Final Meeting Minutes

July 18, 2018
The Unified Community Advisory Board
Meeting 5:45 – 8:00 p.m.

The following list of attendees is annotated, where possible, to indicate any affiliations.

Yolanda Herrera, UCAB Community Co-Chair
Margie Mortimer, UCAB
Marti Lindsey- Excused Absence
Bill R. Jeffers, UCAB
Donald Matthieu, UCAB
Janice Crist-Excused Absence
Mary Frances Bruckmeier, UCAB
Christine Krikliwy, UCAB
Henry Vega Sr., UCAB
Carole Maluf- Excused Absence
Jenn Williams, AECOM
Albert Avila, Tucson Water
Chad Lapora, Tucson Water
Jeff Biggs, Tucson Water
Tim Thomure, Tucson Water
Fernando Molina, Tucson Water
Marie Light, Pima County
Fred Tillman, USGS
George Warner, USAF AFCEC
Rene Hefner, EGC, Inc.
Don Ficklen, AFCEC
Mary Kuchar, Ward 5-CM fimbres
Chris Ortiz Y Pino, Ward 6
William Ellett, ADEQ
Matt Narter, ADEQ
Glenn Hoeger, Carollo
Mark Gardiner, APTIM
Stella Vidal, Las Aquas
Geraldine Gonzales, Las Aquas
Eder Delgadillo, TAA
Eric Roudebusch, TAA
Aurelia Otero, Community
Cecilia Campillo, Community
Cyrina King, Community
Ignacio Gomez, Community
Jim Austin, Community
Monica Otero, Community
Robert S. Jaramillo, Community
Rosie Cleary, Community Member
Rosie Hernandez
Sunaura Taylor, Community (Signed in by Cyrina King)
Theresa A Throssell, Community Member
Bruce Engelbert, Skeo Solutions
Emily Chi, Skeo Solutions
Cecilia Vindiola, Midvale N.A.
Daniel Sullivan, U of A
Denise Moreno, U A
Denise Moreno, U A
Chris Perkovac, Hargis & Assoc.
David Iacovone, AGEISS/AFCEC
Instruments
Robert Monbidor, ARCADIS/Texas Instruments
Carmen Izquierdo, Community

WELCOME/INTRODUCTIONS/GROUND RULES/HOUSEKEEPING

Community co-chair Yolanda Herrera opened the meeting requesting cell phones be turned off or put on vibrate; it was also requested that attendees not use their cell phones to record the meeting or take photographs of the volunteer UCAB members, everything that occurs in the meeting is transcribed verbatim which everyone who requested will receive a copy of. It is very important to please remember to sign in and provide all pertinent information if you would like to receive the UCAB mailer. If you have a question for one of the presenters, please remember to state your name and affiliation so that you can be identified in the minutes. Please keep your questions to a minimum and only as they pertain to that presentation; please remember to be
respective and do not use foul language. For anyone wishing to make a statement, please wait until the end of the meeting during the Call to Audience.

**EPA Update by Mary Aycock**

**Mary Aycock:** Ms. Aycock, the Remedial Project Manager from Region 9 EPA, introduced herself and discussed her availability to those that have questions after the end of the meeting. Ms. Aycock also discussed the issuance of a draft version of the Fact Sheet that is prepared to mail out, once approval is obtained internally and from the Unified Community Advisory Board. The Fact Sheet will be translated into Spanish and sent out to approximately 10,000 people on the mailing list. The mailing is an incorporation of the zip codes that are on and around the plume and that are within a couple of miles of the site. If you are not already on our mailing list, please do what Ms. Herrera has asked. Make sure that your name and mailing address are printed clearly on the sign in sheet, so that Ms. Williams can get your information added to the mailing list. The Fact Sheet won’t be presented here tonight, but you can take a look at it and read it on your own time. If you have any questions, please come and see me after the meeting. My email address and phone number are also listed on the sheet itself. The other person that will be working with me is Viola Cooper, who was introduced to the community at the last UCAB meeting. She was called to the East Coast for another community meeting and was not able to be here tonight.

The community has been asking the EPA to send out a more simplified version of the description of the site as well as some history behind the site. The Fact Sheet gives information on the site background, an artist rendition of the plume and the Tucson Airport Remediation Plant process, which you will get an update on tonight. The Fact Sheet map shows the Plume in 1987 and the significant decrease that has occurred to date with three small segments remaining, that each responsible party is controlling. The three responsible parties are Tucson Water, Tucson International Airport Authority, and Air Force Plant 44. Of the three, the Tucson Airport Remediation Plant is the only treatment system used to produce drinking water. All the water that is treated from that facility is required to meet primary and secondary drinking water standards. This water does not go directly into community faucets, but into a reservoir that is located near I-19 and I-10. The Tucson Airport Remediation Plant water feeds about 6% of the City of Tucson. It is delivered to the downtown area and not to any parts of south Tucson.

Another question that the EPA is getting in regards to Mr. Gerald Hiatt., a toxicologist with the EPA for 25 years has made the decision to retire. Before his retirement, Mr. Hiatt helped write an article regarding three vapor intrusion studies done at the site; the studies were in the Three Hangars, on Corona Road and the third was done at the Elvira Lot and this information can all be found on the Fact Sheet. Review of the test results showed that there was no vapor intrusion in the form of Trichloroethylene or any other associated compounds occurring in these areas. If anyone would like to see copies of these reports, they can be emailed to you or you can visit the EPA website where they will be posted.

The EPA will also be doing a Five-Year Review, where an independent agency, in this case, the Corps of Engineers, is required to go back and look at current remedies to determine their effectiveness. Mr. Beckert, who has worked with the Corps of Engineers for about 30 years and is an expert on the Arizona Geology, will be conducting the review. If anyone in the community has comments or would like to be interviewed regarding the five-year review process, they may contact Ms. Aycock or Ms. Cooper.
The EPA has information about the repositories; any reports produced can be found at the Valencia Library. We have also been involved in The Technical Assistance Services for Communities Grant to identify the needs of the community and that information is included in the Fact Sheet.

**Question from Margie Mortimer:** It is in Barrio Nopal not Elvira NA.

Attendee introductions were made.

**Yolanda Herrera:** Several UCAB members called in notification that they would be unable to attend tonight’s meeting; the members with excused absences are Carole Maluf, Marti Lindsey and Janice Crist.

**Statement from Henry Vega:** I would like to make a correction regarding one of the attendees here tonight, Mr. Nacho Gomez is a former co-chair. Thank you, Mr. Gomez.

**MINUTES FROM April 2018 MEETINGS**

**Christine Krikliwy:** My name is not on the minutes and I would like to add my name back on; I guess it was an excused absence, because I was out of the country.

**Question from Margie Mortimer:** Is there a way that we can get out package earlier, because I never received mine.

**Yolanda Herrera:** Ms. Mortimer, that is not a minute issue, we are currently discussing any corrections to the minutes. However, I do have a question for one of the audience members, Theresa; when you were addressing the UCAB did you mean Odom, or Authom?

**Theresa Throssell:** I meant Odom.

**Yolanda Herrera:** We had a question from Carole Maluf regarding the church being connected to Tucson Water; Carole responded and was then followed by another explanation and I believe that came from you?

**Marie Light:** The notes that I have today have an odd number of pages so I’m not able to review it well enough. I did have some other comments regarding pages 13 and 14, which I don’t have. Is it possible for me to submit comments via email?

**Rene Hefner:** Yes, you can submit comments to me, I believe you already have my email. If you check your Word document, there should be an attachment of the document for those particular notes and you can make the adjustments on that document and send it back to me.

**Question from Marie Light:** Is it possible for us to get the packages earlier?

**Rene Hefner:** Yes, that’s something we’re working on.

**Yolanda Herrera:** So, we can’t make a motion to accept the minutes, even with the changes until we get all the changes, is that correct?
Rene Hefner: What we can do is make the changes and resubmit those at the next meeting and bring them up for a vote.

Yolanda Herrera: So, we’ll have two draft minutes to review at the next meeting?

Rene Hefner: Correct. What we can do is, once Ms. Light submits her changes, I can highlight those changes so that everyone will be able to quickly denote and verify those changes have occurred instead of having to go through the whole packet to find any corrections. (This did not happen, after several attempts to contact Marie Light, she did not provide updates as requested in the meeting.)

Air Force Plant 44 Performance Based Contract Update by John Kim

Groundwater Treatment Plant Update by John Kim

John Kim: Mr. Kim, from AECOM, gave an update on the Southwest Performance Based Remediation contract and In-Situ work that is being done for Air Force Plant 44; this contract is a seven-year contract due to end in July 2020. Air Force Plant 44 runs along Hermans and Nogales Roads. The plume divides on Los Reales Road south and the other plume is on Tucson International Airport. A lot of the groundwater treatment plant area is not being used, for example, the air stripping facility, which used to be the old system is currently not being used. When the groundwater treatment plant was initially started in 1987 it was an air stripping unit, designed strictly to address volatile organic compounds, mainly Trichloroethylene that was detected to treat the groundwater. The groundwater went into the strippers and they volatilize the compounds where the gas goes into a system that treats the gases before it is discharged to the atmosphere. The rest of the water is recharged and sampling is performed to verify that Trichloroethylene has been removed. The old system consisted of primary and secondary strippers and pressure filters that treated the water before it got discharged into the tank for recharge. Before we were treating only for Trichloroethylene, but 1,4-Dioxane was discovered in 2002 and we changed to the Advanced Oxidation Plant. In our case, we use Hydrogen Peroxide and Ozone for treatments. What’s great about the Advanced Oxidation process is that it treats Trichloroethylene and 1,4-Dioxane, but there are no residuals and no other reactions, so no other treatment needs to be done.

As of April 1987, the treatment system has treated over 31.5 billion gallons of water and the Air Force has removed over 25.1 thousand pounds of volatile organic compounds, mainly Trichloroethylene in groundwater. At the startup of the Advanced Oxidation Plant, back in September 2009 the Air Force has removed over 92 pounds of 1,4-Dioxane.

