ALBUQUERQUE BERNALILLO COUNTY
WATER UTILITY AUTHORITY MEETING
Wednesday, March 21, 2018, 5:07 p.m.

VINCENT E. GRIEGO CHAMBERS
ALBUQUERQUE-BERNALILLO COUNTY GOVERNMENT CENTER
ALBUQUERQUE, NEW MEXICO 87102

A P P E A R A N C E S

COUNCILOR TRUDY JONES, Chair

COMMISSIONER DEBBIE O'MALLEY, Vice Chair (excused)

COUNCILOR PAT DAVIS, Member

COUNCILOR KLARISSA J. PENA, Member

COMMISSIONER STEVEN MICHAEL QUEZADA, Member (excused)

COMMISSIONER LONNIE C. TALBERT, Member (telephonic)

MAYOR TIMOTHY M. KELLER, Member (excused)

PABLO RAEL, Trustee (excused)

COMMISSIONER MAGGIE HART STEBBINS, Alternate

SARITA NAIR, Alternate

BEFORE: KIM KAY SHOLLENBARGER, RPR, CCR #236
Paul Baca Professional Court Reporters
500 4th Street, Northwest, Suite 105
Albuquerque, New Mexico 87102

CHAIRWOMAN JONES: Good evening, ladies and gentlemen. Let's call this meeting to order. Commissioner Quezada is excused and Commissioner Hart Stebbins will be an alternate. Commissioner Talbert will be participating by telephone. All other members are or will be present.

Let's start with a moment of silence, then the Pledge of Allegiance led by Commissioner Hart Stebbins.

(Invocation/Pledge of Allegiance)

CHAIRWOMAN JONES: Thank you. And thank you all for being here this evening. It looks like we have a really good crowd.

So I would like to make one change in the agenda. We will be moving Item 10A to the first agenda item this evening. This is a Water Report by Kirtland Air Force Base. It's an update of the Water Report. So we would like to ask the presenters to come forward and give us your information.

Please go ahead. Good evening.

MR. CORRELL: Good evening. I'm Mark Correll. For those who don't know me, I'm the Deputy Assistant Secretary of the Air Force for Environment, Safety and Infrastructure, deeply involved in the Kirtland Bulk Fuels Cleanup for many years now.

I just want to take a brief moment this evening to take the opportunity to let you know that we're making some minor tweaks or adjustments from the Air Force's perspective of how we oversee the cleanup.

Two things I wanted to advise you of tonight. First, there's been some concern in the community and the stakeholders in the past of, who is the single voice of the Air Force when we're talking about the Kirtland Bulk Fuels Cleanup and that hasn't always been as clear to everyone as it probably needed to be and could create some confusion in the community and with our stakeholders.

So tonight I'd like to let you know that I have worked with our Air Force Civil Engineer Center and the 377th Air Base Wing senior leadership and we'll let you know that our long-serving, highly qualified expert, Ms. Kate Lynnes, who lives here and works here on this project, will be the single voice of the Air Force with regard to the cleanup. I don't want you to think that changes anything dramatically in terms of how we're doing anything or what we're doing, but we want to make it clear who's speaking for the Air Force. The Air Force Civil Engineer Center will continue in its role of doing the

technical work associated with the cleanup, as well as interacting with our contractors and the New Mexico Environmental Department.

The second thing I wanted to announce tonight was that we're going to make a change in how we do our public affairs work on the cleanup. In the past the lead has been our Public Affairs Office from the Air Force Civil Engineer's Center in San Antonio. We're going to now make that the Public Affairs Office of the 377th Air Base Wing here at Kirtland. We'll have a dedicated public affairs person in the wing assigned to Ms. Lynnes to ensure that we are communicating directly to the community and stakeholders on the cleanup with folks who are in town, understand the dynamics of what's going on. The Civil Engineer Center will continue to provide PA reachback support to the folks here at Kirtland, but we will resource them to ensure that we have a good public affairs presence here and are able to communicate with everyone involved.

That's all I wanted to give you this evening and I thank you for your time.

CHAIRWOMAN JONES: Thank you. Good evening.

MR. MCQUILLAN: Good evening, Madam Chair. Let me scroll over to my slides.

I am Dennis McQuillan. I'm the Chief Scientist with the New Mexico Environment Department. And I had been heavily involved in this for several years and then took a sabbatical to work on a little mishap that happened up in Colorado with the mine that polluted water in New Mexico, and I'm back on the project as the lead as of the first week of January of this year. And we're really pleased to be invited here tonight to explain to you the progress and our vision for 2018 as per our strategic plan, which has been issued as a draft for public comment. Comments are due on April 6th.

So I don't know if the slide -- it kind of disappeared there, for the audience. But the cover picture, for those of you who have been on our field trips, shows the geologic formation that comprises the aquifer below the Air Force Base. It's a course sand and gravel and this is exposed in the lower Tijeras Arroyo. We'd be glad to conduct another field trip if anybody would like to see that.

Can you get that to work? The second slide is the outline of our --

CHAIRWOMAN JONES: Why don't you give us just a second, see if we can get this working.

MR. MCQUILLAN: Sure, sure.

CHAIRWOMAN JONES: Thank you.

MR. MCQUILLAN: So this slide summarizes our strategic plan for 2018. This is not a regulatory document. We have all the regulatory documents posted on our web site with all the engineering diagrams and requirements and the data. This is our vision, NMED's vision, for what we want to accomplish in 2018. The goal is the same.

This is the fourth strategic plan that we have put out. I've got the first three for 2015, '16 and '17 here, and we have a few extra copies if anybody would like to see it. There has been no substantial change in our strategy. We've restructured some things, but the goal is the same, to protect the aquifer and to protect the drinking water supply wells, that is our primary goal.

The first strategy is the same, to continue implement robust monitoring and wellhead protection of the drinking water wells that are in the area of the fuel spill.

Strategy number two had not been in the previous strategic plans, not as a strategy. But it's the same thing that has been mentioned in these strategic plans from the previous three years. We want to look at what the bacteria in the soil and

groundwater are doing and look for opportunities for engineered solutions to enhance the natural attenuation of the biodegradation that they've done.

These are the strategic plans for 2015, '16 and '17. I put blue tabs on these plans where we made reference to the natural degradation in our efforts to wish to enhance what the bacteria are doing. Basically, to enable them to do a better job of biodegrading the pollution. Natural attenuation existed decades before the plume was discovered in 1999 and it's an industry standard to monitor what they're doing, and then to look for opportunities for intervention with engineering technology to allow the bacteria to do a better job of that. And if anybody would like to see these, I have all the tabbed references. So we've pulled out this strategy on enabling the bacteria to do a better job from these other plans and elevated it to be a new strategy in the 2018 plan.

That leads into strategy number three, which is to continue to deploy multiple engineering solutions, technologies, simultaneously and sequentially. And I'll show you the history of what we've done as interim corrective measures to clean up the soil and the groundwater and we've made

substantial progress, as I'll show you in just a minute, on the interim measures and cleaning up the soil, in particular in the LNAPL, the light non-aqueous phase liquid.

This is an abbreviated presentation for what I will be presenting tomorrow night at our public meeting, we'll have more time.

And the fourth strategy is the same as it's been previously, we want to meet or exceed all requirements for providing public outreach in information and involvement.

So I'll go through very briefly the various strategies.

Strategy number one is with regard to the monitoring. We have no detections of EDB in the sentinel wells or in the drinking water wells. That's a very good thing. We've established a cone of depression, which is basically a lowering of the water table in the area where the extraction wells are. We have all four extraction wells running now, as of February this year. And we've just reconvened the modeling working group to do a rigorous capture zone analysis. This is different from the cone of depression. This will be an analysis that looks at what area the plume is being captured by the

extraction wells. And I want to thank the Water Utility for hosting the kickoff meeting here in Albuquerque in January, and this is going to launch a process where there's going to be various models being run and peer review and look at exactly what the capture zone is for the four extraction wells that are pumping.

Now, as you all know the water table has been rising and we are looking at what effects that water table rise is going to have on the direction the groundwater flows and the direction the contaminants are migrating in. There are data gaps that have been created by this rising water table. Wells that had previously been screened across the water table are now flooded, and so we don't have adequate monitoring on that uppermost part of the aquifer. And Scott is going to talk to you a little bit later tonight about what the Air Force is going to do. There's going to be 18 new monitoring points put in and we're going to be looking at converting some previously dried soil vapor wells into groundwater monitoring wells.

CHAIRWOMAN JONES: Excuse me just a second. Will this bother you, if we ask questions, so we don't forget what we want to ask?

MR. MCQUILLAN: No.

CHAIRWOMAN JONES: Thank you, sir.

COUNCILOR DAVIS: Mr. McQuillan, I know we'll follow this up later, but can you just tell me a little bit. I understand that you say there's no detection of EDB in the drinking water wells or the sentinel wells, but I also know that we've talked, and you just mentioned, 85 percent of the wells we have had been drowned out. And so is it, we're not detecting because it's not there or not detecting it because we don't have the sufficient monitoring wells and capability to do that work? This sounds like a very different strategy to me than what we did earlier when we said we need to drill new wells in order to get better data.

MR. MCQUILLAN: Well, that's a really good question, Madam Chair. The drinking water wells are monitored on a monthly basis. And when I say there's no detections in those drinking water wells that's based on that data. The sentinel wells are actually monitoring wells that are not used for drinking, and they're located between the contamination plume in the drinking water wells. Some of those have been flooded and we need to replace them so we have really good -- now, the wells that were flooded are still

useful. So instead of monitoring the water table zone, they're now monitoring a deeper zone within the aquifer. So they're still providing some data, but we need to replace that monitoring capability across the water table because that's what the industry standard is in looking at various depths within the groundwater.

Did that answer your question, sir?

