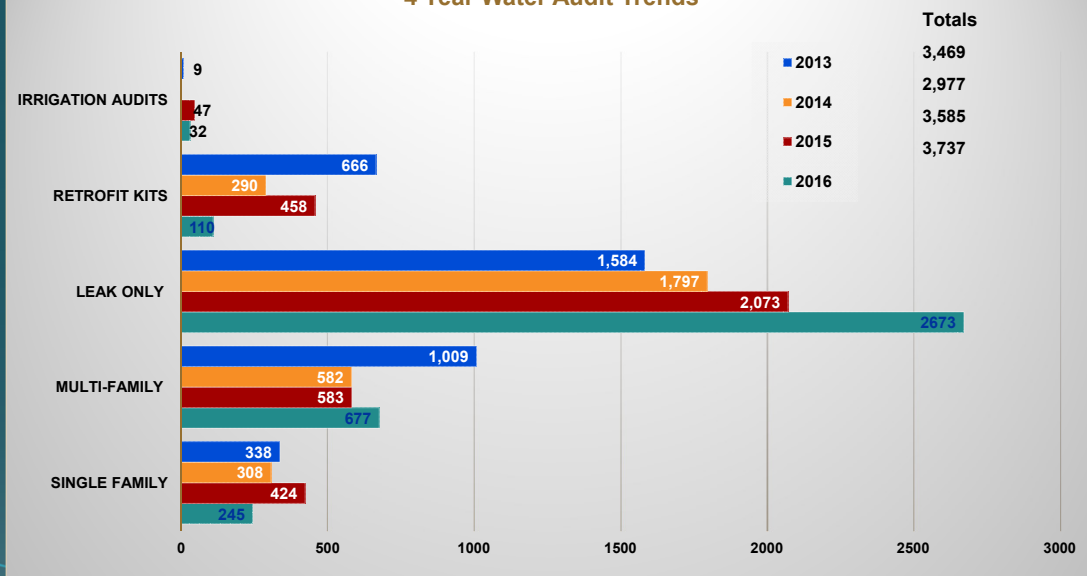


### TOTAL \$\$\$ REBATES



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## 4 Year Water Audit Trends



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## Current Programs How are we going to use existing programs?

### Water Waste Ordinance & Program

- Amend the ordinance to incorporate 'warning system' language and less enforcement and more education

### Audits

- A make over of leak and indoor audits current practices to emphasize irrigation audits

### WaterSmart Workshops

- Build customer proficiency on outdoor topics
- Events at Lowes, Home Depot & Garden Centers

### Indoor rebates

- Toilet, Washing Machine Rebates, Hot Water Recirculation System, Urinals & Showerhead – determine how and when to phase these out in order to use funds to expand outdoor efficiency efforts
- Evaporative cooler thermostat – no change

### Outdoor rebates

- Multi-setting sprinkler controller – highlight proven ET Weather Based Controllers by partnering up with Irrigation Supply Stores
- Sod rental equipment & compost–updated the xeriscape form to include this rebates in the application
- Rain sensors – emphasize the need of rain sensors with ET Weather Based Controllers
- PRV & BPV – no change
- Rainwater Harvesting – no change
- High efficiency rotating sprinkler nozzle – emphasize this rebate via marketing at irrigation supply stores (marketing material)
- Treebate – emphasize this rebate via marketing efforts at garden centers (marketing material)
- Xeriscape - emphasize this rebate via marketing efforts to irrigation only account customers (HOAs, Public Agency & Multifamily)

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## Water Conservation Plan 2037

### Proposed new program ideas for conversation...

#### 1) **Emphasizing Outdoor Education and Rebates**

- **Monthly Garden Newsletter**
- **WaterSmart Workshops and Events** - four segments: Tree Series, Low Water Use Landscapes, Irrigation Systems, and Family/Community Gardening
- **Gardens to Go** -plant yourself xeric native perennial garden kits
- **Soil Wise Landscapes** – rebates for humectants, compounds and organic wood mulch
- **Rain Garden Program** - identify irrigation zones that could be disabled to create rain gardens
- **New outdoor rebate – real-time sensors**

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- 2) **Irrigation Education** – xeriscape rebate participants, high water users and irrigation only accounts
- 3) **Public Agency Program** – water management tool, irrigation training, surcharges agreements
- 4) **Industry partnership** – “Los Expertos de Riego” Academy, garden center and irrigation supply stores marketing
- 5) **Cooling Tower Rebates** – equipment or reuse
- 6) **More Trees in our City** – 1000+ trees next 10 years, Treebate emphasis
- 7) **Water Waste Ordinance** – amend ordinance “Warning System”
- 8) **Water Loss Program** – AMI continuous usage customer notification