Broadway-Pantano (BP) Water Quality Assurance Revolving Fund (WQARF) site Community Advisory Board (CAB) Meeting

March 5, 2018, 6:00 – 8:00 p.m. Wilmot-Murphy Library 530 N. Wilmot Rd. Tucson, AZ 85710

MINUTES

CAB Members Present: Janet Marcus (Co-Chair), Dr. Mark Brusseau, Aubrey McMullen, Cheri Bludau

CAB Members Absent: Bill Petroutson, Jackie Olson, Wanda Ryckman

ADEQ Staff Present: Wendy Flood, Remedial Projects Support Unit Manager and Tom Titus, Project Manager

<u>Members of Public Present</u>: Lori Ehman, City of Tucson; Jerry Torino, Mike LeBlanc, Richard Hoppie, Betsy Smullen, Jim Neesler, Jimmy Hackett

The meeting began at 6:03 p.m.

1. Call to Order/Introductions

Ms. Janet Marcus started the meeting and introductions were held.

2. Review of 11/30/2016 Meeting Minutes

Ms. Cheri Bludau noted that a name was listed twice on the attendee list. Ms. Bludau also recalled a discussion about the dross at the site, which she felt was not fully reflected in the minutes. Ms. Wendy Flood stated that she would review the tape and work with Ms. Bludau to revise the minutes if necessary. A copy will be sent to the CAB members once revised. Ms. Marcus moved to accept the minutes (with any revisions necessary) and Dr. Mark Brusseau seconded; Motion passed.

3. Feasibility Study Update Presentation and Discussion (see attached presentation)

Mr. Tom Titus introduced himself to the CAB, reviewed the WQARF process and the history of the Broadway-Pantano site. He explained the Feasibility Study (FS), which was approved in June 2017 and the Proposed Remedial Action Plan (PRAP), is in progress to be complete in the fall or summer of 2018. Groundwater monitoring is currently ongoing, and the next results should be available in April or May of 2018. A brief history of the sites was presented. Mr. Titus stated that the majority of contamination is in the deep vadose zone and the groundwater, and that remediation is focused on those two zones.

Mr. Titus stated that his presentation showed 2016 data as it was used in developing the FS; 2016 and 2017 monitoring results were similar. Mr. Titus clarified that he was only showing PCE data on the maps, as the TCE plume lies within the PCE plume, which are used to determine the nature and extent of the groundwater plume.

Mr. Titus covered the FS explaining three different remedies evaluated. 1) A reference remedy, which has an average cleanup duration and cost; 2) a less aggressive remedy, which is less costly, but takes longer to complete; and 3) a more aggressive remedy, which costs more, but cleans up the site more quickly. ADEQ decided the least expensive remedy was also the fastest and best option for remediation. Mr. Titus covered the FS remedy choices and cost.

a. Soil Vapor Extraction (SVE) at the South Landfill

Deep Vapor Monitoring at South and North Landfills

Mr. Titus described in detail the treatment option.

b. <u>In-situ Chemical Oxidation Groundwater Treatment (ISCO)</u>

Mr. Titus described in detail the treatment option and showed a diagram of the ISCO.

Ms. Bludau noted that groundwater levels have been rising because some production wells haven't been functioning, and that the groundwater is starting to reach contaminants in the soil. She asked if contamination had been removed in the soil where the groundwater levels have been rising. Mr. Titus replied that this is more of an issue at the South landfill, where SVE in the vadose zone has not been conducted. He also stated that ISCO will clean the groundwater as it is rising, and the goal is to get contaminants in the groundwater below regulatory thresholds.

c. Groundwater Extraction System

Mr. Titus described in detail the treatment options for the six wells.

Ms. Lori Ehman asked when ADEQ would be putting in a treatment system at the St. Joseph's Hospital well. Mr. Titus stated the well is not currently impacted, and the FS states a treatment system might be installed when it becomes impacted greater than 3.75 ug/L.

Mr. McMullen asked if injecting the treated water was better than just using it. Mr. Titus believed that the hospital did that in the past and could be an option. He also reiterated that the FS was in a concept stage.

