



# MEETING MINUTES

## Shannon Road/El Camino Del Cerro Water Quality Assurance Revolving Fund (WQARF) Site Community Advisory Board (CAB) Meeting

November 21, 2013, 6 - 7 p.m.  
Ellie Towne Flowing Wells Community Center  
1660 W. Ruthrauff Rd., Tucson, Arizona 85701

### FINAL MINUTES

**CAB Members Present:** Randall (Randy) Abbey, Robert (Keith) Adkins, Bob Ornelas, Gary Burchard, Martin (Marty) Drozdoff, Terri Hutts, Albert Pesquiera, and Kerry Xhaferi

**CAB Members Absent:** None

**ADEQ Staff Present:** William Ellett, ADEQ Manager; Scott Green, ADEQ Project Manager; Marvel Encinas, ADEQ Administrative Assistant; Hazel Cox ADEQ Hydrologist; Matt Narter, ADEQ Hydrologist; and Delfina Olivarez, ADEQ Community Involvement Coordinator

**Members of the Public Present:** Mike Block, Metro Water District; Harlan Agnew, Pima County Attorney; Jim Faas, Pima County; Ellen Wheeler, Pima County; Dave Eaker, Pima County; and Gary Burchard, Metro Water District

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The meeting began at 6:00 p.m.

#### **1. Call to Order/Introductions**

Ms. Olivarez greeted everyone and conducted introductions. Co-Chair Mr. Abbey took over.

#### **2. Approval of Meeting Minutes**

Mr. Pesquiera motioned to take meeting minutes home and vote on at the next meeting. Ms. Xhaferi seconded the motion; motion passed.

#### **3. Introduction of new ADEQ Project Manager Scott Greet and Site Update/Q&A**

Mr. Green introduced himself, presented site history, and current site status. Down gradient movement of the groundwater contamination plume is being contained by the Metro Water S-Shannon pumping well. The Remedial Investigation (RI), when completed, will detail the source(s) of contamination and the distribution within the existing plume. Mr. Green summarized the next steps in the WQARF process and ended with an introduction of Mike Block of Metro Water.

Please refer to power point below.

**4. GAC Treatment update – Mike Block, Metro Water**

Mr. Block introduced himself and gave a basic overview of Metro Water and the Shannon Water Well treatment system, current status and future plans of the water district.

Please refer to power point below.

**5. CAB Discussion/Business and review of Charter**

Mr. Burchard requested, when the Remedial Investigation Report (RI) is finalized that ADEQ will email the CAB; a March CAB meeting will be organized, the Public notice will have a 60 day public comment period, and an additional meeting will be held at the closing of the public comment period.

CAB elected to take charter home, and then discuss any changes at the next meeting.

**6. CAB Outreach Membership discussion**

Mr. Pasquiera mentioned door hangers as a possibility of attracting new members. Mr. Block offered to run advertisement in community news letter.

**7. Call to the Public**

No comments.

**8. Next Meeting Date/Agenda Discussion**

The next meeting tentatively scheduled for Thursday, March 13, 2014.