COUNCILOR DAVIS: For now. I think we'll come back to it.

MR. MCQUILLAN: Sure. So the Air Force and NMED remain committed to keeping contamination out of the drinking water wells. That was a commitment that was made several years ago and we are steadfast in making sure that contamination does not happen.

The next slide shows these 18 new monitoring points. These are the green squares. You can see the spread that we have around the plume. Scott is going to be talking about that a little bit later. I won't spend a lot of time on the slides since Scott will be talking about it.

We're also going to be coring the area where the oil exists in the soil and the groundwater. This is another data gap and it will be covered in the final strategic plan, but we're going to talk more

tomorrow night about how that oil exists in the subsurface. It exists as -- there's some parts that don't drain into wells, it's trapped in the soil by capillary forces and it provides a long-term source of dissolved phase contamination. So this is a pretty significant data gap that also will be filled in 2018.

So strategy two involves determining what the bacteria are doing in the way of biodegrading these contaminants in looking for ways where we can have engineering interventions to enable them to do a better job. And so we know that we have hydrocarbon oxidation in the soil and groundwater. This is a very common degradation reaction, it occurs all over the world. We're also seeing within the area where the ethylene dibromide is commingled with the petroleum, it is undergoing the process called reductive debromination. Unfortunately it only occurs in that area of commingling and then it moves out beyond that area. And we have evidence that the EDB is undergoing hydrolysis, which is a chemical reaction where the EDB interacts with the water and gets degraded. So these are processes that we've identified and we're looking particularly at the oxidation and the reductive debromination in ways

that we can help the bacteria do a better job.

The next slide gets to strategy three in deploying multiple engineering solutions to clean this up. The yellow symbols there are things that have been done already in the past and are completed or are ongoing. The removal, excavation of contaminated soil, the bioslurping which recovered approximately a quarter million gallons of oil, of LNAPL, and that was quite successful. We had 12 years of soil vapor extraction where we vacuumed flumes -- of fuel out of the soil. And for two-and-three-quarter years we've had the groundwater extraction system, which is over at the distal end of the plume, closest to the Water Utility Authority drinking water wells. The red symbols are engineering solutions that will be deployed as pilot tests this year, in 2018. Enhanced in-situ anaerobic groundwater biodegradation, airlift biodegradation, bioventing, which is a logical follow-up, and I'll explain these in just a minute. But these all involve stimulating, augmenting, enhancing the bacteria activity that's going on in the site. We are not proposing to walk away from this and do nothing and just let nature take its toll -- take its course. We are looking at ways to facilitate the

bacteria in the natural processes that they've been working under and have them do a better job of degrading the contamination. This is a common thing that's done in this industry.

The next slide depicts the anaerobic biodegradation pilot test. This is a really promising project. We had laboratory tests where we took groundwater from the site and put in various amendments into them, like lactate and nutrients and actually proprietary bacteria and based this field study on the results of laboratory tests. So the Air Force -- and this is a project that's underway in generating data. We're going to be injecting amendments into the groundwater that's contaminated in seeing how the native bacteria respond to that. We have an injection well, some monitoring wells and extraction wells and we're setting up a cell where the groundwater will be treated. This will ultimately lead to the introduction of proprietary bacteria. You see on the next slide dehalococcoides, which is a naturally-occurring bacteria that has been shown to biodegrade ethylene dibromide. So this is some really cool science stuff going on here and we're all watching this very, very closely. The biostimulation was completed, now they're in the

monitoring of that. The augmentation with proprietary bacteria will probably commence in May or June, and then they'll be monitoring that afterwards. We're hoping that one of these or more of these technologies that are being tested at the field scale, the pilot scale, will be promising to scale up to cleaning up the plume. The much larger plume.

Bioventing is very simple. We know that the bacteria need oxygen to biodegrade the fuel contamination. We had 12 years of vacuuming. Now we're going to very gently blow oxygen and moisture into the soil to enable the soil bacteria to continue biodegrading the fuel and hopefully do it faster. The 12 years of vacuum extraction dehydrated the bacteria, they need some moisture and we know they need oxygen and this is a logical follow-up to the 12 years of vacuum extraction.

Strategy four describes -- and I think you've seen versions of this in previous years, the schedule for public outreach. The Air Force and NMED welcome any opportunities, invitations from anybody basically to come out and present what we're doing. And here's the timeline. This goes all the way back to day one when the plume was discovered.

I wanted to point out what's called the RCRA

Facility Investigation, that goes all the way into 2019. And this hasn't been made widely public yet, but we're going to have a Phase I that concludes with all the data through December of 2015, and then a Phase II that will include all the work that's being done from this point forward in the last year -- two years, as a Phase II RFI, or RCRA Facility Investigation Report. So the investigation is not over. Unfortunately we had the rising water table created data gaps, it's going to delay us a little bit in getting to the next step, which is the Corrective Measures Evaluation, which will require a public hearing and that process will begin the selection of the final remedy for the site.

But in the meantime, you can see the interim corrective actions that are underway for 2018. These engineered solutions are being put in place. The monitoring is ongoing and our commitment to protect the drinking water wells of the VA, the Air Force Base, the VA Hospital, the Air Force Base and Water Utility remain steadfast.

Thank you.

CHAIRWOMAN JONES: Thank you, sir. Commissioner Hart Stebbins, you have some questions?

COMMISSIONER HART STEBBINS: I do have some

questions, yes. Thank you, Madam Chair.

Thank you, Dennis, for being here. Really appreciate your presentation tonight. I have a question. You know, clearly there's a change in the focus on natural attenuation. I mean, I almost feel like we're back to 2009 where CH2M Hill was recommending that as the only strategy. So I'm curious, what evidence is bringing you back to that as a solution?

MR. MCQUILLAN: I'm really glad, Madam Chair and Commissioner Stebbins, you asked that question. We're not proposing natural attenuation as a corrective action at this point. We've been monitoring natural attenuation for many, many years, almost two decades, because this is an industry standard. We want to know what the bacteria are doing to the plume. And we have many, many years of data and I'll present some of that tomorrow night, on the degradation products, the reactions that are occurring. And this is going to spin us, hopefully springboard us into selecting options for enhanced bioremediation, which is an active engineered remedy that involves taking greater advantage of what the bacteria do naturally. So neither the Air Force nor the Environment Department are proposing monitored

natural attenuation as a remedy. We monitor this as a matter of routine practice. It's an industry standard. And we've been doing this for a long time, so there really is no shift in our strategy or our policy on that.

COMMISSIONER HART STEBBINS: So this is a step in the characterization?

MR. MCQUILLAN: Yes, ma'am. It's been -- we've been monitoring the natural attenuation for a long time looking at the bicarbonate degeneration of iron that's released from the soil, depletion of oxygen and nitrate as the bacteria consume these. Looking at the byproducts and looking at the carbon isotopes as well as they get fractionated by these processes. So we've been monitoring these natural attenuation parameters for a long time.

COMMISSIONER HART STEBBINS: But not as a remedy, but as informing what the final remedy will be.

MR. MCQUILLAN: Yes.

COMMISSIONER HART STEBBINS: Okay.

MR. MCQUILLAN: Thank you.

COMMISSIONER HART STEBBINS: Because on one of your slides you show EDB hydrolysis?

MR. MCQUILLAN: Yes.

COMMISSIONER HART STEBBINS: Can you talk about that a little bit more.

MR. MCQUILLAN: Yes. This is not a biological process, unlike the hydrocarbon oxidation and the reductive debromination. This is a process where the EDB reacts with the water itself, or the hydroxyl ions and the OH and so on, and is actually degraded under a chemical process, not a biological process.

There was a paper that one of our team members presented at the Patel, it's an international conference, a couple of years ago. And I believe he has a journal article on this as well. One of the comments we had from Dr. John Wilson, who's written all these guide books and is the godfather of a lot of this, is that he thought that Murphy's Law sometimes works in our favor. That if anything escaped the pump and treat system, we have half a mile between the plume and your drinking water wells where hydrolysis is active. So it's another level of -- it's certainly not as aggressive as an engineered solution, but it's happening and we want to monitor that and see just how much EDB is degrading. All these processes have been going on for decades, even before we discovered it. And we want to know the

magnitude, the rates. There's a lot of work to be done on that. In particular, we want to know how we can speed these reactions up, if that's possible.

COMMISSIONER HART STEBBINS: So that, again, is not being considered as a final remedy or part of the remediation, it's just a way of measuring what's already taking place?

MR. MCQUILLAN: At this time, right. We can't really talk about the final remedy because we have to have a very robust public hearing after the CME, the Corrective Measures Evaluation.

COMMISSIONER HART STEBBINS: I guess my question is, how long has it been since EDB was present in jet fuel? It's been 35, 40 years?

MR. MCQUILLAN: Madam Chair, Commissioner, 1975 is when it was discontinued.

COMMISSIONER HART STEBBINS: So if that process were having a significant impact we wouldn't see the levels of EDB in our groundwater.

MR. MCQUILLAN: It's clearly not destroying the whole plume, but we have evidence that it's destroying part of it and we want to know exactly how much -- what those reaction rates are and figure this into the whole conceptual site model and ultimately into the final remedy, which will involve hopefully a

lot of bioremediation. You know, these processes that occur naturally with no human intervention, we want to speed those up. The groundwater pump and treat is something that doesn't involve bioremediation, that's just a physical removal. And we've recovered more than 350 million gallons of groundwater, purified it to less than detectable levels and used it either for the golf course or injected it, and that's a lot of water that we've protected.

COMMISSIONER HART STEBBINS: So the enhanced attenuation, has that been tested outside the lab? Has that been tested in the field?