Regarding our monthly performance, shown from July 2016 through June 2018; there is a 80% line that is considered the successful operation time for the groundwater treatment plant. Therefore, we view successful running of the treatment plant if it exceeds 80% overall run time per month. There were several months in which we fell well below the 80% due to issues with the Hydrogen Peroxide, which caused the system to be down for a period of time. In the previous quarter we fell below 80% line due to major issues with the Oxygen generator. The Oxygen generator is what we use to produce the Ozone; if we can’t generate Oxygen we can’t produce Ozone to perform effective treatment of the groundwater. This system has been operating since 2009, it operates 365 days, 24 hours per day, which means it’s getting old.
After developing a corrective action plan with collaboration from the Air Force, the EPA and Arizona Department of Environmental Quality, it was agreed that a brand-new Oxygen generator needed to be put in place; the new system was installed February 22, 2018. With the new generator in place, the system has been running at greater than 96% this last quarter. The system is air-conditioned, designed to handle the Arizona heat, and has less moving parts, which makes it a stronger system. Another thing that was completed was to improve the system was to bypass the pressure filters, the pressure filters were needed when we had the air stripping system; however, they are not needed for the Advanced Oxidation Plant. When the initial Advanced Oxidation Plant redesign was completed, they left the water connection through the pressure filters. The pressure filters are operated by a series of six pumps and, if any one of those pumps fail it causes a problem with the whole system that could require shut down. With by-pass the water now comes out of the Advanced Oxidation Plant and goes straight into the tank bypassing the filters and the pumps.

In terms of future corrective action, we determined that there are other parts of the system that are getting old such as the Ozone generator, some of the recharge pumps, and the control systems. We are currently working with the Air Force to get additional funding so that we can get the system fully updated.

**TIAA Update and TIA Tour in October by Eric Roudebush**

**Eric Roudebush:** Mr. Roudebush is with the Tucson International Airport Authority and serves as the Project Coordinator for the Airport property component of the Tucson International Superfund Site. Mr. Roudebush gave a brief update on the airport property, in regard to the two active remedies in place; one addresses the shallow groundwater zone which is using groundwater extraction and treatment system to remediate the groundwater. This is a pump and treat system similar to what’s being used at the Tucson Airport Remediation Plant. The second remedy focuses on soils and is using the soil-vapor extraction system, which is often referred to as “SVE”, which involves extracting vapors from the soil and then treating that vapor for contaminants. During the second quarter of 2018, the groundwater extraction treatment system removed approximately 3.2 pounds of Trichloroethylene from the water pumped per month and the approximate flow rate for the groundwater treatment system is 72 gallons per minute. For the soil-vapor extraction system during the second quarter of 2018, the average monthly removal was 0.5 pounds of Trichloroethylene per month and the flow rate was approximately 336 cubic feet per minute. The diagram included in the handout represents the total mass in pounds of Trichloroethylene removed from August 2007 to August of 2017; the redline represents the mass of Trichloroethylene that has been removed from the groundwater treatment system to date, which is approximately 2,000 pounds removed. The blue line represents the mass of Trichloroethylene removed from the soil vapor extraction system, which is approximately 6,500 pounds removed. The gold line is the sum of those two extraction systems, which is approximately 8,600 pounds of Trichloroethylene removed.

**Question from Cecilia Campillo: How is the Three Hanger area coming along in regard to DNAPL?**

**Eric Roudebush:** There is no DNAPL at the Three Hangars, Dr. Mark Brousseau from the University of Arizona did a lot of research with his team looking for DNAPL and they discovered no DNAPL.
**Question from Cecilia Campillo:** (Inaudible)

**Eric Roudebush:** I can provide you with a copy of Dr. Brousseau’s study.

**Statement from Cecilia Campillo:** DNAPL doesn’t just disappear.

**Eric Roudebush:** That’s correct, but was DNAPL present?

**Statement from Cecilia Campillo:** We were told it was several years ago and we need that report because that’s a very serious matter.

**Eric Roudebush:** Perhaps you could help me out by providing the source of the information that you have.

**Question from Cecilia Campillo:** Can you go back to the minutes from 1991 to 1994?

**Yolanda Herrera:** UCAB wasn’t around in 1993 or 1994. Mr. Roudebush if you can look into this issue or bring in the information that Ms. Campillo is looking for and then present it at the October meeting? Would that be satisfactory Ms. Campillo?

**Statement from Cecilia Campillo:** I’m not looking for it, the public needs to know what’s going on.

**Eric Roudebush:** Yes, I can bring information and data that supports what we found and present it at the next UCAB meeting in October.

**Mary Aycock:** It would probably be best to have the information in the form of a presentation with a map as well as some key wells and concentrations that you’re getting in and around the Three Hangars. Can you also give us a definition of DNAPL for the folks that don’t know what it is?

**Eric Roudebush:** Yes, I can go back and look at Dr. Brousseau’s report and try to condense it. DNAPL is an acronym that stands for ‘Dense Non-Aqueous Phase Liquid’

**Question from community member:** Could you please describe what DNAPL is?

**Eric Roudebush:** If you had water in the subsurface, that would be aqueous-phase liquid, it’s like water. But a dense non-aqueous phase liquid is not water, but in the case of Superfund sites as in here at Tucson, it would be Trichloroethylene, so it would be the contamination. It’s not water, it’s basically pure liquid.

**Question from Audience (No Name Provided):** question inaudible:

**Eric Roudebush:** You are correct that there is a portion of the Superfund site at the airport that has been defined in the governing documents as technically impracticable to clean-up, which would be called the “TI Zone”. The obligations that the airport and the settling parties are under for the technically impracticable zone is to contain the contamination within that zone. That’s what our treatment system was designed to do and that’s what we’ve been doing.

**Cecilia Campillo:** (Inaudible)
Yolanda Herrera: Let me remind everyone that when they are asking a question, please state your name before you ask your question. Thank you.

Henry Vega, Sr.: Since 1995 when UCAB started, we were told that through the stratosphere down to the lowest water-point, dense non-aqueous phase liquid is supposed to be a pocket in our ground. If any Trichloroethylene would sit there on that pocket it would not move for years, so some of the questions that these ladies asked they go back after 1995. There are a few members that have been here since 1995. I myself was asked to join the UCAB and we had Gary Cooper from San Francisco, we had Dennis Scott that was with the EPA back then.

Yolanda Herrera: Mr. Vega, I’m going to ask that you allow the meeting to move on from this topic. Mr., Roudebush has agreed to represent with more information regarding this issue in October along with some graphs.

Henry Vega, Sr.: There are people here that need to know the history and I’ve got a lot of history that I want to give to these people. There’s going to be times when someone’s going to have to take more time in the meeting to explain the history. The problem started in the 1920s and 1930s. Have we been told the truth?

Question from Cecilia Campillo: I understand that DNAPL is immovable unless there’s an earthquake, my question is can DNAPL leach? If you could include a response to that question in your presentation in October.

Eric Roudebush: Yes, I can do that.

Question from Geraldine Gonzales: We have had mild earthquakes, could that cause the DNAPL to move?

Cecilia Campillo: When the word fracking was mentioned before, the community rose up and said no to fracking. We were very grateful for that, but that could have been pretty dangerous. And as far as the DNAPL, everything possible.

Eric Roudebush: We haven’t done the environmental fracking on the airport property. One thing that I’m hearing here is not necessarily airport property specific, but it sounds like there are questions on contaminant transport and I don’t know if there’s someone within the EPA that could provide a presentation at a future UCAB meeting and give a broad explanation of how contamination moves through the aquifer.

Mary Aycock: I’m sure that we can talk to some of our contractors and some of the people here in the audience tonight and see if someone would be willing to do that as another topic to put on the next UCAB agenda. I think that some good points are being raised and aside from earthquakes and fracking, we are actually doing projects at Texas Instruments, West Cap and now the Air National Guard may be doing some injections as well. They are doing something similar to what Mr. Kim did, but they’re not using thy Hydrofracking, they’re injecting Potassium Permanganate into the areas that have Trichloroethylene that’s tied up in clay.

If you have solvent sitting in a clay, it’s not going anywhere. It doesn’t matter if you call it dense non-aqueous phase liquid or not, there are areas where there are pockets of Trichloroethylene sitting there. At least at Texas Instruments, West Cap and Air National Guard, they are going to
have monitoring wells where they will perform injections of Potassium Permanganate that will drip down into these clays and reacts with the Trichloroethylene knocks it out.

One of the things I’m proposing for January is a technical exchange where we can say, what other alternative technologies besides just pumping and treating are out there that can work in these clays. We’ll be asking all the folks here, normal members and also The University of Arizona and maybe some specialized contractors to see what technologies that are out there are working in the desert.

Can we use them at airport property or at Air Force Plant 44, are there places that we can actually use these to speed up the cleaning time? The Hydrofracking that Mr. Kim was using was only going out maybe 10 feet from a well and what it did was it squirted the chemicals out so that there was a wider distribution of those chemicals, not in deep zones but in areas where they could go out into the gravel and react with the Trichloroethylene. What they did at Air Force Plant 44 was a good thing, it was a way to get the chemical out into the aquifer to decrease the Trichloroethylene; they were able to knock down the concentrations of Trichloroethylene by 50%. If we can do that with all these other parts at the site, we could reduce the clean-up time by a lot of years. We met with Mr. Roudebush this week to talk about the technically impracticable zone and what can be done over there, so we’re on board with you guys.

**Statement from Robert Jaramillo:** I know something that could be affecting earth movement, the instrumentation at Raytheon possibly has that affect because of the blasts at the mines... (Inaudible)

**Statement from community member:** (Inaudible)

**Mary Aycock:** It’s a misnomer to call it fracking, it’s not like when you’re doing natural gas fracking, it is a pressure-injection, but it’s not fracking. With fracking you’re going into the geology and disturbing the geology and with Hydrofracturing it’s more of a power injection of bioremediation fuel. There are no plans to do any of this at Texas Instruments, Air National Guard or West Cap, we’re just doing injections into the monitoring wells. I see your point, and if there’s a better way than Hydrofracturing then we will take that into consideration.