**9. Adjournment**

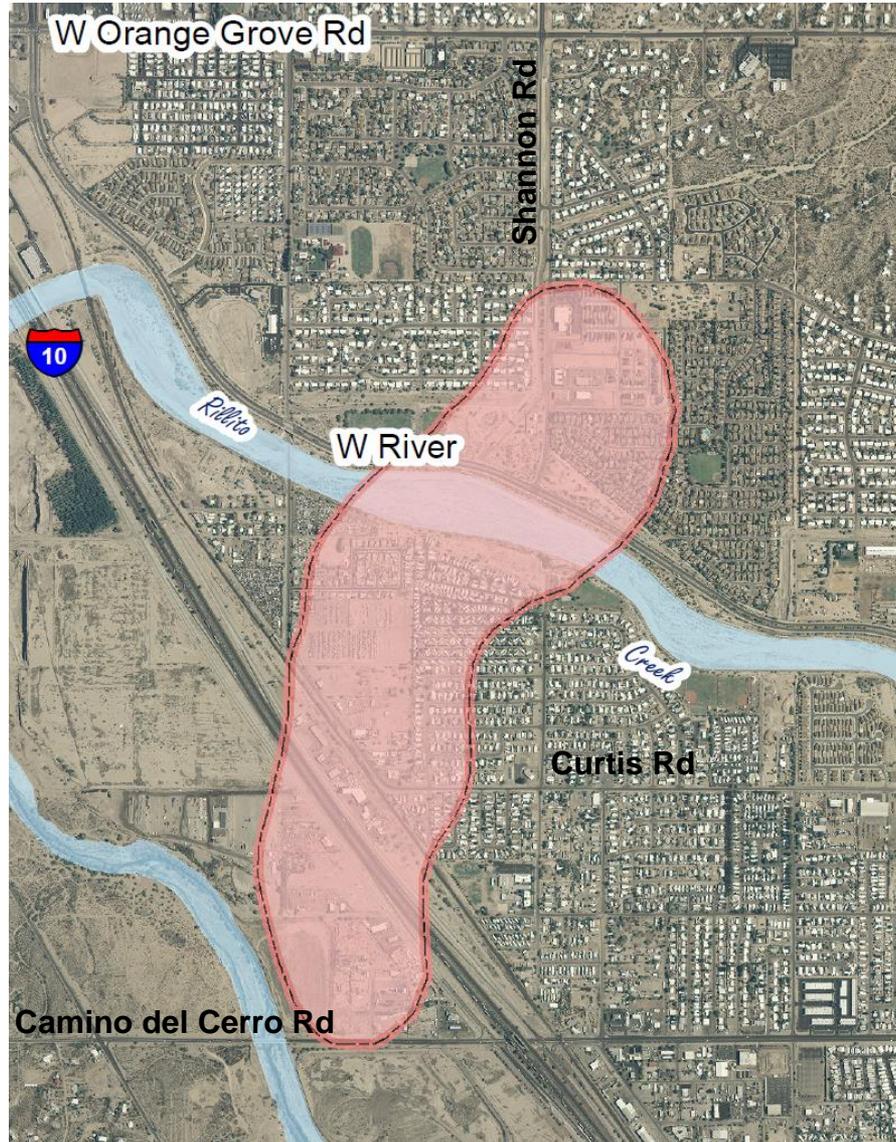
Mr. Abbey motioned to adjourn, Mr. Pesquiera seconded; meeting adjourned at 7:30 p.m.

*This meeting recorded on a digital device as a record of the proceedings. To listen to a recording, or for additional documents mentioned in these minutes, contact ADEQ, Delfina Olivarez at 602-771-4710.*



**Shannon Rd/ECDC  
WQARF Site  
Tucson, Arizona**

**ADEQ Southern Regional Office**  
**Scott R. Green, Project Manager**



## Water Quality Assurance Revolving Fund Sites

- Preliminary Investigation (PI);
- Early Response Action (ERA);
- Remedial Investigation (RI);
- Feasibility Study (FS);
- Proposed Remedial Action Plan (PRAP);
- Record of Decision (ROD);