MR. MCQUILLAN: It has, and the -- it hasn't been tested at this depth in the challenging conditions we have here. The airlift is a technology that guidance documents have been written on. We actually have some of the people who wrote those guidance documents working on the team. The Air Force has brought in some of the intellectual firepower. Bioventing is well established. You know, we give those bacteria oxygen in the soil, then we know exactly what to do. Now, the enhanced bioremediation is some cutting-edge stuff and this is a perfect site to do this on. The Air Force got some

research money from some other budget to do this, so we have two of the foremost microbiologists in the world working on this. And we're going to prepare a more detailed discussion of this tomorrow night. And I can tell you, of course I'm a geek scientist, but this stuff is really cool. If this dehalococcoides bacteria, which does not exist at the site -- we have other bacteria that we know dehalogenate compounds, but this one right here has an appetite, if you will, for ethylene dibromide, and that will be injected into the groundwater in about May or June. So stay tuned, we have some really exciting science going on here.

COMMISSIONER HART STEBBINS: That's great. Certainly optimistic that that will contribute to the solution here. Let me ask you a question. Under strategy one you refer to zone capture analysis and I'm not quite sure how that relates to the plume capture model that has been referenced in the Notice of Deficiency. But tell me what the process is, as you see this going forward, for doing a more complete analysis of the capture zone from the pump and treat system.

MR. MCQUILLAN: Sure. And again, thanks for that question. The Air Force has been submitting

capture zone analyses in their quarterly reports, but we don't believe they're robust enough. They provide some level of information. But the EPA, the federal EPA, has put out a guidance document with a six-step process on how to do this correctly. And we just reconvened the model working group. And again, thanks to the Water Utility for hosting that meeting at their office here. And so we're going to have some really high caliber models -- modelers working on this. I know John Sigda, Dr. Sigda with INTERA, is going to be working for the Water Utility. The gentleman who's with EPA will be working on that. And the USGS, US Geological Survey, is involved. And, of course, the Air Force contractors. So there may be multiple models, which is a good thing. We've presented -- you know, we had John present at one of our public meetings. We've had some of the modeler results. So having different modeling codes used is a good thing, and see if they come up with the same results. We're going to try and use the same assumptions for the hydraulic properties and eliminate that as a variable and use the same -- we're going to use the drinking water standard as the -- and to map these things. So to the extent we can be consistent and compare apples to apples, we're

going to do that.

So the next meeting is on April 12th, and the modelers are all going to get together and -- the top priority for this modeling group is to produce models that rigorously conform to the EPA guidelines and using the data from the site, the four extraction wells, which are pumping water level data and make predictions on plume capture. And analysis of how much we're capturing.

COMMISSIONER HART STEBBINS: Well, thank you for that, because that clearly has been a concern for me and I think others at the Water Authority, the difference between the Notice of Deficiency letter on November 16th that was quite detailed about your expectation for the plume capture model. That then in the March -- the recent March 6th letter seemed to sort of back off. I mean, I'm wondering what your thought process or what the Environment Department's process was moving from that November 16th position to March 6th.

MR. MCQUILLAN: Well, the Air Force is committed to producing preliminary modeling results by March 31st, and they will carry those results into the April 12th meeting. We don't want to see a final report from the Air Force until the modeling group

gets a little further along. It's just, we want substantial peer review on this. We want the modelers to talk to each other and share input parameters and do calibration with water level data. We also just got the fourth extraction well up and running in February, and so we need to see how the system responds to that. We can measure the cone of depression. That, as you all know, is different from the capture zone. So we're going to push that back a little bit, because we want a really high quality peer-reviewed product coming from the working group, not just from the Air Force.

COMMISSIONER HART STEBBINS: So that will include input from the Water Authority, the City of Albuquerque, NMED, Air Force?

MR. MCQUILLAN: Yes.

COMMISSIONER HART STEBBINS: The stakeholders in this group. Let me ask you about the wells, because this relates to the capture model, the plume capture model. I know that INTERA's model has assumed that those wells are functioning 24/7, but I saw a document recently that said that they're really operating only about 50 percent of the time. How does that affect the plume capture model that was in the RFI that INTERA has produced?

MR. MCQUILLAN: Well, the new model effort will take that into account, and not just how often they pump it, how many gallons per minute. The well that was just put on line, Extraction Well 239, is pumping about 75 gallons a minute while the others are pumping approximately 150 and it's because it's closer to the source and we don't want to pull things in too fast. The treatment system can handle petroleum hydrocarbons up to a certain point. And we have established in our permits influent limits. The influent cannot exceed 450 benzene, or something has to be done. So the system is really well engineered. It can handle some amount of petroleum, as well as the ethylene dibromide. The effluent limits are the drinking water standards so they're more stringent than stake groundwater standards and drinking water standards. We monitor upstream from the carbon unit, between the two units and the effluent and there's two streams that are operating parallel. So we have really good monitoring on that and safeguards. If we start seeing the contamination rise, that will be closely monitored. There may be wellhead samples taken at 239. But these wells were selected with a lot of peer review in the Water Utility, the City Health Department, the State, the Air Force, USGS.

And we put our best effort forward to put these pins on the map. And there's a lot of modeling support that went into that and we're very grateful of the participation by the Water Utility in that modeling effort and the collaboration in coming up with this interim measure that so far as purified 350 million gallons of groundwater. I think we all should be high-fiving each other right now on this.

COMMISSIONER HART STEBBINS: That is certainly something to celebrate. And I'm sorry, I don't want to take up all of your time. But just on that fourth well, so it is closer to the source area. So if it begins to draw in a significant amount of detects, then what happens? I mean, is it permitted for remediating those chemicals?

MR. MCQUILLAN: They can't exceed 500 micrograms per liter of benzene, because that will make the Air Force a hazardous waste generator, so that's never -- we've established a limit of 450 as a safety factor for going into the treatment plant. Now, if we start -- and we probably will eventually see levels of EDB creep up, we'll probably see some B-tex come in. If the levels start approaching that they'll start pumping the well a few hours per day.

These are great questions, and the modeler

is going to be looking at the extraction wells and how many hours a day they pump, how many gallons per minute they pump. They're going to be looking at the production wells, how much they produce. You know, the complicating factor is because of the exemplary water conservation practices by your customers in the use of river water, that the water table has been rising and the cone of depression up by the Ridgecrest oil field has been filling in. This is fantastic for the sustainability of your aquifer, but it creates complications in data gaps for us. And we know how to fill data gaps and we have some of the top scientists around working on this.

COMMISSIONER HART STEBBINS: Great. And one last question. I know Councilor Davis is waiting. In the Notice of Deficiencies there was a reference to the coring plan. Can you give us an update where you are with that?

MR. MCQUILLAN: Yes. The coring plan was given conditional approval late February, early March. They'll be mobilizing the drill rig some time later this year. And we hope to gain a lot more information about where that LNAPL is, because I think, as you guys know, you're a pretty educated board, you can have LNAPL in the soil which does not

flow into a well and that's trapped there by capillary forces. Like if you have a cup of coffee and you stick an handkerchief in there, that coffee gets sucked up into the napkin, into the handkerchief. But in the cloth. That's capillary forces. So the problem with that residual LNAPL is it provides a long-term source of dissolved phase contamination and that's one of the more prominent data gaps. So the Air Force complied with that requirement in the NOD. And that approval letter is going out -- the Water Utility detective people were copied on that letter. It's posted on the haz waste web site. Some of those coreholes would be completed as groundwater wells to fill data gaps.

COMMISSIONER HART STEBBINS: So in about 2016, I think the technical working group came to consensus about what that coring plan would look like. Is the specifics of that recommendation, are those included in the bid package that has gone out to execute this?

MR. MCQUILLAN: Madam Chair, Commissioner, we had to impose some conditions on that. I don't have the letter in front of me, but we imposed conditions on that approval letter, particularly in the background in doing mineralogoical work and I

think it reflects the best plan forward. On coring in that zone where we expect residual LNAPL, we're going to begin the coring ten feet above where the water was at in 1970, and go down below where it's at today.

COMMISSIONER HART STEBBINS: So from the NMED position your expectation is that the Air Force when it gets a contractor to do this that the contractor be will asked to meet the standards agreed to in 2016 by the technical working group?

MR. MCQUILLAN: I believe so. I mean, let me -- I don't have those recommendations in front of me, but we went back and forth on this. But the other thing to keep in mind is that these are all data-given. They take more than one drilling program to fill the data gaps on the LNAPL and it may take more than one drilling campaign to fill the data gaps in the rising water table. We always have that option. We do some work, get the data and see if it satisfies our needs and we can inquire more on that.

COMMISSIONER HART STEBBINS: And a deadline for that, for the coring work to be done?

MR. MCQUILLAN: Maybe the Air Force can talk more about that.

COMMISSIONER HART STEBBINS: I can ask. I

know they'll be coming up. Again, I've taken up enough time. May I submit additional questions in writing?

MR. MCQUILLAN: Sure.

COMMISSIONER HART STEBBINS: Thank you. Thank you, Madam Chair.

CHAIRWOMAN JONES: Thank you, Commissioner Hart Stebbins. Councilor Davis, do you have some questions?

COUNCILOR DAVIS: Very briefly. Mr. McQuillan, thank you so much for being here, and I do appreciate that. I do not have the technical expertise that Commissioner Hart Stebbins does, but I wanted to follow up on a couple of sort of big picture pieces here and be sure that we can go back and explain to the public, and that I think you-all are prepared to explain to the public, sort of these, because I think this is a pretty dramatic shift in our strategy at least, in the way the proposed plan would allow for redefining sort of what we're looking for here.

It appears concerning on its face that there's nothing in the new plan that directly addresses a continuing active remediation and it seems very much like the big picture starts to be,

and I hear this, that we're moving more towards the passive natural attenuation and monitoring and enhancing those pieces, which have been working. And I think there's early data to suggest, and I support expanding the data and if we get good science out of it, that works. But are we continuing to do pump and treat on the actual source? And what other -- let's start there to be clear. Are we continuing to do pump and treat while the Air Force is examining and the committee is looking at new science?