**John Kim:** The whole idea behind the Hydrofracturing that we did was because there was clay that the containate was stuck inside of; injecting amendments to treat the contaminants is only effective if it comes in contact with the contaminant. When we injected the high-pressure water, it created small fissures that allowed the amendments to get through the clays and attack the contaminants. This is a very good process in regard to decreasing the contaminant; don’t confuse Hydrofracturing with the other industry, it’s completely different.

**Statement from Cecilia Campillo:** I know that you’ve been doing a lot of work and we can question sometimes some of the work you’ve done, but this is, unfortunately, ignorance of the “regular folk”, like me. If you would take the time to really talk to the new folks that are here, that are coming in, it would be so helpful. Fracking is a very scary word and we started using it because it was in the news and that’s when the community responded to that. I’m on my way out, but there’s kids that are coming up and we care about them, we care about their health; there’s a lot of health risks involved in what we’ve all been through throughout the years and it’s still not over.
John Kim: We did a big presentation in the past on what was completed, and I would be happy to come back in and re-educate people. You are right; I think it needs to be re-done occasionally because new people come to this meeting all the time.

Yolanda Herrera: Just to let everyone know, we are working on doing different presentations, poster sessions, we’re working on something for October, we’re also working with Skeo Solutions on how to move things forward especially for the new people so that it’s an ongoing Fact Sheet, not just for those of us that have been around forever but for all those that we want to get the correct information out to. We are working on this even though you don’t see all the work that we are doing today, but we are having separate meetings to see how we can better improve community outreach with information in both English and Spanish. I would ask that you be a little bit more patient with us, know that we are working on it, if you have any other concerns, please see myself or Ms. Aycock. If you have any suggestions on how we can move this forward, please see either on of us with that information. I would also like to talk about the amazing tour that we’re scheduling for October where we will invite everybody here, but we will ask that you sign up so that we know how many people to expect and maybe at that time, Mr. Roudebush will have enough time to do a poster presentation with graphing. I’m someone who believes in “see it, smell it, touch it” and that gives you a better understanding.

Eric Roudebush: Upcoming activities will include an airport property tour, which is adjacent to the Three Hangars; this event is scheduled for Thursday October 4, 2018. You’re welcome to come out to the airport property, we’ll meet on the south side of the Three Hangars Building at 10:00 AM; the address is 850 E. Teton Road, Tucson, AZ. The address will likely take you to the north side of the building, just be aware that we will be meeting on the southside. About Ms. Herrera’s statement, how are we planning to get sign-up information?

Yolanda Herrera: Ms. Williams, do you think you can generate a sign-in sheet for those that are wishing to attend the tour?

Jenn Williams: Yes, I can do that.

Yolanda Herrera: If you’re interested in attending the tour, we would ask that you sign up with your contact information, how many people will be attending with you and make sure that myself or Mr. Roudebush receives that information.

Mary Aycock: We were thinking about circulating the sign-up sheet tonight, so that the people that are here can put their names on and potential others that they may know of; then we can do a follow up after tonight, maybe send out an email or add something to the Fact Sheet saying ‘if you’re interested contact Ms. Aycock or Ms. Herrera.

Statement from Cecilia Campillo: I represent one generation, but my niece is still going through Oncology treatments, she was affected by the first round of Trichloroethylene and is now in her late 30s. She has three children of her own and now one of her three children are getting tested genetically for anything that might have gotten to him as he was her first born. So, all of these comments that are being made about how it important it is to pass this information on to the future generations, that’s a very stark example of why they need to know. I will try to come to this tour, but I already have a response to my text messages that all of this information will be available as soon as I distribute it. However, the younger generation are interested, because their older generation has been affected by it.
Yolanda Herrera: If I can just remind everybody that during presentations to please keep your questions as they pertain to the presentation. Ms. Campillo, I hear you. I’m not without compassion, it has affected everybody including myself, so to make those comments is important for everybody to hear, but can we hold those off until the end of the meeting so that we can continue because we have quite a few other presentations that need to be heard and we need to be out of here by no less than a quarter to eight and we are now at 7:00.

*Question from Robert Jaramillo:* When the presenters are using acronyms, can you explain what it stands for?

Yolanda Herrera: I’m sorry Mr. Jaramillo, which acronym did we miss?

*Statement from Robert Jaramillo:* It was ‘VOCs’.

Yolanda Herrera: Ok, thank you. We are working on a glossary as well so that we can hand those out at all the meetings.

*Question from Margie Mortimer:* Would call to the audience be a more appropriate time to ask questions beyond presentation questions?

Yolanda Herrera: Yes, it would, thank you for clarifying that. Again, moving forward to make it easier for everybody we have a long list of homework for people to take home to present so that we can do a better job; that’s an FYI for everybody here at the table.

Can you please re-iterate that no one south of Irvington is receiving any of the treated water and we have not been receiving that since the wells got shut down and the well water has nothing to do with the plume and contamination. I just want you to really strongly state that for everybody in this room.

Chad Lapora: Yes, that is true, I can confirm that is all correct information.

**Tucson Water Update, by Chad Lapora**

Chad Lapora:

During the 2nd quarter of 2018 (April, May and June) at the Advanced Oxidation Plant, the average combine flow of the north and south well fields for Trichloroethylene concentration coming into the plant was 11.58 parts per billion. The average 1,4-Dioxane concentration was 1.26 parts per billion. We also measure both chemicals as they leave the Advanced Oxidation Plant and both Trichloroethylene and 1,4-Dioxane are normally at non-detect; however, during the quarter there were a couple of detects which averaged out to 0.11 parts per billion, which is barely above detect. What you see leaving Advanced Oxidation Plant is what you’re going to see coming into the Tucson Airport Remediation Plant and you’ll see that those numbers are identical; there were no signs of Trichloroethylene or 1,4-Dioxane. Both Trichloroethylene and 1,4-Dioxane was non-detect at Sampling point 830, which is north of the Santa Cruz Lane Reservoir.

During the 2nd quarter, the volume of water treated was 175.800 million gallons for April, 178.173 million gallons for May, and 197.141 million gallons for June. The pounds of Trichloroethylene removed were 17 pounds for April, 18 pounds for May, and 17 pounds for
June. Regarding meter readings, what comes out of the wells directly mirrors what is coming out of the plant. There was previously some thought that water could be escaping the pipes and going out into the environment. There are meters on every one of the nine wells, so that we can meter the water leaving the well. We also have meters on water coming into the plant. The graphs presented show that what’s coming out of the wells stays in the pipe and goes directly to the plant for treatment.

Tucson Water has completed drilling of R-008B well. The next phase is well construction, which will begin in 1-2 weeks. Once completed and because it has been over 30 days, a total coliform sample (this is not a typo) will be obtained and the well will need to be purged for water quality testing. A portable air stripper will need to be deployed to the site before water can go into the system. Construction will also begin to install De-Sander units at the Advanced Oxidation Plant in the next 1-2 weeks.

**Question from Henry Vega, Sr.: Since when has there been non-detection at the wells?**

**Chad Lapora:** There are three sampling points that we test every month and they are non-detect for Trichloroethylene and 1,4-Dioxane.

**Question from Henry Vega, Sr.: Since when?**

**Chad Lapora:** I would have to go back and look, but we have not had any detections in there as far as I know.

**Yolanda Herrera:** Mr. Lapora, can you explain that those are test wells, they’re not delivery wells.

**Chad Lapora:** Those are sampling points in our distribution system, so they’re not wells at all, they’re sampling points. We sample every month to demonstrate water quality, to demonstrate that the water that people are drinking in that area does not have Trichloroethylene in it and it does not have 1,4-Dioxane in it.

**Yolanda Herrera:** Mr. Lapora, can you answer his question as far as how long there has been non-detect at those three sampling points?

**Chad Lapora:** For those sampling points I would have to go back and research that information. We’ll look into it and come back with an answer.

**Statement from Audience member:** (Inaudible)

**Yolanda Herrera:** People have to understand that those are not drinking wells. I want you to reclarify what the purpose of those wells are.

**Chad Lapora:** Right, they’re sampling points not wells.

**Question from Robert Jaramillo:** (Inaudible)

**Chad Lapora:** Tucson Water distribution system that serves the southside is not connected to the Tucson Airport Remediation or Advanced Oxidation facility.
Robert Jaramillo: (Inaudible)

Chad Lapora: That’s not my area of expertise so I’m not going to comment on that, but for what we do, the Advanced Oxidation Plant is what removes the 1,4-Dioxane and the air stripping towers removed the Trichloroethylene, but they did not remove the 1,4-Dioxane; that’s why we had to build the Advanced Oxidation Plant.

Yolanda Herrera: Just for clarification, water that Tucson Water is delivering is at non-detect.

Chad Lapora: That is true.

Question from Margie Mortimer: (Unable to hear question due to recording ending while Ms. Mortimer was talking)

Question from Geraldine Gonzales: I’m confused, there is 0.50 of Trichloroethylene, who gives those numbers, who gives them the right to give us those numbers?

Chad Lapora: The 11.58 number is taken from samples that are sent to a laboratory and the amount of Trichloroethylene in the water is measured. That’s what’s coming into the plant, that’s how much of Trichloroethylene is in the water. But if you look at what’s coming out, it is non-detect for Trichloroethylene; it’s less than 0.50, which means we don’t detect it by our lab method. It’s below the 1.5 parts per billion, which is the standard, so if it’s less than .5 parts per billion than it’s less than 1.5 parts per billion.

Mary Aycock: That little “v” that’s next to the number means less than. They have to have a detection limit that they can go down to and with there analytical methods, as with anybody’s, they can only go to a certain level so once the instruments see that it’s below that, they can report less than this level. We’re talking parts per billion, so it’s very low level.