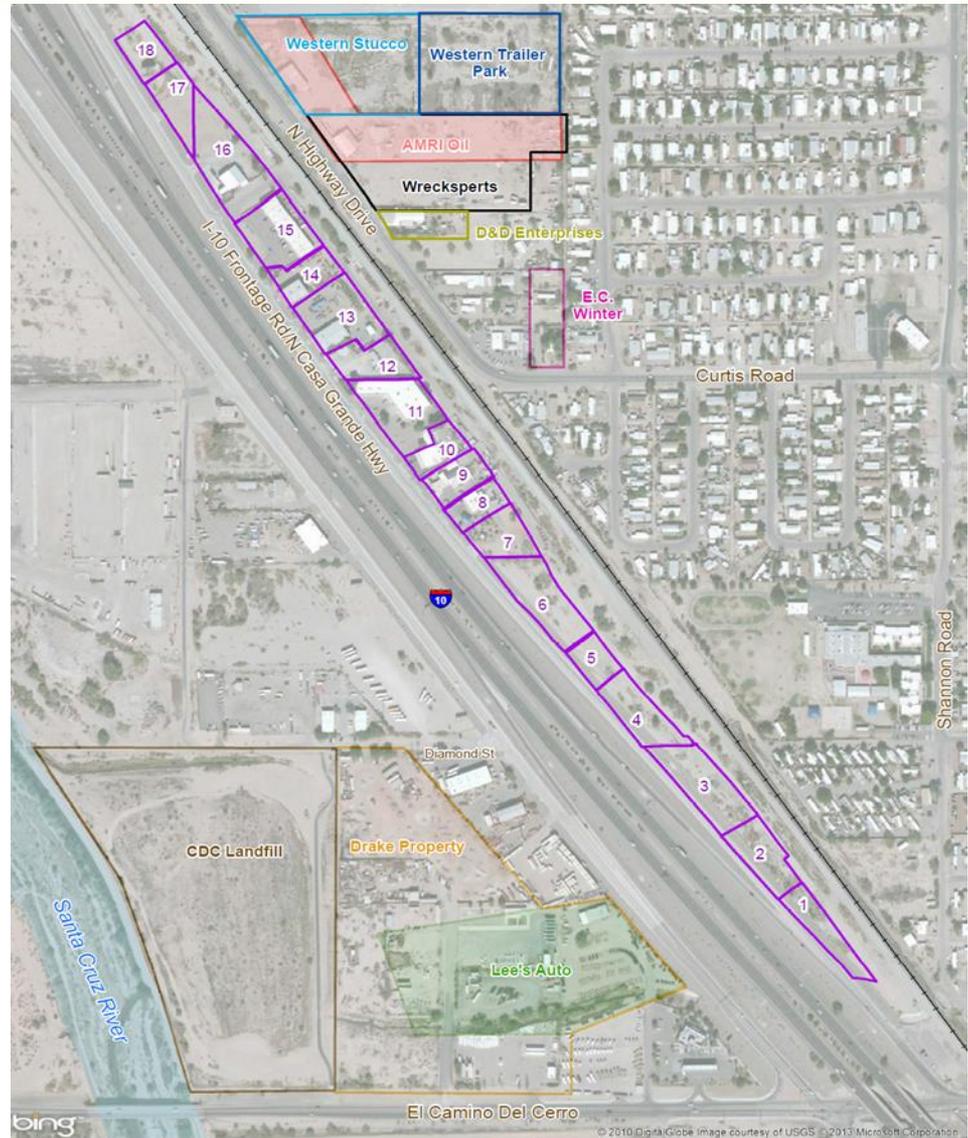
- Groundwater contamination discovered in 1983 during investigation of the CDC Landfill;
- Contamination discovered in Tucson Water Production well Z-006A in 1993 and Metro Water S-Shannon well in 1994;
- Between 1983 and 2009, ADEQ and Pima County conducted investigations and Early Response Actions (ERAs) at several sites;
- Listed as a WQARF Site in 1995 - originally identified as two separate sites; Shannon Road-Rillito Creek (SRRC) and El Camino Del Cerro Landfill area (ECDC)-combined in 2004;



# Site Overview

## Investigations and ERAs

- 1989 Pima County added additional landfill cover added and surface re-graded to improve drainage;
- Pima County purchased and abandoned eight privately owned wells along I-10 corridor between 1989 and 1994;
- 1994 - Santa Cruz River bank protection installed to prevent infiltration from the river during periods of high surface water flow;
- Tucson Water well Z006A taken out of service in 1993. Metro Water S-Shannon Production Well - treatment system expanded in 2006 (original system installed in 1997);
- Former AMRI Oil Property- currently overlapping properties. Contaminants included PCE and TCE, lead, PCBs, PAHs and TPH. Soil removal action conducted in several phases between 1995 and 2007;
- E. C. Winter property- 2001 PCE and TCE contaminated soil removed, SVE system operated 2006-2008;
- Air Stripper treatment system installed at CDC Landfill in 2009.





- Passive soil-gas and geophysical survey conducted at multiple properties along I-10 corridor;
- 17 shallow, 14 medium and 6 deep zone groundwater monitoring wells installed in the regional aquifer;
- 27 groundwater sampling events conducted, mostly for Volatile Organic Contaminants (VOCs);
- VOCs detected above Aquifer Water Quality Standards (AWQSSs) include PCE, TCE, cis-1,2-DCE and vinyl chloride;
- Multiple ERAs have removed contamination east of I-10;
- The S-Shannon Metro Water production well continues to contain the downgradient extent of the groundwater plume and a distribution Treatment System is in place.
- **For Additional Historical Details and a Site Map:**  
<http://www.azdeq.gov/environ/waste/sps/download/tucson/shannon.pdf>

- Draft RI that will include Draft Remedial Objectives (ROs) scheduled for completion January 2014;
- Public comment this winter (March 2014) – CAB meeting;
- Potential for Final RI to be issued spring 2014;
- FS start dependent on WQARF funding – Potential for completion by 2015.
- Any Final Remedy likely to incorporate the Granular Activated Carbon Treatment of the S-Shannon Production Well water, in addition to containment and treatment actions at CDC Landfill.