MR. MCQUILLAN: Absolutely. That will be going on for many years. And I don't think that is -- and maybe because we've abbreviated this plan. We're not moving towards passive remediation. Neither the Air Force or NMED are proposing monitored natural attenuation as a corrective measure.

Strategy three, you can see there's all types of engineered remediation solutions that have been done, that are ongoing, and they're going to be pilot tested this year. So we're very aggressively pursuing active remediation with engineered solutions. Those three options in red will be implemented this year and hopefully one or all three of them will be promising enough that we can develop it at a more elaborate scale.

COUNCILOR DAVIS: And I think I want to go back -- I do want to go back to Commissioner Hart Stebbins' question, because I think it's important to hit at. I think these strategies, and obviously some of the vapor extraction, as you mentioned, sort of starves some of the bacteria. These new strategies that you've been looking at have been enhancing the oxygen and allowing them to do that faster. But the levels that we continue to see or that we originally found are from, quite frankly, from Air Force jet fuel older than me. So the natural strategies haven't been working and it would take, it seems based on the data we see so far, a pretty sophisticated and big change in our strategy overall to address the extent and concerns, especially with the LNAPL. Is NMED confident that this multiple strategy, more natural strategies, will combine to give us a result and an answer more quickly than the strategies we're using now?

MR. MCQUILLAN: Well, Madam Chair, Commissioner, that's a great question. You know, our strategy has been to go out and do these tests at a small scale and see if it works. Some work better than others. And we hope that we do enough of this that by the time we get to the Corrective Measures

Evaluation we'll have enough options on the table that we can put together a final remedy. And we want to take full advantage of these natural processes, that's an industry standard. Bioremediation is a very hot subject right now because it can work under the right conditions. And we have corrective actions, like you mentioned, the pump and treat, that's going to be going on for many years. That's not a biological process. That's a physical. But it's getting the most dangerous part of the EDB, the EDB that's closest to your wells. And the community demanded that of us and the Air Force, and we did it.

Now, in looking at the source area where the highest concentrations are and most of the mass, and so we're attacking this plume with different technologies at different locations simultaneously and sequentially and hopefully all this information is going to inform the process, what the final remedy is going to be.

COUNCILOR DAVIS: And I appreciate that very much, Mr. McQuillan. I think that's right, we do ultimately want to get to that place and I know the timeline -- you know, I think the timeline shouldn't guide our work here. Obviously it's an important checkpoint, but being sure we get it right. I think

the Notice of Deficiency also, in using NMED's words from their March 6th letter, correctly noted that the Notice of Deficiency expressed concern that the permittee's evaluation of contaminant concentration likely overstated the amount of contaminant degradation. And it appears to me that both the Air Force and NMED agree that they now agree on that point. But there are some other places in earlier data that some of the data, it appears the parties had agreed, was perhaps insufficient and that some of that may be guiding this new analysis.

For example, as you noted, hydrolysis is occurring there, but the RCRA Facility Investigation Report -- and I'm just going to reference some of the notes in this, 'included an analysis of' -- 'isotope analysis from 2013 data that NMED and the Air Force later agreed had quality issues and wasn't usable data.' And so, can we -- does NMED have a different data set by which we can measure progress now or are we essentially starting over again on data? Do we have the adequate number -- right data to determine whether these new processes are helping, hindering or just keeping us in status quo?

MR. MCQUILLAN: Yes. And again, I'm glad you asked that question. Both the 2013 isotope data

and the slug test data were determined by NMED to be unreliable. Now we've included that -- we reference these for the sake of transparency. We don't want to be accused of hiding something because it wasn't done right. It's just part of the administrative record. And it's unfortunate that these tests were not done properly.

With regard to the isotope data, there was a new set of data that was done in 2015 and this is the data set that Dr. Vangross is using to draw the conclusions about the hydrolysis that's referenced in his paper. The slug tests were being replaced by other tests. And for the sake of transparency we're going to acknowledge that these data exist, but we have not changed our position at NMED that these data were unreliable to begin with.

COUNCILOR DAVIS: Thank you, Mr. McQuillan. Madam Chair, one final question to follow up. You're here and your NMED's chief scientist, I think that says a lot about your credentials and you've shown that tonight with us and through this work. But this project, my understanding, has been moved out of the old hazardous waste bureau to the secretary's office to be managed there. Is that correct?

MR. MCQUILLAN: That's a really interesting

question. We have -- the haz waste bureau -- the permit has been issued by the haz waste bureau. The groundwater bureau has issued the groundwater permit for the injection well and I am working closely with the groundwater bureau and haz waste bureau and the office of secretary to coordinate all this. So we have multiple jurisdictions within the Environment Department on that.

COUNCILOR DAVIS: I just want to be certain that the original, sort of technical experts, the scientists, in particular in hazardous waste bureau, that were doing this analysis and work with our staff and with the Air Force along the way, do they still have daily access to the data and the plan and the planning meetings in developing this or is this a project that's now led sort of in your office without their daily sort of interaction that they used to have?

MR. MCQUILLAN: We have a technical team that consists of myself, a technical person with the haz waste bureau, a technical person with the groundwater bureau, and a technical person with the drinking water bureau, and a technical person with the petroleum storage bureau because they deal with these contaminants on a day-to-day to basis. So

Secretary Tongate has assembled this interdisciplinary team of mostly senior people and we call them the drinking water people. When we need to we're going to be revisiting the Source Water Protection Plan for the VA Hospital, getting the dust off that and updating that and making sure they're all confident that that well that serves the hospital would be protected.

So in the data out there there's just reams of data that's posted on our web site. If you want to get information overload just go to the haz waste web site and you can access all the reports and the maps and the data tables and work plans and approval letters.

COUNCILOR DAVIS: Thank you, Mr. McQuillan. And just to characterize, I think the concern is -- and I appreciate that. I think the concern, and I want to pass it off to my colleague if it's okay with the Chair, but the concern I think is that the new plan seems -- as you said, it's more simplified. And I think the concern is, we were doing really well in 2016/'17 and by adding some opportunities to look at new science, that seems great. But it seems more that that should be an expanded plan, not a more simplified one. And I think the concern from the

community will be, that we just got on the right track.

How do we ensure that the new plan continues to require all the things that we had finally gotten to that were showing progress and working and still allows us for the external extra data and analysis and new science that might one day get better. I think it's concerning that it appears that we're pulling back from the progress we made in order to allow for new things instead of expanding and being sure that we're continuing on the good path while we're looking for new options to maybe speed that up. How do we address that concern, that this might be too oversimplified?

MR. MCQUILLAN: Well, the -- and this is one thing we're hoping to get, and I'm sure we will get comments from the public on it. You know, the 2015 plan was 24 pages long. 2016 was 30 pages long. 2017 was 40 pages long. I heard comments that this is a little intimidating. It's not a quick read. But what has not changed, sir, Madam Chair, is all the data, all the work plans, the engineering specifications, the laboratory data, the drinking water data, all that is still out there. It's just that we've put together a more abbreviated summary of

that in the form of a PowerPoint. But is a quick read. And I know my colleague Dave McCoy likes the 40-page report. I've heard comments that this is a little too intimidating. But for people that want to get geeked out on the science, go to the haz waste bureau web site, you can download tons and tons of data and be in partial differential heaven.

COUNCILOR DAVIS: Mr. McQuillan, each of these have had a PowerPoint. I think the plan should get -- the data in the plan should get bigger as we get along because we should be developing information, I think, yes. But at the same time we say we have more data and we're simplifying it, we also hear that, well, the data we had, some of it wasn't very good, it had big gaps in it and we're looking for opportunities to find better data. It seems to me that the plan would be more robust in order to fill those gaps more quickly to give us quicker data than for us to simplify the plan only under the things and say, well, the data is there, but it's -- as we just heard, some was unreliable two years later and others -- it just is concerning, I think, that we get to this place where we were making extensive progress, and I acknowledge and appreciate the advances in where we might get to. But on its

fact its appears that NMED is allowing the Air Force to take credit and claim that they have made more progress than made and we have data to support, while allowing a shift in strategy that would be more consistent with more progress than we are able to demonstrate, that's the real concern. And how we might get back to a place where we continue the work that's being done and the data that we have and fill in the gaps from there instead of just prioritizing new science, I think is the real question about whether this is the right strategy or whether this is perhaps an enhancement to an already existing well-funded or well-executed strategy.

Thank you, Madam Chair.

CHAIRWOMAN JONES: Thank you. I believe CAO Nair has a question.

MS. NAIR: Thank you, Madam Chair. Thank you, Mr. McQuillan. I really appreciate the agility that both my colleagues and you show in navigating this technical detail. But just in case there's anyone who sort of may have lost the thread somewhere around here, can you give us just a few plain language statements about the next things that are going to happen and when the public might expect to have things to review and opportunities to

participate.

MR. MCQUILLAN: Thank you for that question. We're having a public meeting tomorrow night at the African American Performing Arts Center. We're going to get a little more into the weeds on some of these fabulous issues that you've raised. And we're going to talk about how LNAPL, the oil exists in the subsurface. We're going to have other presenters talking about the engineered pilot tests that are going to be put in place this year, like the institute bioremediation. And there's also going to be a field trip, an open house on -- I'm stealing your thunder.

MS. LYNNES: We might delay it because of the budget. So we're looking at probably having it in April because we're not sure if we're going to have a Congressional budget on Saturday. We might have a shutdown. We don't want people showing up and we can't let them in. So we're going to schedule it as soon as we can in April.