Ms. Marcus commented when the last system ran, it was discovered some of the plume was missed, and asked how that is being addressed. Mr. Titus stated that groundwater modeling helped choose well locations to maximize cleanup. Ms. Marcus also asked if any of the treatment wells would pull the southern contaminant plume north. Mr. Titus stated that the pull from ISCO wells is not great and shouldn't be a problem, but will be monitored and adjusted.

A question was asked about the possibility of damages to houses by pumping water out of and into the ground. Mr. Titus stated that the groundwater is deep, and pumping rates are not high enough to cause subsidence. Related rates would be 400 gallons per minute (gpm) to 600 gpm at the most. In comparison most city wells pumped at 1000-2000 gpm. Mr. Titus stated the depth of injection is deep, at a relatively low pressure and low volume, both of which would be monitored. Ms. Bludau noted no problems or complaints had been noted at the hospital when similar treatment was done in the past.

A question was asked if the public should put filters on their spigots. Both Ms. Flood and Mr. Titus replied that city drinking water wells are not impacted, the city complies with all state and federal drinking standards. Ms. Marcus stated that the CAB had been told in the past that public wells from the cleanup areas are closed and no longer in use.

d. Dross Area, Fence Installation and Warning Signs

Mr. Titus described in detail the treatment options.

Ms. Bludau commented her concern is wind blowing if it hasn't been covered up. Mr. Titus stated that the dross does need to be covered.

e. <u>Declaration of Environmental Use Restrictions (DEUR)</u>

Mr. Titus described in detail the treatment option.

Ms. Bludau inquired about holding the landowner accountable to their obligations. Mr. Titus presented an explanation and definition of a Declaration of Environmental Use Restriction (DEUR) and stated it's a legal document. Mr. Titus stated he'd make a site visit to check it out.

The next steps related to the PRAP and the comment period were discussed. There is a 90 day comment period with the PRAP in which a CAB meeting would be scheduled.

4.*Call to the Public

A member of the public asked how the WQARF program is funded. Ms. Flood stated that the WQARF program is funded by a variety of taxes, fees and party settlements.

5. Future Meeting and Agenda Discussion

Ms. Flood stated the next meeting would be during the comment period for the PRAP. Once Mr. Titus has an idea of when the PRAP will be ready, Ms. Flood will reach out to schedule a meeting.

Ms. Flood asked the CAB to consider how they wanted to present comments on the PRAP, whether individually, or as a CAB. As a CAB, there must a quorum and a vote on how the comments are submitted. CAB members recalled that they had previously submitted comments as a group, therefore it will be on the agenda as such.

Ms. Flood asked to add membership discussion to the agenda and would review to determine those that have not attended. She reminded the CAB that applications can be taken any time for new members which can be discussed at the next meeting, as well as CAB Co-chair review.

6. Adjournment

Ms. Bludau motioned to adjourn at 7:25 p.m.

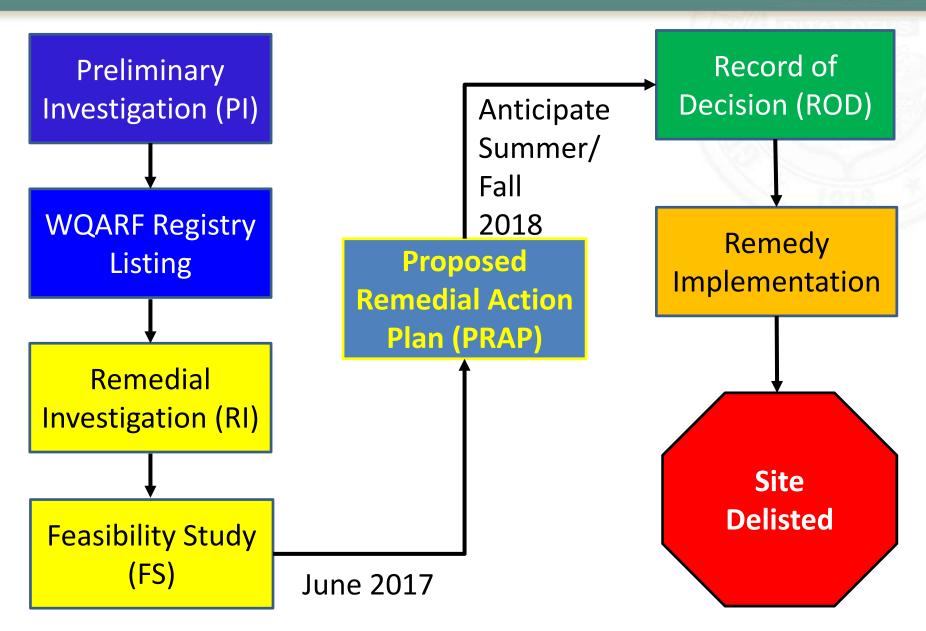
Broadway Pantano WQARF Site Community Advisory Board Meeting March 5, 2018