Shannon Road/El Camino del Cerro  
WQARF Site

**QUESTIONS?**

# Update on the South Shannon Treatment System

Michael Block - Metropolitan Domestic Water Improvement District

November 21, 2013

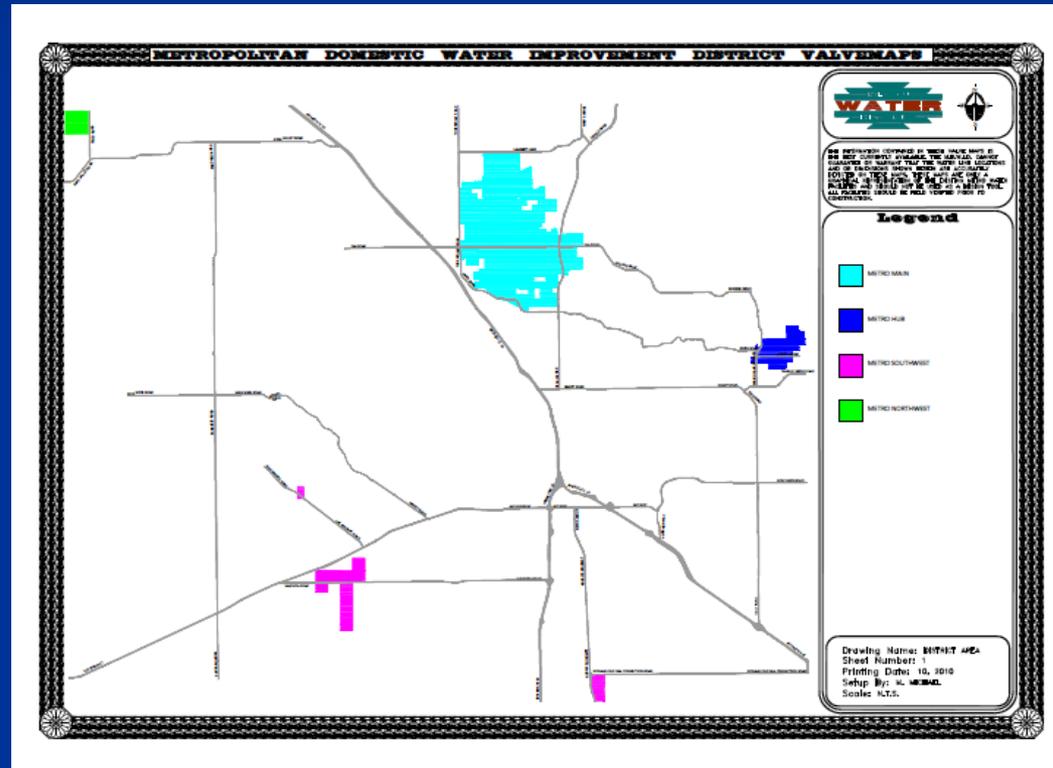


# Outline

- Introduction
- South Shannon Well
- VOC Treatment Added
- VOCs Increase
- New Treatment System
- Operational Costs
- Conclusions

# Metropolitan Domestic Water Improvement District

- Located in Tucson, Arizona
- Formation as a public entity in 1992
- 26 square miles – 5 service areas
- 50,000 combined population



# South Shannon Well

- Historical production capacity of 650 gpm
- Well is 35 years old
- Trace levels of PCE were first detected at the South Shannon Well in 1993
- As PCE levels increased, MDWID decreased the pumping rate from the well