Chad Lapora: Two additional sampling points have been installed in the proximity of the north well field and south well field respectively in order to further demonstrate water quality. These sampling stations will be sampled quarterly for Trichloroethylene, 1,4-Dioxane, PFOA and PFOS. Perfluorinated compounds is one of the new things we’re looking at; we will provide data moving forward on them as well.

The picture (shown in handout) depicts what the De-Sanders look like; they are in Tucson and ready to be installed. The second picture shows the Header Pipe that’s going to be installed in conjunction with the De-Sander units. By October, there will be pictures available showing everything in operation. The map depicts the two new sampling stations SPV-1 and SPV-2, which are around the north and south well fields; this table will be enlarged to account for PFOA and Perfluorooctanesulfonic acids. The process to test for 1,4-Dioxane was originally started with seven or eight sampling points of where the water was delivered to demonstrate that there was no 1,4-Dioxane or Trichloroethylene in that area of delivery. This sampling process will begin again to include PFOA and PFOS. The sampling will begin in August and this map will be used to demonstrate all the sampling points and results at the next UCAB meeting in October.

Regarding the Water Pipe sampling and analysis, a Pipe Study schedule has been developed, and the Non-Disclosure Agreement between the University of Arizona and Tucson Water was signed and executed. The Draft Study Plan has been sent to the University of Arizona for review and/or
any comments. The Right of Entry has been approved and finalized and Tucson Water is currently seeking to utilize the Manor Baptist Church as a pilot site to harvest pipe as well as sampling and analyzation of the pipe for any residual Trichloroethylene or 1,4-Dioxane. Mr. Biggs will be sending a letter to Manor Baptist Church; this project is expected to be complete by October-November timeframe.

**Question from Robert Jaramillo:** You’re developing a pipe study schedule, is that for the homes or are you also testing the delivery system?

**Chad Lapora:** This was for the volunteers, so when you say homes, it’s the people who volunteered.

**Question from Robert Jaramillo:** Is there going to be a study of the delivery system as well?

**Chad Lapora:** It’s possible we could do this, the other thing that is possible is as part of the Right of Entry Development Services, if we harvest pipe on the private side, the City of Tucson Development Services is going to come in with a permit and they’ll need to come back and inspect. What I’m guessing is that if someone says, “I want to have my pipes tested, but I don’t want Development Services coming on my property.” If they say that then we can say, we can harvest pipe from the main to the meter, which takes care of what you’re talking about because that’s distribution pipe.

**Robert Jaramillo:** That’s the only problem with volunteering since the delivery system belongs to the city, the city has to take the initiative to test the delivery system pipe.

**Chad Lapora:** I think the plan was that this was something that we were doing for the citizens who volunteered; I really do think that somebody is not going to want us to take their pipe, so I do believe that at some point we will be doing the distribution system.

**Robert Jaramillo:** I think the delivery system should be test, I know that’s expensive and extensive, but I personally believe that I haven’t seen any of the distribution system pipe on this side be replaced.

**Chad Lapora:** When we come back in October we should have in update on where with at with the piping.

**Mary Aycock:** I’m sorry to interrupt, but we’ve got about 15 minutes left, Mr. Lapora would you be available for just a few minutes after the meeting has ended for questions? Anyone who has further questions regarding this can ask Mr. Lapora after the meeting. We want to be sure that all of our presenters are able to speak tonight.

**Chad Lapora:** For the Tucson Airport Remediation Plant area we have developed a PFOA and PFOS sampling plan to get a better idea of what’s going on there. Tucson Water is set to implement routine sampling of PFOA and PFOS at the combined entry-Point-to-the Distribution Systems, which is SP-830, Tucson Airport Remediation Plant, Advanced Oxidation Plant and well-field. Monthly sampling at SP-830 and the Advanced Oxidation Plant, both what’s coming in and what’s going out. We will sample all the remediations wells every quarter and the four sentinel monitoring wells. Semi-annually we will sample monitoring four wells located up-gradient of the north well fields and two of the south well fields. As of June 28, 2018, we
sampled the combined entry-Point-to-the Distribution System and we were less than 2.5 parts per trillion for PFOA and PFOS going into the system, which is at non-detect.

**Fernando Molina:** Mr. Molina gave an update on progress with the Community Outreach efforts. Mr. Molina has been productive in giving several presentations involving the Trichloroethylene and 1,4-Dioxane contamination and the clean-up process. There are other neighborhood groups and other organizations that received presentations as well. We’ve also worked closely with Sunnyside High Schools giving tours as part of a curriculum program all for the last quarter. We’ve spoken with several Media organizations, more recently related to the Perfluorinated compounds we’re finding. Part of Mr. Molina’s goal is to reach the Spanish speaking community. Several presentations have been given in Spanish as well as through various television and radio programs. Mr. Molina is making sure that information gets out to the community and being given updates on Tucson Airport Remediation Plant and other contamination issues that come up. At the last meeting, Mr. Molina contacted the Tucson Indian Center, they were gracious enough to have Mr. Molina come in and speak to their staff. He gave a 45-minute presentation to them; they had several questions about the clean-up process. They also asked Mr. Molina to come back and speak to one of their leadership programs, which involved a 2-hour workshop that provides an overview of water resources, distribution and quality and how water is monitored and sampled for water quality, as well as how it all ends up and connects to the clean-up of the Superfund site. Mr. Molina also spoke with them about seeing if they can provide the name of someone to sit on the UCAB as a community member. They were going to check with staff or other folks that they might have connections with, as well as their clientele. Mr. Molina is waiting to hear back from the Center to determine if they were able to find a representative for the board.

**Chad Lapora:** The two maps included in the presentation show the clean-up progress. The first map is from when the clean-up began in 1987 and the second map shows progress to 2017. So far this year Tucson Water has removed approximately 95 pounds of Trichloroethylene from the aquifer during the first six months of 2018. Since Tucson Airport Remediation Plant when into operation 23.75 years ago, 5,645 pounds of Trichloroethylene have been removed from the aquifer. Since the Advanced Oxidation Plant went into operation and started removing 1,4-Dioxane, we’ve removed 105.6 pounds.

**Voices Unheard Oral History Project by Denise Moreno**

**Denise Moreno-Ramirez:** Ms. Moreno gave an update on the Oral History Project; since she has gone back to school, this has now become her dissertation project and it is based on what is called community-engaged research. Ms. Moreno has been working with the UCAB since 2005 and has completed the scoping interviews, with only one more interviewee needed. If this project should move forward, Ms. Moreno has obtained community input on who should be interviewed. Ms. Moreno has attended local meetings and events and did what is called participant observation, as well as speaking to people to find out what they thought about the interview process and who would be a good interviewee. The first oral history was of Cecilia Campillo. Ms. Moreno has been able to put together three generations of co-chairs that are a part of the UCAB. She was able to interview the first co-chair, who was Larry Vanderveer and Ms. Yolanda Herrera was interviewed today and Mr. Ignacio Gomez will be interviewed soon. It’s also important to look at the other community boards that were around at that time, therefore, Mr. Edwardo Quintana will be interviewed tomorrow. He is one of the founders of Tucsonans.
for a Clean Environment. Mr. David Barraza, who worked for The City of Tucson will also be interviewed as well as Mr. Fred Brinker, who worked for the Tucson Airport Authority. These interviews will also give perspective of responsible parties and government representatives that were involved in the beginning. Ms. Moreno has five interviewees that have not set dates for their interviews and she also has two interviewee slots that have not been filled; during interviews, Ms. Moreno is getting input on those who should be interviewed. For example, there is a woman named Melinda Gonzales-Bernal, she was one of the first co-chairs of the Tucsonan’s for a Clean Environment, but I haven’t been able to get in contact with her so if anyone knows her or can reach out to her please meet with me after the meeting. There has also been some input given about talking to Richard Gonzales, he was an original lawyer for the Toxic Torts. Mr. Jim Austin is also on the list of interviewees and Richard Moore, who was part of the Southwest Group for Economic and Environmental Justice. This Group collaborated with Tucsonans for a Clean Environment to look at the contamination plume here in Arizona. Mr. Moore is a key figure at the National Level for Environmental Justice. Other interviewees are Alonzo Morado and Gerald Korte. If anyone has any input or comments for Ms. Moreno, please see her after the meeting. Ms. Moreno’s goal is to prioritize the historical aspect of this project through the people that were involved in the 80s and 90s when all of this was coming to light. Ms. Moreno made attempts to get in contact with the original lawsuit members from the 1940s and 1950s called the Grand Central Lawsuits, but I think they are long gone, so I was not able to reach anyone. As part of the project, a website has been created with a resource page which has links from different government and state organizations. The minutes of the UCAB can also be found here so that the public has an extra access option. Ms. Moreno is currently looking into several different ways to bring the community together to celebrate the Oral History as well as celebrating the interviewees and the roles that they have played in this experience.

**Question from Henry Vega, Sr.:** I haven’t seen any representative from Ward 1; we have Ward 5 and 6 here tonight.

**Yolanda Herrera:** I emailed each one of the council members offices to remind them of the meetings, including the Mayor and to send representation. Many of them responded back that they were either busy or they didn’t have anyone to send. I’ve asked the Mayor to reappoint someone from his office to continue to attend these meetings as he has in the past, so please know that we are doing that outreach to our elected officials, not just in the City of Tucson, but Pima County Board of Supervisors and our state elected official members.

**Henry Vega, Sr.:** I would like to praise Ms. Moreno-Ramirez for the good job that she’s doing. Thank you.

**Yolanda Herrera:** Thank you Mr. Vega, she is doing an excellent job and she’s a pleasure to work with.

**Charter Revisions by Yolanda Herrera**

**Yolanda Herrera:** The charter has been approved by the Air Force attorneys. I’m just doing this as a consensus that we all agree on the revision as we said we would revisit it at this meeting. Is there a motion to accept those charter changes at tonight’s meeting?

**Bill Jeffers:** I make a motion to accept the charter changes as written.
Henry Vega, Sr.: I second the motion to accept the charter.

Yolanda Herrera: Hearing no opposition, the motion passes.