Feasibility Study Update



WQARF Process





Site Activity Update

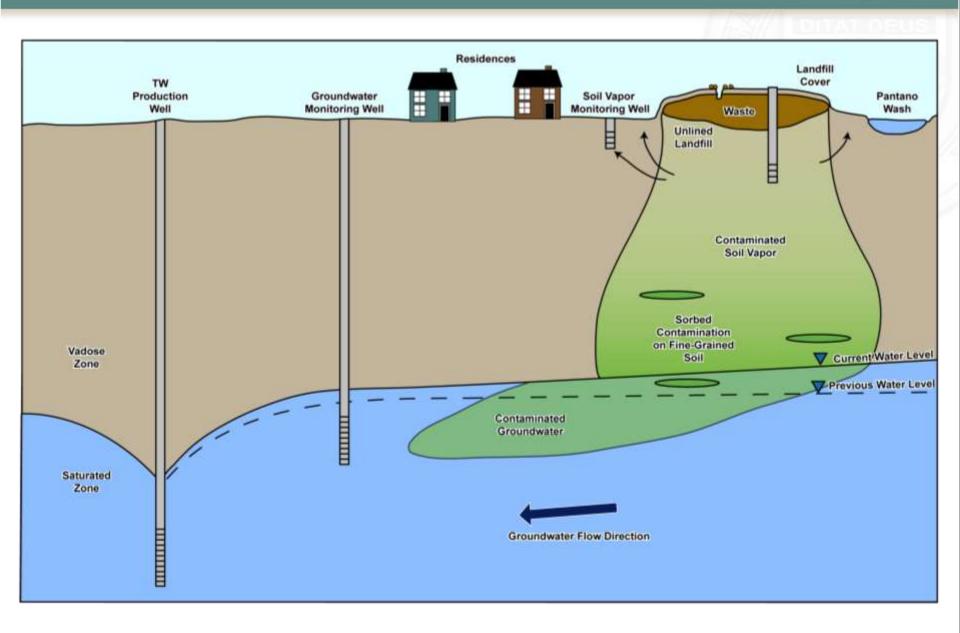




- Recent Activities
 - Feasibility StudyApproved (June 2017)
- Current Activities
 - Proposed Remedial Action Plan (PRAP)
 - GroundwaterMonitoring
 - Dross AreaInspection