MR. MCQUILLAN: So either Saturday, or it sounds like April. You guys should really go see this treatment system. Even if you saw it two years ago, it's like doubled in size. This is the most sophisticated groundwater treatment system in the

State of New Mexico and it's well worth seeing. The commitment the Air Force has made. You know, there are no detectable contaminants coming out of that treatment unit. And it's just fabulously engineered. It's working great. And I want to give you my personal assurance that even though we've come up with this more simplified summary of all the plans, the regulatory work plans are not being simplified. We are deep in the weeds on that. And we go back and forth and we hold the Air Force's feet to the fire. And scientists and engineers don't always agree. And regulators and regulated entities don't always agree, but we try to find the middle ground and move the project forward.

CHAIRWOMAN JONES: Thank you. Commissioner Hart Stebbins, you have another question.

COMMISSIONER HART STEBBINS: Thank you, Madam Chair. Dennis, at our last meeting there was a lot of discussion -- when you were here last in 2017, in November, there was a lot of talk about a consensus among all the stakeholders about issues that needed to be addressed in the RFI, and there was a response that a lot of that will be taken up in the addendum. But it seems to me there used to be something on your timeline about the addendum and I

don't see that anymore. What is the time frame or what do you expect in terms of delivery?

MR. MCQUILLAN: Thank you for that question. The RFI is going to be resubmitted to the Environment Department as a Phase I RFI, and that will cover all the data in the moratoria investigation through the end of December of 2015. We will act upon that. And I have been meeting NMED -- the team at NMED has been looking at the issues. Again, we have some differences of opinion and agreements. We're going to acknowledge some of the data sets that are no good and not consider them in the analysis. But there's a lot of good data. The Phase II RFI will be submitted after the additional work is done to do the LNAPL coring, fill in the data gaps, the modeling, the plume capture analysis.

As you can see on this figure, we've projected the Phase II RFI, and we're going to break this up into Phase I and Phase II for future reference. That will probably take us through late 2019 in order to get all that data. It's unfortunate, but because of the rising water table and the data gaps have to be filled, the Phase II RFI will probably be coming around in late -- the fall or the winter of 2019. At that point after that's

approved they can proceed to the Corrective Measures Evaluation, which would trigger a very robust public involvement process and ultimately the selection of the final remedy.

COMMISSIONER HART STEBBINS: Great. Final question, I promise. Risk assessment. So I know that was discussed quite a bit last year. I understand it was submitted to the State in July of 2017. I have also heard that the Department of Health determined that it was flawed and it is now with NMED. Can you tell me what is happening at the State with that.

MR. MCQUILLAN: Madam Chair, Commissioner, that's on my list of things to do. I inherited a big stack of work plans and other things that were hanging in fire when I took over in January. I have not reviewed that risk assessment yet, but it's on my -- having gone through the expansion, the data gap wells and the LNAPL coring and settling this issue, what we're going to do with this RFI, breaking it into Phase I and Phase II, and we're going to try and settle our differences so we can come in, hopefully preapproved on Phase I, and we're still going back and forth on that. I will get to -- the other people have looked at it, I just haven't looked at it. Had

time yet. And I will give you my personal assurance to do it as fast as we can. But have a solid review on that.

COMMISSIONER HART STEBBINS: What does the Department of Health's review, what impact does it have on the Environment Department's review?

MR. MCQUILLAN: Madam Chair, Commissioner, the Department of Health, they have expertise in epidemiology and toxicology. They are the authority in health and their comments are going to be given great weight in our analysis and review and the comments we send back to the Air Force. The EPA, I think, also has submitted comments on the risk assessment.

COMMISSIONER HART STEBBINS: Great. And I want to follow up on Councilor Davis' comments. So this has been an issue before this Board, really since late 2009, early 2010. Well, in 2011 I believe there was a presentation by the Air Force given to Congress committing to certain deadlines and I think those deadlines passed in 2014. And I understand there was a lot -- you know, that was Shaw, that was CB&I. There was some issues with that work. I think it would be helpful at some point to the public and to this Board to have a new set of deadlines that the

NMED might expect of this process. And I understand it's a decades-long process, but for some of these steps -- you know, one of the issues in that original contract with Shaw was characterization of the dissolved phase and the LNAPL and it looks like we still don't have that. And so, again, if there's the possibility of putting together some expectations so that we know, even understanding that they might be flexible, I think would be helpful for all of us to understand where you think we might be able to be seeing some of these outcomes.

MR. MCQUILLAN: Excellent suggestion, thank you. We'll work with the Air Force to put that together.

COMMISSIONER HART STEBBINS: Thank you. Again, thank you for being here. Thank you, Madam Chair.

CHAIRWOMAN JONES: Thank you, sir. Is there more presentation?

MS. LYNNES: Yes, but I think your questions actually -- and Dennis' answers, might have actually taken up most of our presentation. But let me get to the beginning here.

So my name is Kate Lynnes. I'm the Senior Advisor for the Air Force for this project, as

Mr. Correll stated earlier tonight. And if I can maybe have your forbearance, because so many of the topics that Mr. Scott Clark and I were going to discuss tonight in our slides have already been answered by Mr. McQuillan.

What I would like to do is maybe go through these slides and use it as an opportunity to elaborate on answering some of the questions that you, Commissioner Hart Stebbins, and you, Councilman Davis, have raised earlier this evening.

So what we had originally intended to do was specifically address the status of the Notice of Deficiency. Mr. Clark is going to provide an overview of the data gap wells and describe briefly the upgrades to our groundwater treatment system and briefly discuss our new extraction well, which is Well 239, which for those of you who go to Bullhead Park, if you go up San Pedro and you look down Ridgecrest a little bit, it was right down there. I drove by it every day as I -- when I went to walk my dogs.

The Notice of Deficiency has already been talked about at length, but what I do want you to understand is that we view that as a wake up call. We heard NMED. We realized that we were having some

communication issues, which is one of the reasons that we've reorganized ourselves a little bit, to make sure that we're all communicating better. And I think what actually happens is, when you're working so hard on a project, as all of us do, you kind of get your silos and engineers and stuff, we may not be the best communicators in the world, and I think that we kind of migrated away from the communication strategies that were working really well, kind of dug ourselves into our work and saw this as a wake up call to improve our communication skills.

And so what I want you to know is when we got that Notice of Deficiency, November 16th, pretty much we put the pedal to the metal to address everything. Everyone canceled their Christmas vacations and everything and we got it done. So we got the Vadose Zone Coring Work Plan submitted on 15 December. It was conditionally approved, as Dennis said, on the 23rd of February. We got the Data Gap Well Work Plan submitted on the 20th of December, it was approved on the 28th of February. We also addressed another point, which was to include the USGS well data in our quarterly reports, which actually goes to one of the questions that you had, Councilman Davis, about with the water table wells

being submerged, how do we know where the plume really is. Well, fortunately the USGS wells that are now part -- all in one place. We've always looked at the data, but now they're in one report. They're in our report. We still have a viable well network, sentinel well network, on the tip of the plume between our plume and the Water Authority's wells. So that, plus the fact that we are now pumping pretty consistently on now a four-well system, but until then a three-well system, that has an affect on helping stop the forward movement of that plume, the hydrologic control, the plume collapse and capture, which Dennis alluded to, as well as we do have a viable well system with those USGS wells in place. So I hope that helps elaborate a little bit on the answer to your question.

COUNCILOR DAVIS: Ms. Lynnes, very quickly. Can I just follow up to clarify there. Just so I'm clear, Madam Chair, if that's -- I know we're talking time here. But the USGS wells are essentially a sentinel --

MS. LYNNES: Yes.

COUNCILOR DAVIS: -- for us and they always have been. But those aren't sufficient, in my understanding, for us to capture the data to decide

how -- exactly where the plume is and that's really been the question we haven't been able to get to from the very beginning. We know where it's not and certainly if it hits our USGS wells, it's coming to the Water Authority wells, which is a problem. So we know where it's not, but we yet still don't have a real sense of exactly what the extent is. Is that fair?

MS. LYNNES: Well, I don't know if I would carry it quite that far. I think that prior to the -- I think it was unexpected on everyone's radar, the significant jump we had in the first half of 2017. By the way, it's kind of flattened out again with the water table. Is that we had actually a pretty comprehensive network and we had a pretty good handle on where that plume is in that palaeochannel. And I think 2016 is when we put those two wells kind of in the upper corner to kind of get that extra corner there. So we actually had, I think, a pretty good boundary on that plume in addition to the sentinel wells. But when you lose your water table screens, and as Scott will describe, some of them are submerged only by this much, some of them are significantly submerged. They still provide data. And our intermediate and deep wells are still viable.

It did affect our ability to show both horizontal capture because we can't get the water table right there. So when you're calculating that plume capture you've lost that data point. And we also don't have the concentration of ethylene dibromide exactly at the water table because, again, the screens are submerged. And Scott's got a cartoon to kind of help you visualize that if you've never installed a -- oops, sorry. Never installed a well before and you don't really know what they look like. So I think that's overstating.

I think we did have a very good handle on where the plume is. And the other thing you also have to think about, and actually this next slide here talking about the technical working group for modeling being reconstituted or reinitiated for this effort. When you're pumping like we are you're creating a zone of hydrology control around those extraction wells. And so one of the goals of this modeling effort, and the technical working group is going to be working on in April, is we need a model or models that are agile enough for all of the different inputs and variability of inputs that we have here.

So, for instance, right now you're not

pumping the Ridgecrest wells as much because you've got the San Juan Chama diversion water, and so it's, as Dennis said, it changed the cone of depression, it's flattened out the gradient a little bit. But what if there's a big fire this year and Abiquiu gets slammed full of ash like Cochiti did, would you then have to increase your pumping? You know, we have been pumping our extraction wells. We've added a fourth extraction well. What does that effect have on our plume and where it's at and the gradient? So we're looking for a model or models that can help us put these different parameters in place and figure out and try to predict where our weak points are, what we really need to look at. And again, as Dennis mentioned, this is all done according to well-established EPA guidance. Everybody in the country uses this, it's standard. It's been used for decades and it's an awesome guidance document. So that is where we are headed with this, is either one or maybe two models that help us resolve this.