# South Shannon during the 1990s

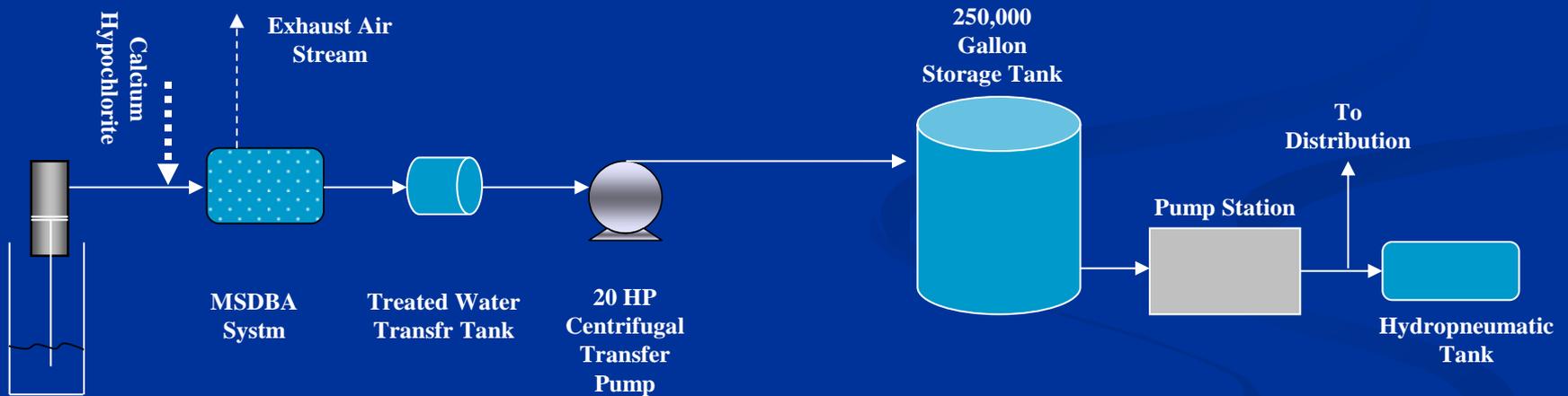
- In 1996, the well was taken out of service
- The primary contaminant, PCE, has more than doubled since startup of the initial treatment system in 1997
- Raw water VOC concentrations steadily increase from 1993 to 2003

# VOC Treatment Added

- In 1997, the well was returned to service after MDWID constructed a treatment system utilizing multistage diffused bubble aeration (MSDBA) technology



# MSDBA Process Schematic



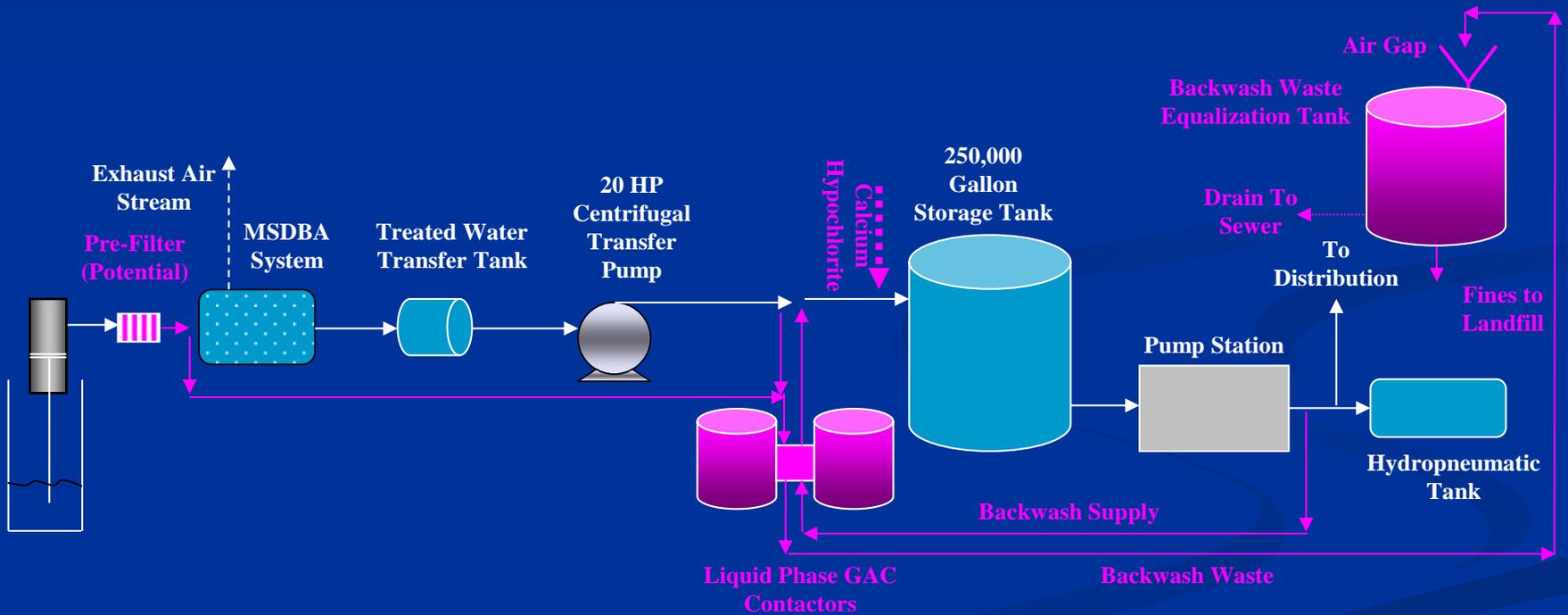
# VOCs Increase

- In 1999, the MSDBA system was still able to achieve over 90% TCE and PCE removal; however, treated water PCE levels over the 0.5 ppb detection limit were observed
- MDWID decreased the pumping rate to <350 gpm
- MDWID and ADEQ sign IRA in 2001
- In 2003, potential treatment improvements to enhance VOC removal efficiencies at the site were evaluated