Conceptual Site Model





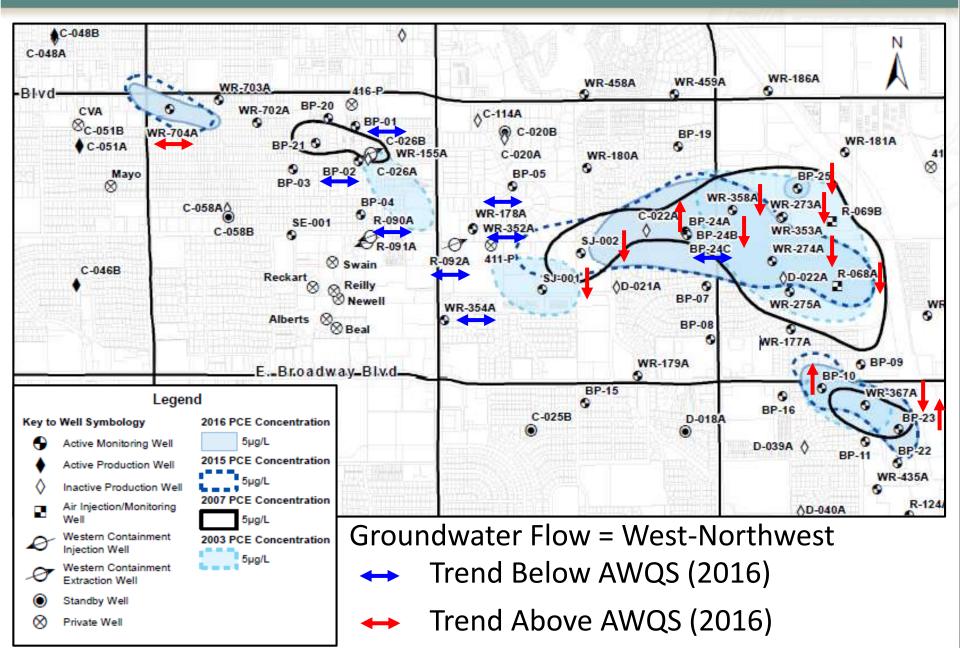
Current Conditions (Spring 2016)



- Contamination Source
 - Broadway North Landfill (BNL)
 - Broadway South Landfill (BSL)
- Impacted Media
 - Soil, Soil Vapor, & Groundwater
- Compounds of Concern
 - Tetrachoroethene (PCE) = Non-Detect to 104 micrograms per liter [ug/L])
 - Trichloroethene (TCE) = (Non-Detect to 30 ug/L)
 - Dross (Arsenic, Chromium, & Lead)

PCE Groundwater Concentrations





FS – Proposed Remedial Action



Remedial Component	Duration (Years)	Cost
BSL = Soil Vapor Extraction (SVE)	1	\$0.6M
BSL & BNL = Deep Soil Vapor Performance Monitoring	20	\$1.7M
BNL = In-Situ Chemical Oxidation	7	\$2.1M
Groundwater Extraction	30	\$9.8M
Monitored Natural Attenuation	30	\$4.9M
Dross Area = Asphalt Cap*	30+	\$0.3M
BSL & BNL = Fence & Signage*	30+	\$0.1M
Declaration of Environmental Use Restriction (DEUR)	30+	\$0.0M
TOTAL	30	\$19.4M

Cost with 3% Inflation = \$27.8M

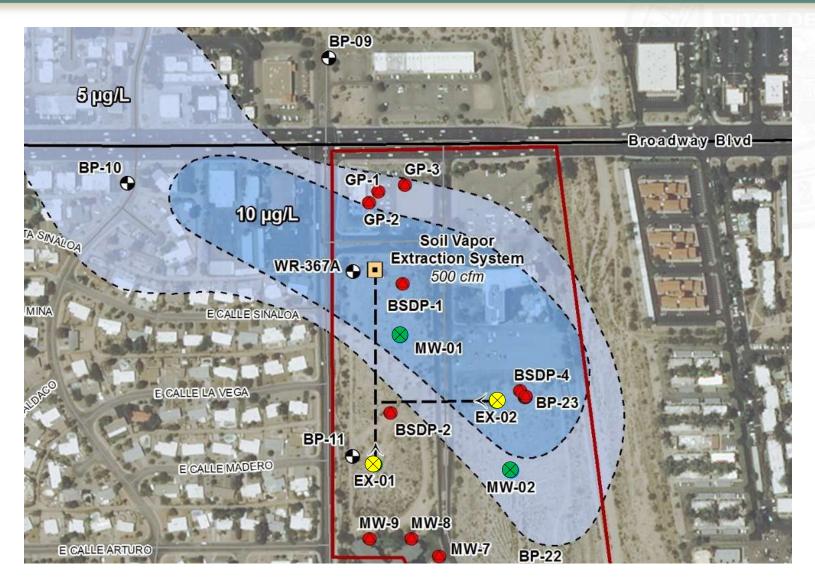
FS - Proposed Remedial Action



- Contingency (Wellhead Treatment)
 - 411-P (St Joe Hospital Well)
 - Duration = 8 Years (2027 to 2035)
 - Cost = Included in \$19.4M