And then the other part, looking a little bit into the future, is also to support the Corrective Measures Evaluation at that point. And in addition to all the folks that Dennis mentioned that are involved in the technical working group, we've

also reached back to the Air Force Civil Engineer Center in San Antonio and we have access to one of their great modelers that's been involved before and another really great hydrogeologist are re-engaged in this project as well. So we're just not relying on our contractors, we're actually reaching back to the brains that we have in San Antonio and bringing them back into this effort. And so as Dennis mentioned, at the end of March we'll submit some preliminary modeling, but the intent is to then bring this as part of the discussion in the technical working group meeting. Everybody submits their data. Everything is out there for everyone to review before the meeting, and then we'll sit down and go through -- and as Dennis said, it's a true nerd fest. I mean, it's all day long. You're lucky if you get to eat. And start to pound this out. And if we need another meeting or so, we'll do it.

And just a couple of things, just briefly. You also asked about the difference in the strategic plan. Now, the strategic plan is the State's document. I think it was a wonderful idea when the State initiated doing this a few years ago because -- as Dennis said, we could fill this room with notebooks and data, right. No average person can

plow through all of that. And the strategic plan, I think, is a really good accessible way for the public and folks like yourself who have to answer to the public, what's going on with this cleanup. But in reality that's -- as Dennis mentioned at the beginning of his presentation, that is not an enforceable document. That is not the permit that we are subject to for this cleanup. I have been doing RCRA cleanup work for over 30 years. I'm that old. This permit is a tough permit. The corrective action process is very rigorous. And so, you expressed -- you both expressed concerns about how much we rely on monitor and natural attenuation or what kind of technologies we're really going to use. We're not even at that point of deciding that. We have invested very heavily in interim measures, particularly the groundwater pump and treat because, I think justifiably so, the Water Authority wanted it, our Congressional representatives wanted it, the City wanted it, the community wanted it and we've invested a significant amount of money. And as Dennis said, the most high-tech groundwater treatment plant in the State. That is an interim measure. That is not a final remedy necessarily. The work that we've done with SVE, the soil vapor extraction,

remediating between that and the bioslurping and a few other things, has removed about 750,000 gallons of equivalence of fuel from that source area. We've removed tons of soil. Those are all interim measures. These pilots are designed to help us figure out what the next step is. Do they involve some biological and monitored, you know, natural attenuation issues to look at? Yes. Do they involve engineered technologies? Yes. We have a complex site with complex stratigraphy. There isn't something that we could say -- tomorrow we could go out and say, we know for sure this is going to work. Unfortunately none of us can do that. And we're trying to use data and the best science and the best brains we have available to try pilots just so that when we get to that Corrective Measures Evaluation, which you have to go though all these different alternatives and rank them based on very stringent criteria to submit to the State where you're basically saying, we know this won't work, we tried it. We don't think this will work because we can show it on paper it won't work. But, boy, this EDB recirculation pilot really has potential and we want to recommend it for this area because our coring showed this is a hot spot, we think this would be an

excellent place to use this technology. So please don't think that the strategic plan, and Dennis said this as well, that's not what drives the regulatory framework for this cleanup. It is our corrective action provisions of our RCRA permit which, believe me, have significant regulatory teeth. So I just wanted to make that clear.

And I will turn this over to Scott to talk a little bit --

CHAIRWOMAN JONES: Just a second, please.

MS. LYNNES: Oh, sure. Absolutely.

CHAIRWOMAN JONES: Just for a moment, please. Commissioner Hart Stebbins, you had a couple of questions.

MS. LYNNES: Absolutely.

CHAIRWOMAN JONES: And I'm going to ask you, Scott, to kind of roll it along. Thank you.

COMMISSIONER HART STEBBINS: Madam Chair, thank you. I'll save my questions for after the presentation.

CHAIRWOMAN JONES: Thank you.

MR. CLARK: So, yeah, I was going to speak to the data gaps. As Councilor Davis said, that there were a number of wells that had flooded. It was 53 submerged shallow well screens. And by

shallow well screens, those are the wells that are literally screened across the water table. So with those wells we're able to pull water samples from directly on top of the water table and that's important because that helps us to characterize the plume at the very top.

So what's happened is, with the rise in the water table the well screens, the top of the well screens, are now submerged. So what used to be a shallow well screen is now what we would consider an intermediate well screen. So what we did is we looked at what the data gaps were as a result of the rising water table and where the well screens were flooded and we decided, you know, we're going to have to go back in and stick some more wells in to fill that data gap. And so we'll say it wasn't a data-driven need to replace all of the wells. When we first started there were a number of redundancies in the wells and the wells that are around it. So we looked at all that stuff and decided to do it, of course, in a very holistic fashion. We submitted a work plan to NMED in December; that was approved in February and we went forward.

And so just so -- to give an idea of, you know, how we had screened wells. This is kind of

simplified but, you know, we consider shallow, intermediate and deep. And again, the shallow are the ones that are screened across the water table. So as that water table has risen, the 53 screened wells that were considered shallow wells are now in the intermediate. And that's important for us because we need to not only know the lateral and horizontal extent of the plume, but we also need to know the vertical extent. It's not a pancake, it doesn't sit on top, it's kind of a blob. And so we need to know concentrations at different depths. And so the area we really have in the data gap is from the top of the well screens that are flooded to the top of water table. And like Kate had brought up a little earlier, there are some areas where it's a matter of feet and there are some areas where it's up to 10 or 12 feet where we have that data gap. But we're committed to putting in wells and taking care of that.

So just a summary of the new wells. Or actually, a three-prong approach. Six of them are just going to be straight up groundwater monitoring wells. We're putting in groundwater monitoring wells screened across the water table and they will have a lot of screen on them and they will be able to

account for any rise in the groundwater moving forward, so they're future-proof. So we're putting those in. And we had talked too about those LNAPL coreholes and that is a coring program. Generally we're going to be taking cores in the LNAPL, kind of like what you see in Antarctica or whatever, where they take, you know, actual cores. And we'll be pulling those and doing geological evaluations, chemical evaluations. We'll be looking at any microbial communities that may already be down there. From those cores, any data that we can glean from that we will do. And when we finish those cores we're actually going to go back and complete those cores as monitoring wells too, so they will also have well screens. We'll be able to sample those moving forward.

In addition to that we have 7 and possibly up to 12, depending on the water rate, of existing wells that are out there. Before when we put some wells in we actually did screen some as dry wells above the groundwater table and as the water table has risen those have water in them and now we're able to sample them. And we also have some deep soil vapor wells that were, you know, soil vapor wells down directly above the water table that we used to

sample for soil vapor concentrations at depth and because of the rising water table those have water in them and so we're able to sample those. And so what we'll be doing is adding 18 new groundwater monitoring locations to the existing hundred and forty-three monitoring well network. And so I should say like, you know, we're still able to sample the wells that are flooded. We're still able to get good data from them. We can still gauge them, which is, you know, getting groundwater elevation data, we're just sampling from a different part, a lower part of the aquifer than we were before and, you know, we have that data gap to fill a number of those wells.

And my last slide too, I think you guys have a copy of this. And it's a map. I know Dennis' map was a little better. It's roughly the same map. But you can see on the plume, the red dots are the four extraction wells and those are running right now. And the green on here are where the new data gap wells, all 18 of the new wells, which is again the coring, the monitoring wells and the new wells that have come online as a result of the rising water table. And on the top northeast corner too, you'll see the yellow and those are wells that are currently active, they're still screened across the water table

and those are areas that are directly between the Water Utility Authority wells and the plume.

So that's all I had. I don't know if there are any questions or if you wanted to wait until the end.

CHAIRWOMAN JONES: Thank you, sir.

MS. LYNNES: Just one last thing. And I would love to brag on our new treatment system and our expanded treatment system, but I won't for the sake of time. But I do want to spend just about two minutes talking about the fourth extraction well, which is the one that's closest to the base.

This one is important because, as I think you know -- the issue you were raising, Commissioner Hart Stebbins, about what may be perceived as taking too long to do additional characterization in the source area. We recognize that we have residual contamination in the source area, that's why we're doing the coring, that's why we're looking at various treatment pilots as ways to address that contamination in that source area. But we all know that if you continue to have ethylene dibromide from the source area go into solution and feed that plume that's gone off site, no matter how much you pump on the tip end of it, you're never going to kill it,

right? You're just going to be in this perpetual pump and treat mode forever, which you don't want us to be in. And frankly, we don't want to be in.

This fourth extraction well is designed to start to cut off the root of that plume, that's why it's placed where it is. The modelers actually -- their original location was in the middle of someone's driveway and we convinced them to move it over just a hair, thinking nobody wanted a drill rig in their driveway. But it was selected with the concurrence of the modelers and the pumping rate was as well, to say, this is the place where we can start to stop that feeding of the ethylene dibromide plume, not affect the overlapping benzene plume that's closer to the base, where actually the bacteria are doing a pretty good job of keeping that stable and keeping it from moving, the bacteria we all love so much, and hit that sweet spot where we can start to cut it off at the base and continue to bring it back from the tip. And so, this was a critical well for us to put in and it went online at 11:30 on February the 5th. I remember seeing the email, that it was up and running.

So I just wanted to point out that that well is very different and it's very critical and I think

it addresses a concern that I've heard expressed several times when we've come here.

(Councilor Davis excused)

CHAIRWOMAN JONES: Sorry, but we need to move on with this. Are there any questions before we ask our representative for the Water Authority to come discuss this with us? Commissioner Hart Stebbins.