# New Treatment System

- In 2004, ADEQ agreed to fund the installation of a granular activated carbon (GAC) adsorption system to replace the MSDBA system.
- GAC was preferred by ADEQ over air stripping because it complies with ADEQ's current policies to minimize or eliminate discharges to the environment.
- New treatment system operational on July 2006

# Addition of GAC Adsorption





GAC Contact Tank

This tank is used for the contact of water with granular activated carbon (GAC) to remove organic compounds and taste. The tank is equipped with a recirculation system to ensure adequate contact time. The GAC is contained in a bed within the tank and is periodically replaced. The tank is located in the GAC contact building.

LINED TANK - DO NOT WELD/BURN OR T

**METRO WATER DISTRICT**  
South Broward Water Facility  
Granular Activated Carbon Treatment System  
DEDICATION CEREMONY  
**ADEQ**  
FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

# Treatment System Operational Costs

	South Shannon						Total	Lbs of VOCs	O&M Cost	Cost
Year	Pumpage (ac-ft)	Electric Costs	Personnel Costs	Lab Costs	GAC Replacement	Misc.	O&M Cost	Removed	Lb of VOC	Per 1000 Gal
2013*	319.0	\$2,296.94	\$5,753.70	\$7,976.25	\$44,352.40	\$5,934.98	\$66,314.27	25.35	\$2,615.95	\$0.64
2012	667.7	\$4,212.00	\$10,880.73	\$16,322.50	\$73,692.82		\$105,108.05	43.9	\$2,394.26	\$0.48
2011	578.2	\$3,447.24	\$10,546.81	\$21,333.75	\$72,628.77		\$107,956.57	30.2	\$3,574.72	\$0.57
2010	683.9	\$3,944.46	\$10,949.17	\$24,130.90	\$73,500.88		\$112,525.41	40	\$2,813.14	\$0.50
2009	642.2	\$3,595.94	\$10,925.72	\$23,793.10	\$77,419.61	\$0.00	\$116,376.57	40.5	\$2,873.50	\$0.56
2008	687.4	\$4,648.16	\$15,745.74	\$22,039.50	\$47,061.43	\$0.00	\$90,182.23	54.3	\$1,660.81	\$0.40
2007	598.6	\$3,095.95	\$12,015.73	\$18,742.80	\$76,398.75	\$75.34	\$110,927.17	38	\$2,919.14	\$0.57
2006	137.3	\$1,100.26	\$3,948.11	\$7,560.00	\$0.00	\$2,393.08	\$15,138.75	16.8	\$901.12	\$0.34
2005	0	\$0.00	\$416.89	\$644.40		\$0.00	\$1,061.29	0	\$0.00	#DIV/0!
2004	51	\$1,757.58	\$2,750.63	\$4,336.40		\$0.00	\$8,895.61	4.1	\$2,169.66	\$0.54
2003	182.1	\$9,656.72	\$10,605.61	\$14,547.50		\$0.00	\$34,991.93	12.4	\$2,821.93	\$0.59
2002	217.8	\$8,890.05	\$15,640.23	\$11,108.20		\$0.00	\$35,856.28	12.9	\$2,779.56	\$0.51
2001	184.9	\$7,429.41	\$12,422.90	\$6,139.00		\$0.00	\$26,176.21	8.5	\$3,079.55	\$0.43
2000	426	\$10,353.02	\$13,889.88	\$3,740.00		\$0.00	\$28,408.90	18.4	\$1,543.96	\$0.20
1999	440									
1998	287									
1997	117									
1996	51									
1995	216									
1994	491									
1993	498									
1992	444									
TOTALS	5,784	\$62,130.79	\$130,738.15	\$174,438.05	\$420,702.26	\$2,468.42	\$793,604.97	320.0	\$2,953.13	\$0.42
* - Sum of quarters 1, 2 and 3										

# Conclusions

- MDWID and ADEQ have taken a proactive approach to managing PCE and TCE contamination
- Pounds of VOCs removed are greater using the GAC Treatment System
- Cost per volume for GAC is comparable to MSDBA
- MDWID striving to increase well pumpage and treatment to a duty cycle of 100 percent