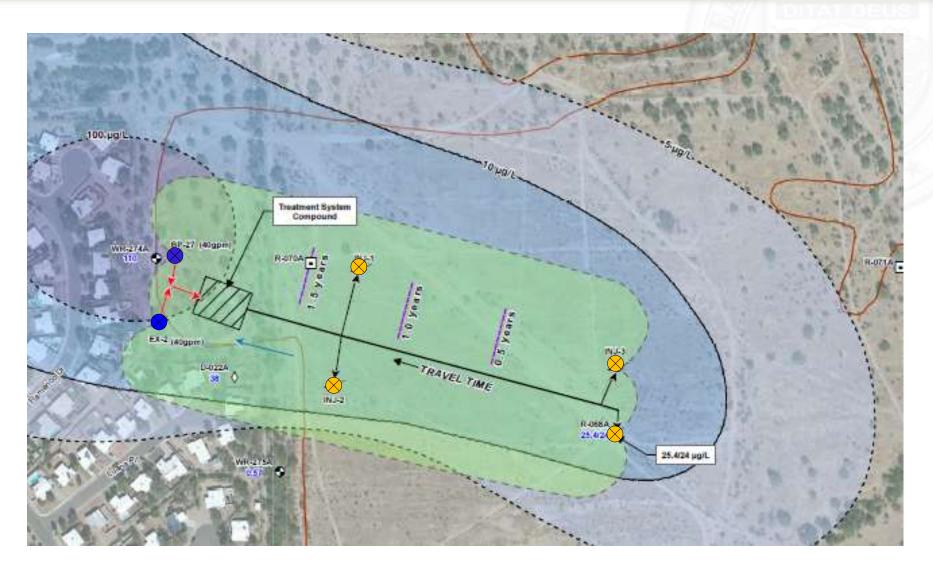
BSL – SVE System Layout





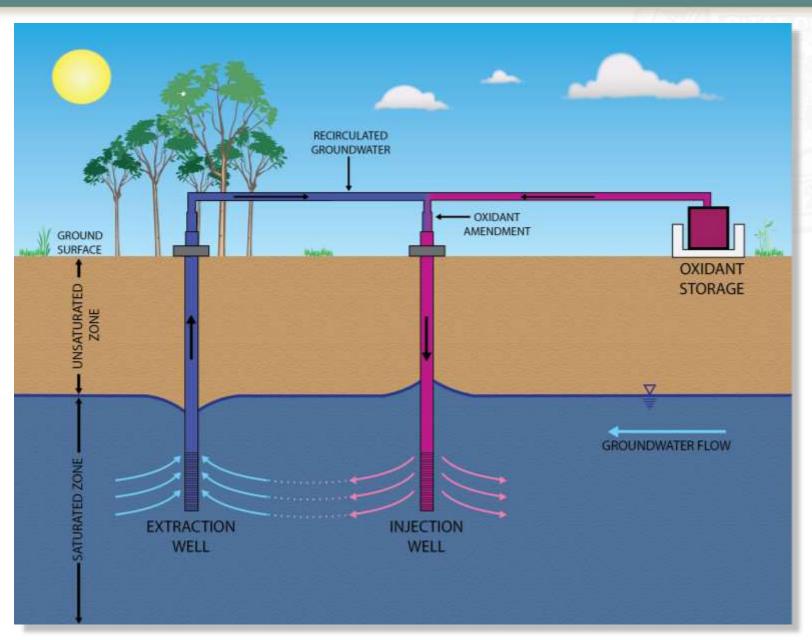
BNL - ISCO System Layout





ISCO – Conceptual Design





Groundwater Extraction





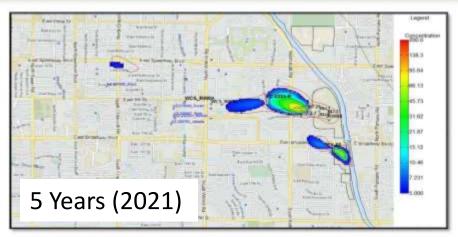
- Injection Well
- Private Well (WHT)
- **Extraction Well Pipeline**