COMMISSIONER HART STEBBINS: Thank you, Madam Chair. A couple of questions, and I'm going to work backwards. Risk assessment. I know you were kind of the lead on that. Again, is the information I have about the Department of Health's assessment accurate?

MS. LYNNES: Frankly, I was not aware that they had done one, ma'am. That was not communicated to me.

COMMISSIONER HART STEBBINS: All right. Something you said a little bit earlier indicated that you think there's a consensus on the plume capture, that the way the system is operating right now is actually capturing and drawing in the EDB. I thought that was one of the issues in the Notice of Deficiency, that there was not consensus and not enough information RFI to support that.

MS. LYNNES: It was not -- I think it was really more a matter of overstatement in terms of the degree of plume capture. I think that we are -- it's an unusual RFI report, in that usually an RFI report, or RCRA Facility Investigation Report, is designed to just kind of be like a dragnet thing, just the facts. We came, we saw, we sampled, here's the results. We brought in information from the interim measures to try to discuss where we're at, but keep in mind the cutoff point for that was the end of December of 2015.

COMMISSIONER HART STEBBINS: And I understand that. Let me just get back to my original question.

MS. LYNNES: Okay.

COMMISSIONER HART STEBBINS: Did you say tonight that there is a consensus among the stakeholders that the pump and treat system that's operating is capturing the plume?

MS. LYNNES: I don't -- like we just got done discussing, that we have data gaps in terms of horizontal capture and concentrations right now because of the rise in the water table. Before the rise in the water table, I think among, you know, NMED in terms of approving those little corner wells

that we put in to finish kind of the general boundary of the plume both vertically and horizontally. You know, is it perfectly defined? No. Is it defined enough to be able to say, here's where extraction wells need to go and stuff. And then, you know, the wonderful water conservation activities of this community threw us for a loop.

I would like to go back to the risk assessment though and something you may not be aware of. The risk assessment, again, is sort of an interim risk assessment. Because, again, when you've got 16 years of data and you've got a process that goes on this long, you want to do a snapshot risk assessment to say, is there something going on that could adversely affect someone, either on Base or off Base. So we all agreed, including the State, that this was a good time to do one. If it needs to be updated, particularly based on certain remedies, we will do it at the Corrective Measures Evaluation. We did it in accordance with the guidance that's issued by the State for risk assessments and we submitted each section of it to the -- most sections of it to the State as we went through it. And we worked very closely on how to structure it and how to discuss it. You know, we fully anticipate comments but, you know,

I do believe that it followed the guidance, yes.

COMMISSIONER HART STEBBINS: Great. Pump and treat. I think you heard my question to the Environment Department. It seems INTERA's model, capture model, was based on those four wells pumping 24/7. Is it accurate that they're not pumping 24/7?

MS. LYNNES: They are not. We do it as much as we can. You know, every once in a while. Like, for instance, when we were hooking up the new piping for the expansion of the treatment system, we had to shut one of the wells off to be able to do that, so those things happen. Do we pump them to the fullest extent that we can? Yes. But, you know, just at the stakeholder meeting earlier today that we had, and there was a representative from the Water Authority there, as well as everybody else, we actually -- the plume is getting narrower, at least horizontally. And actually, one of our extraction wells, 233, is outside of the plume boundary because the effect of the pumping and everything has kind of shrank it and made it more narrow. 228 and 234, which are on the tip and the side are actually doing more of the yeoman's work. And we've just turned on 239, so we really don't have any good data from it. It hasn't even been operating a month, but what it does show is

that -- in fact, our influent from all the wells is now below the maximum contaminant limit, which is the enforceable cleanup criteria. So we, you know, we're actually, you know, pumping water for hydraulic -- to get the capture zone. Is it fully done? No, absolutely not. That's why this is an interim measure, we're not claiming that. But right now we're basically treating almost clean water and we're using the pump and treat for trying to increase that zone of capture and collapse and bring it back.

COMMISSIONER HART STEBBINS: So the Air Force model was never built on 24/7 pumping. Is that accurate?

MS. LYNNES: We have had some capture models that, as Dennis mentioned, were based -- once we started getting actual data, we were relying, being kind of engineering I suppose in our vent, we're relying rather on models as much as we were looking at actual data. And we agreed with the State that that was inadequate, particularly with losing some of those wells and losing those horizontal data points. So that is why we are working, INTERA and the Water Authority are involved in this technical working group, we are working to develop a model or models that are consistent with EPA guidance and the

six-step capture analysis and when those models are selected and we all agree that it's our responsibility to go back and run them, whether it's one or two, and submit those detailed reports to the New Mexico Environment Department, once those are selected and consistent with EPA guidance.

COMMISSIONER HART STEBBINS: Is the Air Force using a new modeling software? FEFLOW.

MS. LYNNES: We haven't selected what we're using really.

COMMISSIONER HART STEBBINS: Is that under consideration?

MS. LYNNES: Yes, absolutely, but there are people -- when you get a bunch of modelers in a room, there's various opinions about all those things.

COMMISSIONER HART STEBBINS: Sure, I understand. FEFLOW integrates with or talks to other modeling systems?

MS. LYNNES: It can, yeah.

COMMISSIONER HART STEBBINS: Is it a proprietary product?

MS. LYNNES: No.

COMMISSIONER HART STEBBINS: Okay.

MS. LYNNES: And I think that's why we're looking at more than one -- potentially more than one

model, because this is a complex site. We have complex stratigraphy. We have a bunch of different variables.

COMMISSIONER HART STEBBINS: I get that. Yep, we've heard about that. And I am absolutely understanding of that and the complexity of this project. So my last question, since you are the Air Force spokesperson. The coring plan, the bid documents, the bid package that has gone out for that, does that reflect the consensus of the technical working group?

MS. LYNNES: The coring work plan and the work that will be scoped and implemented will be in accordance with the approved work plan that the State approved in February.

COMMISSIONER HART STEBBINS: Does that include the input from the technical working group?

MS. LYNNES: It does. Does it exactly match everything? No.

COMMISSIONER HART STEBBINS: Okay.

MS. LYNNES: But we have to comply with the approved work plan and the conditions from the State of New Mexico because they are a regulator.

COMMISSIONER HART STEBBINS: Absolutely. Thank you very much. And just before I conclude, I

just want to thank Secretary Correll for being here. I don't know if I've ever publicly been able to say this, but I really feel that when you joined this conversation, that we saw a real change in how the Air Force was willing to interact with all of the stakeholders, particularly us at the Water Utility Authority. So thank you for that. We continue to appreciate your engagement and just the fact that you're here tonight. So thank you, sir.

Thank you, Madam Chair.

CHAIRWOMAN JONES: Thank you, everyone. We would like to hear from -- I think there are a few questions from -- for the Water Authority. Rick, if you would like to come down. And perhaps if you want to make a statement, that's fine with us. And then we have a couple of quick questions for you and then we will proceed.

Good evening.

MR. SHEAN: Good evening and thank you. Thank you very much.

We have sent out a memo with our comments, today, on the Strategic Plan 2018 from NMED. And listening tonight, they've answered a lot of questions. Still leave me with some questions I have, though, for NMED on the -- first of all, there

was a removal of pump and treat from -- or plume collapse from the sort of initial page and that was usually a priority site. So that, to us, was very clear, it did not look like 2018 was a year of full pump and treat or it opened itself up to other options, such as the natural attenuation, which they did speak to.

The hydrolysis that they were talking about is something -- we haven't seen evidence, and our review of the RFI document by INTERA showed that we did not agree that it was occurring. And the way we understand is, if it was happening at any significant rate in the aquifer, that the plume actually probably wouldn't be there, at least stretching as long as it is into the aquifer. So that's one of our main concerns.

I could go on, but I'll open myself to other questions.

CHAIRWOMAN JONES: Thank you. Councilor Pena, did you have questions?

COUNCILOR PENA: No, I'm good.

CHAIRWOMAN JONES: Are there any questions for Rick? Thank you. And thanks for helping us through this.

MR. SHEAN: Thank you.

CHAIRWOMAN JONES: Thank you. That does conclude our Water Report, but since we're already on the Other Business section, Ms. Yuhas, would you like to come give us a drought update before we move along with the regular agenda.

Thank you.

MS. YUHAS: I'm not quite sure where my slide is. It's the very last -- oh, there we go.

Madam Chair, Members of the Board, 73 percent of the State is in severe drought and extreme drought conditions have increased across the northern part of the State since last month. These conditions are expected to continue through June, but they should ease in July and August which might allow us to have a normal monsoon season.

And on the positive side, if you look over at the right side of this slide, our customers are doing a great job keeping their water use under control. Our customers have only used 30 million gallons more than last year. Now, 30 million might sound like a whole lot, but that actually equates to less than a quarter of a gallon per person per day and that is in the face of having received far less moisture this year. Precipitation from January to March 21st of 2017 was 1.39 inches and this year it

was just .63. So they've had a modest increase in water use in response to the drought. So our customers are doing just what we have been working with them for 20 years to get them to do, respond appropriately to weather conditions, but not overwater in response to drought.

With that good news, I'll stand for any questions.

CHAIRWOMAN JONES: Thank you, Ms. Yuhas. Are there any questions? Thank you very much for the report. So let's get back on the agenda, which would be the approval of the minutes. I make a motion to approve the February 28th, 2018 minutes.

COMMISSIONER HART STEBBINS: Second.

COUNCILOR PENA: Second.

CHAIRWOMAN JONES: There's a motion and a second. All those in favor say yes.

MEMBERS: Yes.

CHAIRWOMAN JONES: Opposed? Motion carries. There are no proclamations and awards. However, I believe there's probably public comment. So how many do we have signed up this evening?

MS. CARREON: Six.