Community Outreach

Yolanda Herrera: We will have an update at the October meeting regarding things being done for community outreach.

CALL TO AUDIENCE

Enrique Vega: During my time serving in the United States Marine Corp, I didn’t not drink Tucson water, but I’ve been drinking the Tucson water for over 50 years now. My dad has been drinking Tucson water for over 80 years. It was 107 years ago that all these social, economical and environmental problems were brought here by people that were already here. At the same time, I know there’s people here that probably got their airline tickets and motel and taxis, rental car and food paid for per diem. There’re people like my dad that have been coming to these meetings for over 20 years that doesn’t get paid, he just participates, he’s an active member of the community. My family’s been here since before this was the United States; those people that are getting paid all kinds of money from the government right now, just to let you know that this environmental racism that’s taking place in Tucson. You’ve only gotten 17 pounds of contaminants when there’s millions of gallons of whatever is was that contaminated the water in the first place, I don’t think 17 pounds is that much, especially since they’ve been dumping since the late 1920s or 30s. For those of you who’ve been drinking water in Tucson for over 30 and 80 years raise your hands. I’m here to let you know that it’s very sad the way the environment is being treated. So, thank you to the people that brought this environmental catastrophe to light, I understand this Tucson Superfund site is the third largest in the US and I also think that since the water’s contaminated all the homes in those areas should have their taxes reduced or eliminated.

Question from Christine Krikliwy: Because of all the current EPA roll backs, is that going to impact Tucson in any way?

Mary Aycock: There’s no budget cuts for Tucson International Airport, the clean-ups being paid for by the Air Force, we have special accounts set aside for Tucson International Airport so the budget for this site will not be affected by anything happening in DC and quite frankly the Superfund program in and of itself has not been affected significantly in any way.

Jenn Williams: I need UCAB members to sign the Charter sign-in sheet tonight before you go and then get it back to me.

FOLLOW-UP ACTION ITEMS

No follow-up action items.

OPEN DISCUSSION/NEXT MEETING AGENDA

Future UCAB meetings
17 October 2018

Upon motion made and seconded, the meeting was adjourned.
Site Background

Tucson International Airport Area (TIAA) site was named a federal Superfund site in 1983. Industrial and U.S. military defense-related activities from the 1940s to the mid-1970s caused groundwater and soil contamination (pollution) at the site. While the site is called TIAA, the site boundaries are from Ajo Way in the north, Hughes Access Road in the south, Alvernon Way on the east, and Interstate 19 in the west. See figure 1.

The main chemicals that have polluted groundwater include trichloroethene (TCE), dichloroethene (DCE), chloroform and chromium. Polychlorinated biphenyls (PCBs), chemicals and metals (like lead) have also polluted the soil in some parts of the site that are on Tucson International Airport property.

While the site had been polluted by various chemicals, there is no way for residents to come into contact with these chemicals. Access to areas of the site with contaminated soil are restricted, polluted groundwater is closely monitored and treated to all state and federal safe drinking water standards, and polluted soils have been removed from the site to be cleaned up.

For information on possible health effects from contaminants at the site, see the Agency for Toxic Substances and Diseases Registry webpage: [www.atsdr.cdc.gov/toxfaqs/index.asp](http://www.atsdr.cdc.gov/toxfaqs/index.asp)

The TIAA site contains seven major project areas including the:

- Air Force Plant 44 (AFP 44);
- Tucson Airport Remediation Project (TARP);
- Airport Property (including Tucson International Airport and Three Hangers Building);
- 162nd Fighter Wing Arizona Air National Guard (AANG);
- Texas Instruments, Inc. (formerly Burr-Brown Corporation);
- Former West-Cap property; and
- West Plume B.

What is a Superfund site?

A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by EPA as a candidate for cleanup because it poses a risk to human health and/or the environment.
Is My Drinking Water Safe?

Yes. The Tucson Water Department provides water that meets all state and federal drinking water health standards. For more information, please visit: https://www.tucsonaz.gov/water

Cleaning Up Groundwater

In 1988, EPA issued a cleanup plan (called a “Record of Decision” [ROD]) to clean up the groundwater. In the ROD, contamination in the groundwater aquifer—an underground layer of water—was divided into two parts: Area A to the west and Area B to the east.

As part of the cleanup plan, three groundwater treatment plants were built. See figure 2:

- Tucson Area Remediation Project (TARP) system;
- Tucson Airport Property system; and
- Air Force Plant 44 (AFP 44) system.

Figure 2: Site boundaries and locations of the plume and three treatment plants.
After water is treated by the TARP system, it is pumped to a Tucson Water Department drinking water reservoir and then delivered to customers. Water treated by the Tucson Airport Authority and AFP 44 systems is reinjected into the regional aquifer. Groundwater cleanup at TIAA has been ongoing since the cleanup plan was issued in 1989. The three treatment systems have reduced the groundwater plume size and concentrations significantly during nearly 30 years of treatment.

**Figure 3:** Above is the approximate size, shape, and concentration of one of the main chemicals in the groundwater—trichloroethylene (TCE)—in 1987, two years prior to clean up starting.

**Figure 4:** Above is the approximate size, shape, and concentration of TCE in November 2017 after decades of cleanup. The size and concentrations of the TCE has been reduced significantly.
Vapor Intrusion

What is vapor intrusion?

“Vapor intrusion” is the scientific name for the process where chemicals, such as those found at the TIAA site, move from soil and/or water underground and into the air above ground. These chemicals move through “volatilization,” which is, most simply, like evaporation. See figure 5 to the right. Through vapor intrusion, these chemicals may move into the indoor air of buildings.

To ensure this was not happening in buildings near TIAA, EPA did three investigations in years past. The studies showed vapor intrusion was not happening at buildings within the boundaries of the TIAA site or nearby TIAA’s boundaries. EPA will continue to evaluate the potential for vapor intrusion at TIAA and conduct future studies if needed.

Past vapor intrusion studies

When the first cleanup plan was developed in 1988, vapor intrusion was not included. This is because scientists then did not fully understand how the chemicals at the site behaved. Since then, great advancements have been made in our understanding of these chemicals.

New understanding of how the chemicals at TIAA behave led EPA to re-review possible areas at TIAA where vapor intrusion may happen. At all sites where vapor intrusion may happen, vapor intrusion is looked for in areas where contaminated groundwater or soil is close to the surface and the chemicals in the groundwater or soil are found in high concentrations.

Portions of Corona Road, the “Three Hangars” area, and the vacant “Elvira lot” area of the site were the only three locations where groundwater was close to the surface and chemicals were present in high concentrations. See figure 6 to the right for locations. Vapor intrusion samples from the investigation showed concentrations of the chemicals were either very low (not posing a health risk) or not detected at all. Because these were the three areas that historically had the...
highest probability for finding vapor intrusion, EPA has a very high level of confidence that vapor intrusion is not an issue at the TIAA site.

**Why is vapor intrusion a concern?**

When vapor intrusion does occur, it can build up to a point where the health of residents or workers in those buildings could be at risk. The health risk will vary based on the type of chemicals, the levels of the chemical found, the length of exposure and the health of the exposed individual.

**Can vapors come from other things aside from contaminated groundwater and soil?**

Common household products and manufacturing products can also be a source of indoor air problems. Vapors or gases can come from cleaners, degreasers, paints, new carpeting and furniture, stored fuel, dry cleaned clothing and even cigarette smoke. These levels are usually found in moderation and “off-gas” quickly into the air without creating a health issue.

**How is vapor intrusion investigated?**

In most cases, collecting soil gas or groundwater samples near the spill site is done first to see if there is on-site contamination. If soil vapors or groundwater contamination is found, soil vapor samples are taken from areas outside the immediate spill site and near any potentially affected businesses or homes. The EPA has conducted three soil vapor investigations related to the TIAA Superfund Site north of Los Reales Road.

**Vapor Intrusion Studies and Findings**

<table>
<thead>
<tr>
<th>Study</th>
<th>Date</th>
<th>Location</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elvira Road</td>
<td>February 2011</td>
<td>Vacant lots on north side of E. Elvira Road near S. 4(^{th}) Ave</td>
<td>No chemicals of concern were detected above EPA screening criteria</td>
</tr>
<tr>
<td>Corona Road</td>
<td>January 2015</td>
<td>Corona Road and S. Nogales Hwy</td>
<td>No chemicals of concern were detected above EPA screening criteria</td>
</tr>
<tr>
<td>Three Hangars Building</td>
<td>January 2015</td>
<td>Three Hangars Building on Airport Property</td>
<td>No chemicals of concern were detected above EPA screening criteria</td>
</tr>
</tbody>
</table>

**Five-Year Review of Cleanup Plan**

EPA is in the process of doing its third review of the site’s groundwater and soil cleanup plans and cleanup actions for the site. According to Superfund law, if a cleanup takes more than five years to complete, or if hazardous wastes are to be left on site, the cleanup plan will be reviewed every five years. These reviews are called “Five-Year Reviews” and they are done to make sure the cleanup plan is working as it was planned.
As part of EPA’s Five-Year Review, EPA will look at:

- the three pump and treat systems that remove the chemical TCE from the groundwater;
- different parts of the soil cleanup, which is on-going; and
- the results of the three soil vapor intrusion studies done at the TIAA site (described on page 5), among other items.

The last Five-Year Review was done in 2013. The review found that the cleanup plans were protective of human health and the environment.

**EPA wants to hear from you during the review process!**

The 2018 five-year review report will be done in September 2018. EPA invites the community to learn more about this review process and provide feedback. Voices from the community and stakeholders are an important part of the review.

As part of the five-year review, EPA interviews community members and stakeholders to hear how the cleanup works for them. If you would like to be interviewed, please contact Mary Aycock or Viola Cooper before August 31, 2018.

When complete, the five-year review report will be available to the public online, at the local information repository, and at the Superfund Records Center. The addresses and hours of the local information repository and the EPA Superfund Records Center are listed below.