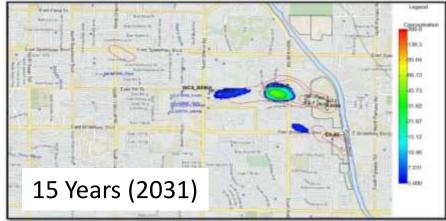
- Extraction Well
- WCS

Injection Well Pipeline

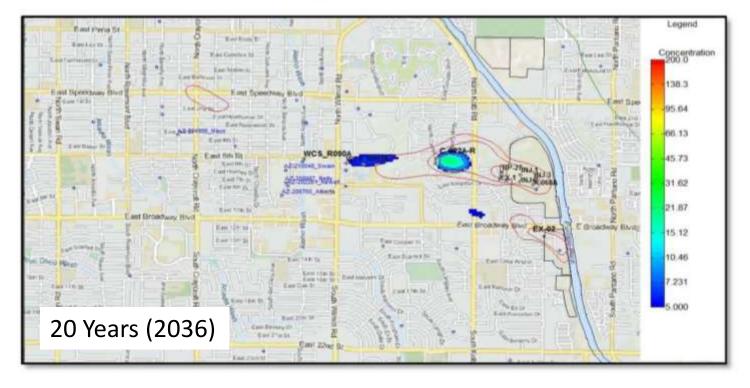
Groundwater Extraction





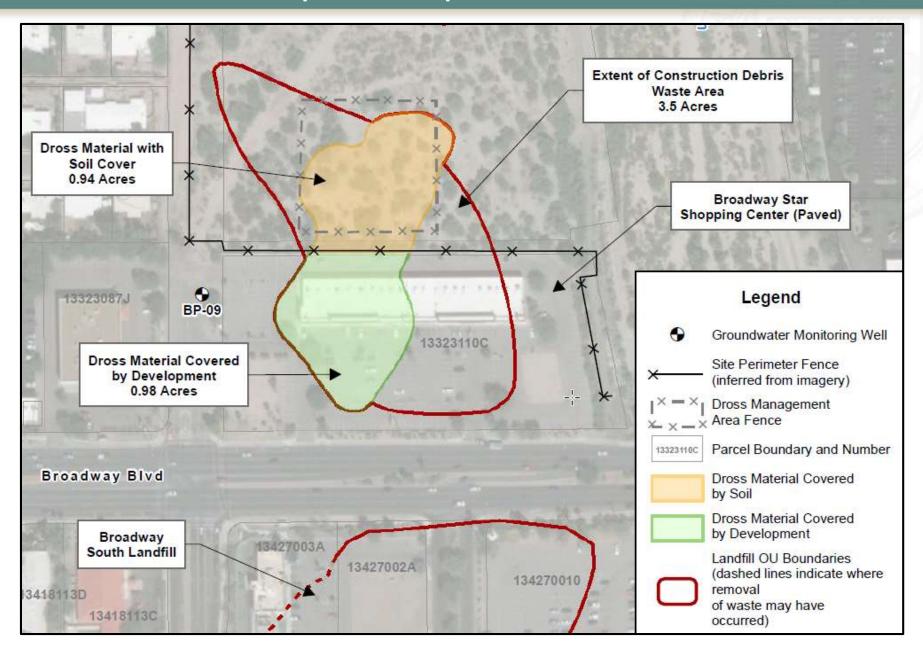


Concentrations are presented in micrograms per liter



Dross Area – Asphalt Cap





Dross Area – Asphalt Cap





DEUR



- ADEQ Oversee Capital Improvements
 - Asphalt Cap for Dross Area
 - Fence & Signage for Landfill Perimeters
- Landowner Oversee Operation & Maintenance
 - Annual Inspection
 - Cap, Fence, & Signage Maintenance

Current/Future Activities



- 2018 Groundwater Monitoring Results Available in April/May 2018
- Groundwater Monitoring and Dross Area Inspection Program will Continue
- Proposed Remedial Action Plan (PRAP)
 Completion Anticipated in Summer/Fall 2018.

Questions/Contact Information



Questions?

Contact Information:

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