### Information Repositories

An information repository is where current information, technical reports, and reference materials regarding a Superfund sites are stored. EPA or the State establishes the repository in the community at the beginning of the site studies to provide the public with easily-accessible information. Copies of cleanup documents are available to the public for viewing at the following locations:

**Valencia Library**  
202 W. Valencia Road  
Tucson, AZ 85706  
(520) 594 – 5390  
**Hours:**  
Monday – Thursday 10:00 a.m. – 8:00 p.m.  
Friday 10:00 a.m. – 5:00 p.m.  
Saturday 9:00 a.m. – 5:00 p.m.  
Sunday 1:00 p.m. – 5:00 p.m.

**EPA Superfund Records Center**  
75 Hawthorne Street  
San Francisco, CA 94105  
(415) 947 – 8717  
**Hours:**  
Monday – Friday 8:00 a.m. – 5:00 p.m.
HOW TO STAY INVOLVED

We want to make sure the community has opportunities to learn about, ask questions, and stay involved as site work moves forward.

Technical Assistance Services for Communities (TASC)

This EPA program provides independent assistance through an EPA contract to help communities better understand the science, regulations and policies of environmental issues and EPA actions. The TASC program conducted a Technical Assistance Needs Assessment (TANA) for the community. The TANA helped EPA and the community better understand the current technical assistance needs of the TIAA site community related to the site cleanup.

TASC had conversations to develop the TANA with community members and other stakeholders from October to November 2017. Participants shared a variety of concerns related to the community’s potential technical assistance needs. The main concern raised by participants was that public awareness and understanding of the Superfund site and cleanup process is limited. Participants provided potential explanations for why awareness and understanding may be low at the site. They also offered potential solutions to increase and improve public awareness and engagement.

On March 28, 2018, TASC hosted a TANA prioritization meeting with participants in Tucson, Arizona. At the meeting, the top needs were identified and prioritized and they are:

• Provide in-person workshops/presentations and fact sheets about Superfund topics. Fact sheets should be in plain English and Spanish, and include visuals and maps.

• Coordinate and host regularly-scheduled quarterly conference calls with community members to encourage community-agency interaction and continue to gather information on community needs.

• Provide additional meeting support to the UCAB with a focus on potential renewal of and updates to the UCAB charter, meeting structure, outreach methods (including website) and membership. This could include providing plain language support for the technical presentations shared by consultants so that the information can be more easily disseminated to the general public.

For the complete report, please visit the website at: [www.epa.gov/superfund/tucsonairport](http://www.epa.gov/superfund/tucsonairport)
Or visit the Information Repository. See page 6 for more information.

Unified Community Advisory Board

To provide community members with an opportunity to learn about the cleanup process and to share local perspectives on the cleanup, a Unified Community Advisory Board (UCAB) was formed in 1995. The meeting is open to the public.

The UCAB meets the third Wednesday of January, April, July, and October. The meetings start at 5:45 p.m. at:

El Pueblo Senior Center
101 W. Irvington Road,
Tucson, AZ 85706
Tucson International Airport Area
Superfund Site Cleanup Update

For More Information
You may also call EPA’s toll-free Superfund hotline and leave a message that will be forwarded to the EPA staff listed above.
The hotline number is 1-800-231-3075.

Weblinks
For more information on the Tucson International Airport Superfund site and to view site documents, please visit:
www.epa.gov/superfund/tucsonairport
For more information on EPA’s Superfund program, please visit:
www.epa.gov/superfund

If you have questions or comments regarding TIAA, please contact:

Viola Cooper
EPA Community Involvement Coordinator
75 Hawthorne Street, San Francisco, CA 94105
(415) 972-3243
cooper.viola@epa.gov

Mary Aycock
EPA Remedial Project Manager
75 Hawthorne Street, San Francisco, CA 94105
(415) 972-3289
aycock.mary@epa.gov

Contact the EPA

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Actualización de la limpieza del sitio Superfund
Tucson International Airport Area
Antecedentes del sitio
El sitio Tucson International Airport Area (TIAA) fue nombrado sitio Superfund federal en 1983. Las actividades industriales y relacionadas con la defensa del ejército de los EE. UU. desde la década de los cuarenta hasta mediados de la década de los setenta provocaron contaminación de las aguas subterráneas y el suelo (polución) en el sitio. Si bien el sitio se llama TIAA, los límites del sitio son desde Ajo Way en el norte, Hughes Access Road en el sur, Alvernon Way en el este, y la interestatal 19 en el oeste. 

Entre las principales sustancias químicas que han contaminado las aguas subterráneas se incluyen el tricloroeteno (TCE), el dicloroetano (DCE), el cloroformo y el cromo. Los bifenilos policlorados (PCB), las sustancias químicas y los metales (como el plomo) también han contaminado el suelo en algunas partes del sitio que se encuentran en la propiedad de Tucson International Airport.

Si bien el sitio había sido contaminado por diversas sustancias químicas, no hay forma de que los residentes entren en contacto con estas. El acceso a las áreas del sitio que tienen suelo contaminado está restringido, las aguas subterráneas contaminadas se controlan de cerca y se tratan de acuerdo a todos los estándares estatales y federales de agua potable segura, y los suelos contaminados se han removido del sitio para su limpieza.

¿Qué es un sitio Superfund?
Un sitio Superfund es cualquier terreno de los Estados Unidos que ha sido contaminado por residuos peligrosos e identificados por la EPA como candidato para la limpieza, ya que representa un riesgo para la salud humana o el medio ambiente.

El sitio TIAA contiene siete áreas principales de proyectos, incluidas las siguientes:
- Planta 44 de la Fuerza Aérea de los Estados Unidos (AFP 44)
- Proyecto de Remediación del Aeropuerto de Tucson (TARP)
- Propiedad del Aeropuerto (incluido el Aeropuerto Internacional de Tucson y el edificio Three Hangers)
- Ala de Combate 162 de la Guardia Nacional Aérea de Arizona (AANG)
- Texas Instruments, Inc. (anteriormente, Burr-Brown Corporation)
- Antigua propiedad de West-Cap
- West Plume B
¿Es segura el agua potable?

Sí. El agua que ofrece el Departamento de Agua de Tucson cumple con todos los estándares estatales y federales de salud de agua potable. Para obtener más información, visite el sitio web: https://www.tucsonaz.gov/water.

Limpieza de las aguas subterráneas

En 1988, la EPA emitió un plan de limpieza (llamado “Documento de decisión” [ROD]) para limpiar las aguas subterráneas. En el ROD, la contaminación del acuífero de aguas subterráneas (una capa subterránea de agua) se dividió en dos partes: El Área A al oeste y el Área B al este.

Como parte del plan de limpieza, se construyeron tres plantas de tratamiento de aguas subterráneas. Veá la figura 2:

- Sistema del Proyecto de Remediación del Área de Tucson (TARP)
- Sistema de la Propiedad del Aeropuerto de Tucson
- Sistema de la Planta 44 de la Fuerza Aérea de los Estados Unidos (AFP 44)

![Figura 2: Ubicaciones y límites del sitio del penacho y las tres plantas de tratamiento.](image-url)
**Foto:** Instalación de tratamiento de aguas subterráneas del Proceso de oxidación avanzada (AOP) del TARP.

Una vez que el sistema del TARP trata el agua, se bombea a un depósito de agua potable del Departamento de Agua de Tucson y luego se entrega a los clientes. El agua tratada por los sistemas de la AFP 44 y la Autoridad del Aeropuerto de Tucson se reinyecta en el acuífero regional. La limpieza de las aguas subterráneas en el sitio TIAA ha estado en curso desde la emisión del plan de limpieza en 1989. Los tres sistemas de tratamiento han reducido significativamente las concentraciones y el tamaño del penacho de aguas subterráneas durante casi 30 años de tratamiento.

**Figura 3:** Arriba se muestra la concentración, la forma y el tamaño aproximados de una de las principales sustancias químicas de las aguas subterráneas (el tricloroetileno [TCE]) en 1987, dos años antes del inicio de la limpieza.

**Figura 4:** Arriba se muestra la concentración, la forma y el tamaño aproximados de TCE en noviembre de 2017, después de décadas de limpieza. El tamaño y las concentraciones del TCE se han reducido significativamente.
Intrusión de vapores

¿Qué es la intrusión de vapores?

La “intrusión de vapores” es el nombre científico del proceso en el que las sustancias químicas, como las que se encuentran en el sitio TIAA, pasan del suelo o el agua subterránea al aire de la superficie. Estas sustancias químicas se mueven a través de la “volatilización”, que es, simplemente, como la evaporación. Vea la figura 5 de la derecha. A través de la intrusión de vapores, estas sustancias químicas pueden pasar al aire de interiores de los edificios.

Para asegurarse de que esto no sucediera en los edificios cercanos al sitio TIAA, la EPA realizó tres investigaciones en años anteriores. Los estudios demostraron que la intrusión de vapores no estaba sucediendo en los edificios que se encuentran dentro de los límites del sitio TIAA o cerca de estos. La EPA seguirá evaluando el potencial de intrusión de vapores en el sitio TIAA y llevará a cabo estudios, de ser necesario.

Estudios anteriores sobre la intrusión de vapores

Cuando se elaboró el primer plan de limpieza en 1988, no se incluyó la intrusión de vapores. Esto se debe a que los científicos entonces no entendían completamente el comportamiento de las sustancias químicas en el sitio. Desde entonces, se han hecho grandes avances en nuestra comprensión de estas sustancias químicas. La nueva comprensión del comportamiento de las sustancias químicas en el sitio TIAA llevó a la EPA a volver a revisar las posibles áreas del sitio TIAA en las que puede ocurrir la intrusión de vapores. En todos los sitios en los que puede ocurrir la intrusión de vapores, la intrusión de vapores se busca en áreas en las que las aguas subterráneas o los suelos contaminados están cerca de la superficie y las sustancias químicas en el suelo o las aguas subterráneas se encuentran en altas concentraciones.

Partes de Corona Road, el área “Three Hangars” y el área vacía “Elvira lot” del sitio eran los únicos tres lugares en los que las aguas subterráneas estaban cerca de la superficie y las sustancias químicas eran presentes en altas concentraciones. Vea la figura 6 de la derecha para conocer los lugares. Las muestras de intrusión de vapores de la investigación demostraron que las concentraciones de las sustancias químicas eran muy bajas (no representaban un riesgo para la salud) o totalmente nulas. Dado que estas fueron las tres áreas que históricamente tuvieron la mayor probabilidad de sufrir intrusión de vapores, la EPA tiene un nivel muy alto de confianza de que la intrusión de vapores no es un problema en el sitio TIAA.

Figura 6: Ubicación del estudio de intrusión de vapores.
¿Por qué la intrusión de vapores representa una inquietud?
Cuando se produce la intrusión de vapores, puede acumularse hasta un punto en el que la salud de los residentes o trabajadores de esos edificios podría estar en riesgo. El riesgo para la salud variará en función del tipo de sustancias químicas, los niveles de la sustancia química encontrada, la duración de la exposición y la salud de la persona expuesta.

¿Pueden los vapores provenir de otras cosas además de las aguas subterráneas y el suelo contaminados?
Los productos domésticos y de fabricación comunes también pueden ser una fuente de problemas de aire de interiores. Los vapores o gases pueden provenir de productos de limpieza, productos desengrasantes, pinturas, alfombras y muebles nuevos, combustible almacenado, ropa lavada en seco e incluso humo de cigarrillo. Por lo general, estos niveles se encuentran en moderación y “disimulan la presencia del gas” rápidamente en el aire sin generar un problema de salud.

¿Cómo se investiga la intrusión de vapores?
En la mayoría de los casos, la recopilación de muestras de aguas subterráneas o gases del suelo cerca del sitio de derrame se realiza primero para ver si hay contaminación en el sitio. Si se detecta contaminación de aguas subterráneas o vapores del suelo, se toman muestras de vapores del suelo de las áreas fuera del sitio inmediato de derrame y cerca de las empresas o los hogares potencialmente afectados. La EPA ha llevado a cabo tres investigaciones sobre los vapores del suelo relacionadas con el sitio Superfund TIAA al norte de Los Reales Road.

Estudios y hallazgos sobre la intrusión de vapores

<table>
<thead>
<tr>
<th>Estudio</th>
<th>Fecha</th>
<th>Ubicación</th>
<th>Hallazgos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elvira Road</td>
<td>Febrero de 2011</td>
<td>Terrenos baldíos al norte de E. Elvira Road, cerca de S. 4th Ave</td>
<td>No se detectaron sustancias químicas preocupantes por encima de los criterios de evaluación de la EPA</td>
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<tr>
<td>Corona Road</td>
<td>Enero de 2015</td>
<td>Corona Road y S. Nogales Hwy</td>
<td>No se detectaron sustancias químicas preocupantes por encima de los criterios de evaluación de la EPA</td>
</tr>
<tr>
<td>Edificio Three Hangars</td>
<td>Enero de 2015</td>
<td>Edificio Three Hangars en la propiedad del aeropuerto</td>
<td>No se detectaron sustancias químicas preocupantes por encima de los criterios de evaluación de la EPA</td>
</tr>
</tbody>
</table>

Revisión de cinco años del plan de limpieza

La EPA se encuentra en el proceso de realizar su tercera revisión de las acciones de limpieza y los planes de limpieza del suelo y las aguas subterráneas del sitio. Según la ley de Superfund, si una limpieza tarda más de cinco años en completarse, o si se van a dejar residuos peligrosos en el sitio, el plan de limpieza se revisará cada cinco años. Estas revisiones se denominan “Revisiones de cinco años” y se realizan para asegurarse de que el plan de limpieza funcione según lo previsto.
Como parte de la Revisión de cinco años de la EPA, la EPA observará lo siguiente:

- los tres sistemas de bombeo y tratamiento de agua que eliminan el TCE químico de las aguas subterráneas:
- las diferentes partes de la limpieza del suelo, que está en curso:
- los resultados de los tres estudios de intrusión de vapores del suelo realizados en el sitio TIAA (descritos en la página 5), entre otros puntos.

La última Revisión de cinco años se realizó en 2013. La revisión demostró que los planes de limpieza protegían la salud humana y el medio ambiente.

**La EPA quiere tener novedades tuyas durante el proceso de revisión**

El informe de la revisión de cinco años de 2018 se realizará en septiembre de 2018. La EPA invita a la comunidad a obtener más información sobre este proceso de revisión y a brindar comentarios. La opinión de la comunidad y las partes interesadas es importante para la revisión.

Como parte de la revisión de cinco años, la EPA entrevista a los miembros de la comunidad y a las partes interesadas para conocer cómo funciona la limpieza para ellos. Si desea que lo entrevisten, comuníquese con Mary Aycock o Viola Cooper antes del 31 de agosto de 2018.

Una vez que se haya completado, el informe de la revisión de cinco años estará disponible para el público en línea, en el depósito de información local, y en el Centro de Registros de Superfund. A continuación, encontrará las direcciones y los horarios del depósito de información local y el Centro de Registros de Superfund de la EPA.

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**Depósitos de Información**

Un depósito de información es donde se almacena la información actual, los informes técnicos, y los materiales de referencia con respecto a los sitios Superfund. La EPA o el Estado establecen el depósito en la comunidad al comienzo de los estudios del sitio para brindar información de fácil acceso al público. El público tiene a su disposición copias de los documentos de limpieza en las siguientes ubicaciones:

**Biblioteca Valencia**

202 W. Valencia Road  
Tucson, AZ 85706  
(520) 594 – 5390

**Horario:**

De lunes a jueves 10:00 a. m. a 8:00 p. m.  
Viernes 10:00 a. m. a 5:00 p. m.  
Sábado 9:00 a. m. a 5:00 p. m.  
Domingo 1:00 p. m. a 5:00 p. m.

**Centro de Registros de Superfund de la EPA**

75 Hawthorne Street  
San Francisco, CA 94105  
(415) 947 – 8717

**Horario:**

De lunes a viernes 8:00 a. m. a 5:00 p. m.
CÓMO PARTICIPAR

Queremos asegurarnos de que la comunidad tenga oportunidades de aprender, hacer preguntas, y participar a medida que avanza el trabajo en el sitio.

Servicios de Asistencia Técnica para Comunidades (TASC)

Este programa de la EPA ofrece asistencia independiente a través de un contrato de la EPA para ayudar a las comunidades a comprender mejor la ciencia, las regulaciones y las políticas de las cuestiones ambientales y las acciones de la EPA. El programa TASC llevó a cabo una Evaluación de Necesidades de Asistencia Técnica (TANA) para la comunidad. La TANA ayudó a la EPA y a la comunidad a comprender mejor las necesidades actuales de asistencia técnica de la comunidad del sitio TIAA con relación a la limpieza del sitio.

TASC mantuvo conversaciones para desarrollar la TANA con los miembros de la comunidad y otras partes interesadas desde octubre hasta noviembre de 2017. Los participantes compartieron varias inquietudes relacionadas con las posibles necesidades de asistencia técnica de la comunidad. La principal inquietud que plantearon los participantes fue que la conciencia pública y la comprensión del sitio Superfund y el proceso de limpieza se limiten. Los participantes brindaron posibles explicaciones de por qué la conciencia y la comprensión pueden ser bajas en el sitio. También ofrecieron posibles soluciones para aumentar y mejorar el compromiso y la conciencia pública.

El 28 de marzo de 2018, TASC organizó una reunión de priorización de la TANA con los participantes en Tucson, Arizona. En la reunión, se identificaron y priorizaron las principales necesidades, que son las siguientes:

• Proporcionar hojas informativas y talleres/presentaciones en persona sobre temas de Superfund. Las hojas informativas deben estar en inglés y español claro, e incluir elementos visuales y mapas.

• Coordinar y organizar conferencias telefónicas trimestrales planificadas periódicamente con los miembros de la comunidad para alentar la interacción entre la comunidad y la agencia, y seguir reuniendo información sobre las necesidades de la comunidad.

• Brindar soporte adicional para la reunión a la Junta Asesora Comunitaria Unificada (UCAB), centrándose en la posible renovación y las actualizaciones del instrumento constitutivo de la UCAB, la estructura de la reunión, los métodos de extensión (incluido el sitio web) y la membresía. Esto podría incluir soporte de lenguaje claro para las presentaciones técnicas compartidas por los consultores, de modo que la información se pueda difundir más fácilmente al público en general.

Para ver el informe completo, visite el sitio web en: www.epa.gov/superfund/tucsonairport
O bien, visite el Depósito de información. Consulte la página 6 para obtener más información.

Junta Asesora Comunitaria Unificada

Para brindar a los miembros de la comunidad la oportunidad de obtener información sobre el proceso de limpieza y compartir las perspectivas locales sobre la limpieza, se formó una Junta Asesora Comunitaria Unificada (UCAB) en 1995. La reunión está abierta al público.

La UCAB se reúne el tercer miércoles de enero, abril, julio y octubre. Las reuniones comienzan a las 5:45 p. m. en:

El Pueblo Senior Center
101 W. Irvington Road,
Tucson, AZ 85706
Comisión de servicio
Sanción por uso privado, $300

Solicitud de servicio de dirección

Actualización de la limpieza del sitio Superfund
Tucson International Airport Area

Para obtener más información también puede llamar a la línea directa gratuita de Superfund de la EPA y dejar un mensaje que se enviará al personal de la EPA mencionado anteriormente. El número de la línea directa es 1-800-231-3075.

Enlaces web
Para obtener información sobre el sitio Superfund Tucson International Airport y ver los documentos del sitio, visite:
www.epa.gov/superfund/tucsonairport
Para obtener información sobre el sitio, visite:
www.epa.gov/superfund/superfund

Si tiene preguntas o comentarios con respecto al sitio TIAA, comuníquese con:
Comuníquese con la EPA
Mary Aycock
Gerente de Proyectos de Remediación de la EPA
75 Hawthorne Street,
San Francisco, CA 94105
(415) 972-3289
aycock.mary@epa.gov
Viola Cooper
Coordinadora de Participación Comunitaria de la EPA
75 Hawthorne Street,
San Francisco, CA 94105
(415) 972-3243
cooper.viola@epa.gov

Versión en español adjunto

EPA
EPA de EE. UU.
N.º de permiso G-35

Impreso en papel reciclado/reciclable (un 30 % de material posconsumo)
UCAB Meeting
July 18, 2018
Air Force Plant 44
Performance Based Remediation
Groundwater Treatment Plant Performance

Presented by:
URS AFP44 OT012 PM: John Kim
AFP44 Groundwater Treatment Plant (GWTP)
GWTP Operation Summary

Since the time the GWTP started operations in April 1987:

- Over 31.5 billion gallons of water have been treated
- Over 25.1 thousand pounds of volatile organic compounds (mainly trichloroethene) have been removed
- Over 92 pounds of 1,4-dioxane have been removed since startup of the GWTP advance oxidation process system in September 2009
AFP44 GWTP Run Time Percentages

Bad Hydrogen Peroxide
Issues with Oxygen Generator
More Issues Oxygen Generator
New Oxygen Generator Installed on 2/22/18

Percent Run Time

GWTP Run Time Summary

April through June 2018 - 2,184 hours

- Up time 2091 hours (96%)
- Down time 93 hours (4%)

Sources associated with shut-down

- 4-3 to 4-6 – Down 65 hours; Peroxide feed pump failure
- 4-23 to 4-24 – Down 24 hours; Oxygen generator warranty repairs to address oil leak
- 5-2 to 5-2 – Down 2 hours; Routine maintenance on rotameter
- 6-2 to 6-2 – Down 2 hours; Entire plant power shutdown due to TEP main transmission line switch over

Corrective Action

- Further improvements to treatment system planned upon receipt of additional funding FY 2019
Questions?
Tucson International Airport Area Superfund Site
Airport Property Update
July 18, 2018
Two Active Remedies

1. Shallow Groundwater Zone
   - Groundwater Extraction and Treatment System

2. Soils
   - Soil Vapor Extraction System
Groundwater Extraction and Treatment System

- 3.2 pounds per month
- 72 gallons per minute

Soil Vapor Extraction System

- 0.5 pounds per month
- 336 cubic feet per minute
Upcoming Activities

Site Tour

- Thursday October 4, 2018
- Meet on the south side of the Three Hangars Building at 10 AM
- Three Hangars Building address: 850 E. Teton Road, Tucson, AZ
Distribution Sampling for TCE & 1,4 Dioxane
TARP Treatment Process Diagrams
## AOP Influent @TA-030A

### 2nd Quarter, 2018

<table>
<thead>
<tr>
<th></th>
<th>AOP Influent @TA-030A</th>
<th>AOP Effluent @TA-050T</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCE</td>
<td>11.58 ppb</td>
<td>TCE</td>
</tr>
<tr>
<td></td>
<td>1.26 ppb</td>
<td>1,4-Dioxane</td>
</tr>
<tr>
<td>1,4-Dioxane</td>
<td></td>
<td>*0.11</td>
</tr>
</tbody>
</table>

**NOTE:** The MCL for TCE is **5.0 ppb** and the health advisory level for 1,4-Dioxane is **0.35 ppb**. TARP Consent Decree requires the TCE standard to be **1.5 ppb**.

* The following detects for 1,4-dioxane occurred during the 2nd Quarter: May 15 (0.10 ppb), May 22 (0.23 ppb), June 12 (0.10 ppb), and June 19 (0.13 ppb).
## TARP Air Stripping Towers in Operation

### 2nd Quarter, 2018

<table>
<thead>
<tr>
<th>Stripping Tower Influent @ TP-010A</th>
<th>Stripping Tower Effluent @ TP-021T</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCE</td>
<td>TCE</td>
</tr>
<tr>
<td>&lt;0.50</td>
<td>&lt;0.50</td>
</tr>
<tr>
<td>1,4-Dioxane</td>
<td>1,4-Dioxane</td>
</tr>
<tr>
<td>&lt;0.10</td>
<td>&lt;0.10</td>
</tr>
</tbody>
</table>

During the second quarter of 2018, the average 1,4-Dioxane concentration at SP-830 (Point of Entry to the Distribution System) was **<0.10 ppb**.

**NOTE:** The MCL for TCE is **5.0 ppb** and the health advisory level for 1,4-Dioxane is **0.35 ppb**. TARP Consent Decree requires the TCE standard to be **1.5 ppb**.
# TARP Operations

## 2nd Quarter, 2018

<table>
<thead>
<tr>
<th>Month</th>
<th>Volume of Water Treated</th>
<th>Pounds of TCE Removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>175.800 mg</td>
<td>17</td>
</tr>
<tr>
<td>May</td>
<td>178.173 mg</td>
<td>18</td>
</tr>
<tr>
<td>June</td>
<td>197.141 mg</td>
<td>17</td>
</tr>
</tbody>
</table>
April 2018 Total Well Production Rate Versus Treatment Plant Production Rate
(Millions of Gallons Per Day - MGD)

Days - April 2018
May 2018 Well Production Rate Versus Treatment Plant Production Rate
(Millions of Gallons Per Day - MGD)
June 2018 Total Well Production Rate Versus Treatment Plant Production Rate
(Millions of Gallons Per Day - MGD)

TARP Well Flows
TARP Plant Flows

Days - June 2018
Well construction is set to begin at R-008B in 1-2 weeks. Once completed, well will need to be purged for water quality testing. Portable air stripper will need to be deployed to site.

Construction to install De-Sander units at AOP Plant is also set to begin in 1-2 weeks.

Two additional sampling points have been installed in the proximity of the NWF and SWF respectively in order to further demonstrate water quality. These sampling stations will be sampled quarterly for TCE, 1,4-dioxane and PFOA/PFOS.
1,4 Dioxane & TCE Water Quality Sample Points Results

July 2018

<table>
<thead>
<tr>
<th>Sample</th>
<th>1,4 Dioxane</th>
<th>TCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP-860</td>
<td>Non-detectable</td>
<td>Non-detectable</td>
</tr>
<tr>
<td>SP-930</td>
<td>Non-detectable</td>
<td>Non-detectable</td>
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<td>SP-974</td>
<td>Non-detectable</td>
<td>Non-detectable</td>
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<tr>
<td>SPV-1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>SPV-2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

The current analytical methods utilized by Tucson Water has a minimum reporting limit for 1,4 Dioxane of 0.1 ppb for TCE the limit is 0.5 ppb

**LEGEND**
- Water Quality Sample Point (SP)
- Water Quality Sample Point (SPV)
- Water Service Area (A Zone)
- Remediation Plume

TARP Facility

Santa Cruz Lane Reservoir

Clearwater System

SPV-2

SP-860

SP-930

SP-974

Tucson International Airport
- Developed Pipe Study schedule.
- Non-Disclosure Agreement between the U of A and Tucson Water has been signed and executed.
- Draft Study Plan has been sent to U of A for review/comment.
- Right of Entry (ROE) has been approved and finalized
- Currently seeking to utilize Manor Baptist church as a pilot site.
Water Pipe Sampling & Analysis
Progress Notes

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start Date</th>
<th>Finish Date</th>
<th>Duration</th>
<th>Notes</th>
</tr>
</thead>
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<tr>
<td>Run/Walk Meetings</td>
<td>1/15/18</td>
<td>1/17/18</td>
<td>2 days</td>
<td>Thursday 1/15/18, Friday 1/16/18, Tuesday 1/16/18, Thursday 1/18/18</td>
</tr>
<tr>
<td>14</td>
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<td>3 days</td>
<td>1/18/18</td>
<td>3 days</td>
<td></td>
</tr>
</tbody>
</table>
Tucson Water is set to implement routine sampling of PFOA/PFOS at the Combined Entry-Point-to-the Distribution System (CEPDS), TARP Treatment Plant (AOP) and well-field.

- Monthly Sampling: CEPDS and AOP (influent and effluent)
- Quarterly Sampling: All 9 R-wells and sentinel monitoring wells (4)
- Semi-annual Sampling: monitoring wells located up-gradient of the NWF (4) and SWF (2)
- June 28, 2018 PFOA/PFOS result at SP-830 <2.5 ppt
4/30/18: Tour - Sunnyside H.S. / AOP
5/7/18: Presentation – Tucson Indian Center Staff
5/16/18: Presentation - OLLI
5/29/18: Presentation – KIWANIS
6/5/18: Tour – Tucson Water STEM Academy / AOP
6/7/18: Presentation – Sunnyside HeadStart
6/14/18: Presentation – Pima County STEM Academy
6/21/18: Presentation – Tucson Indian Center Leadership Academy
7/10/18: Presentation – Tucson Park West HOA
7/11/18: Tour – UNESCO Documentary / AOP
May 2018: Arizona Bilingual – History of Contamination
June 2018: Arizona Bilingual – TARP & AOP Treatment Process
TARP Plume - 2017
TCE Removal

The TARP system has removed approximately 95 pounds of TCE from the aquifer during the first six months of 2018.

The TARP system has removed approximately 5,645 pounds of TCE from the aquifer during the 285 months (23.75 years) it has been in operation (since system start up in September 1994).

The TARP system has removed approximately 105.6 pounds of 1,4-dioxane from the aquifer during the 53 months (4.41 years) it has been in operation (since system start up in February, 2014).

The average monthly TCE removal over the lifetime of the TARP system has been approximately 20 pounds per month.
Questions?
Oral History Interviews
Oral history interviews continue...
I have five interviewees that have not set their interview date.
I have two slots that have not been filled.
New Resource Page

https://voicesunheard.sites.arizona.edu/content/12
Voices Unheard Cafecito
Questions or Comments

Denise Moreno Ramirez
Phone: (520) 626-9049
E-mail: dmoreno@email.arizona.edu