CHAIRWOMAN JONES: Six. So I'm going to give each person three minutes to speak, with a

warning at two-and-a-half. If you'll please wrap it up at two-and-a-half minutes. Would you call the first speaker?

MS. CARREON: David McCoy, followed by Laura Dale.

MR. MCCOY: Good evening. I'm Dave McCoy with Citizen Action New Mexico. I appreciate the comments and the concerns that were expressed, they were quite accurate and to the point. So I want to add a few things. I want to talk just a little about pump and treat. This is a technology that's for every gram of EDB that you remove you're removing about somewhere between -- around 3.8 million gallons of water. For 350 million gallons they've removed about a hundred and ten grams of EDB. That's a few teaspoons. So you're looking at millions of grams of EDB potentially out there in the aquifer and if you divide a hundred and ten grams into even a hundred thousand grams you're at a thousand years using, you know, pump and treat technology. So this certainly isn't a solution to the problem.

Our concern is, one, there's no RFI in place. It was done back in 2014, it was late then. Then it's late now again and now it's being extended. And we had a risk assessment plan that was premised

on the RFI, which had lots of data gaps. So how do you have an accurate risk assessment based on an inaccurate RFI.

I'm going to be jumping around a little, I guess, tonight. But one of the things with respect to public participation, and anybody's participation, is the New Mexico Environment Department web site. It's not searchable. You go in, you want to search through ten years of documents. Try putting in a word, find it. You know, you won't find it. It doesn't come up because it's not searchable. That web site needs to be made searchable and when they post documents they need to be searchable too. And so, that's a concern. There's no organization chart for all these different agencies that are involved and who's doing what and when is it being done.

And I've talked before about the lack of the public to attend technical meetings, we think that's a problem still. We think the plan ignores EDB and the contaminant health dangers that should be expressed. The critical gaps remain that have to be --

CHAIRWOMAN JONES: Sorry, Mr. McCoy. Thank you. Mr. McCoy, sorry, but we're running a tight schedule tonight. Thank you, Mr. McCoy.

Next speaker.

MS. CARREON: Dale, Laura; followed by Cody Slama.

CHAIRWOMAN JONES: Good evening.

MS. DALE: My name is Laura Dale. I'm a free speech advocate. How this ties into the water issues is, I am here because we are starting to issue the RFI for the public access channels. It has previously been operated by an entity that masquerades as a non-profit and is, in fact, a for profit agency; has not put out more than ten hours of public access programming. And one of the reasons I'm so involved in this and the way it ties into the water is, the irony is that public access started as some activists in Canada who were doing filming about water contamination. They saw these cables being laid in the land and saw that this community was not being listened to, so they made a bargain with the cable companies. You give us some so we can create some media so we can get some attention to these issues and we'll let you lay the cables. And so that did so well in Canada they even won the Water Rights issue, that it traveled to New York and then it took over the country. So cable access -- public access started as a Water Rights issue. A water

contamination rights issue.

We got the same thing going on here and the big irony of the plume, the reason we even know about it is because of some very devoted public activists here in New Mexico who were involved with the public access station when Kirtland Air Force Base had its head in the absolute sand, was refusing to even admit there was a plume. And some public advocates here in the State who are military people got on their little channel with public access and repeatedly and repeatedly and repeatedly talked about the plume until finally you folks listened, and I don't mean you here, I just mean the government and the agencies.

So public access is a fundamental part of the canary in the coal mine. When accidents like this happen it's the public's health that hits first. You start seeing the birth rates go down. You start seeing the cancer rates go up, or whatever. So the public is always the one who first experiences the impact of this. And we take away the voice from public access, you've destroyed their ability to explain what is happening to them and to get people like you to take it seriously.

Kirtland Air Force Base would have literally

buried that for as long as possible had it not been for public access in New Mexico constantly putting programs and constantly going to meetings and constantly talking about the health consequences that were happening.

So it is time to get back a robust, powerful community-based public access channel, away from the contractor who has turned away pretty much every producer that used to be on the previous contract, and let's get back to the canary in the coal mine, being able to tell the community, this is what's happening to us. This is what's hurting us. This is why our children can't read. This is why this and that. This is a viable part of how you as the governoring bodies stay on top of these issues before they become the plume that you can't contain and that you don't know where it is.

And if people had listened to them back then, this would not be the utter mess that it is right now. So please, take this RFI process very seriously. Let's get the best person in the position and let's get our voices back on this. Thank you.

CHAIRWOMAN JONES: Thank you.

MS. CARREON: Cody, followed by Mike Neas.

MR. SLAMA: Hello. My name is Cody Slama.

I'm with Albuquerque Water Groups. And I am here tonight because I'm very concerned that this plume isn't being cleaned up as fast as it should be and I'm concerned that it may never be cleaned up.

The extraction wells have only pulled out 87 grams of EDB, ethylene dibromide, when there's much, much more. So this is the very minimal amount. And this new plan seems to be having a lot to do with monitoring wells, and that's another one of my concerns, is that the monitoring wells that they have now aren't calculating whether the water is contaminated or not. And that's very concerning to me because I live very close to the plume and I want to know whether my water is safe to drink, to use for showering. So going along in the future I want to know what is the plan and what is the strategy for when the cleanup fails, because it looks to me like -- and I was not convinced tonight, and I've been to other public meetings, and I am not convinced at all that this cleanup is going well. And I want to know, what is the plan whenever it fails. And how is the public going to be informed. There's quarterly meetings, but are you going to wait a few months to tell the public before the regular public meetings come up. So, yeah, that's really what I came up here

tonight for, is to ask that question and to request that we don't have anything that happened like in Michigan a few years ago, where the public was not informed. And if this contamination is ever in our drinking water, we need to know right away because this is an environmental justice issue and it needs to be dealt with and I would ask that everyone in this room and everyone else who has a say in how this is dealt with, that it is dealt with. Thank you.

CHAIRWOMAN JONES: Thank you.

MS. CARREON: Mike Neas, followed by Elaine Hebard.

MR. NEAS: Madam Chair, Members of the Board. My name is Mike Neas. I appreciate you allowing us to hear the presentation tonight prior to public comment. There were a couple of things I'd like to mention regarding that.

One of the speakers mentioned that what if there was a forest fire and Abiquiu Lake was closed because of all the debris coming from the fire? What I'd like to talk to you about a little bit tonight is about the fact that the Water Protection Advisory Board in 2017 issued an advisory letter requesting that you look into oil and gas ordinances for the City and the County. They're about to reissue that

letter and I think that probably in the next two weeks you will have a new and improved letter because nobody was listening to it the first time.

One of the things that changed their minds was a presentation by a geologist by the name of Don Philips. And Mr. Philips has a very compelling presentation going to be given right here in this room on April 3rd at 6:30. So I recommend and I hope that you will all watch and attend that presentation, because the Albuquerque Basin does need to be protected. We do need to be paying attention to other potential pollution hazards, not just the Kirtland spill. And so -- and by the way, the presentation on the 3rd at 6:30 is sponsored by Commissioner Hart Stebbins and Councilor Davis, so please attend and let's not let any further -- you know, being pro-active is more important than cleanup and hopefully Bernalillo County never has to go through what we're going through with the Kirtland spill again. Thank you.

COMMISSIONER HART STEBBINS: Madam Chair. Mr. Neas, I just want to thank you for your interest in this, your engagement, your ongoing engagement. I don't want to leave anybody with the impression that we got that letter and didn't listen. I think you're

aware of the work that has been done subsequent to the Water Protection Advisory Board's letter.

MR. NEAS: Yes.

COMMISSIONER HART STEBBINS: So again, just want to make sure that you're clear, we did read it. We have responded. And look forward to continuing to work with you.

MR. NEAS: I am clear on that, Commissioner, and I'm sorry that it might have sounded like you didn't do anything.

COMMISSIONER HART STEBBINS: I appreciate that. Thank you, Madam Chair.

MS. CARREON: Elaine Hebard, followed by Santiago Maestas.

MS. HEBARD: Madam Chair, Santiago had to leave, so he asked me to say a few words, if I might, at the end of my comments.

My name is Elaine Hebard. Tomorrow is World Water Day. The theme is, 'The Answer Is In Nature' so I hope that you all will celebrate.

I'm here to talk about three action items. The first is on the Drought Management Strategy, which I would suggest be pulled out from the Conservation Plan. It's Section 7 of the resolution tonight. And that is because I think something that

Commissioner Hart Stebbins raised last month about the drought -- the groundwater pumping goal is one of two factors that is raised in that plan and it should probably be tied with the Groundwater Management Plan rather than the Conservation Plan. You'll use conservation measures if a drought is every mentioned. But the drought pumping goal increases if there's less water in the river because it is actually set because of the Fish and Wildlife Service annual operating plan rather than as part of a drought, so it increases pumping. We don't want to increase pumping. We are already paying back for the prior pumping. In fact, the depletions that are now in the river are probably twice what the pumping is right now because of past pumping. You don't want to add to those. We don't have a bank account. We didn't put water into it. We are paying more like a line of credit. So every time we take water out, we actually have to pay for that water.

The second item that I want to -- so the first item is, pull out the Drought Management Strategy. The second item that I'd like to just suggest is that in the goals and objectives, since the budget ordinance says, have a process which encourages active community participation, have a

workshop on the goals and objectives. Last night kicked off the County's 2015 -- 2018 cycle of goals and objectives for their CIP Program. I would suggest something similar with the Utility to make sure that it is connected and meshes with the City and County. And so there are several specific things that I would suggest with the goals and objectives that have been suggested and I will submit those in letter form because there's not enough time.

But one of the goals for this year was to update the water supply charge, and as far as I understand that has not yet been done. It will look at the expansion or the no-net expense -- the water supply charge is a part of the no-net expense calculation.

And so as Mr. Maestas was going to mention, tonight's R-18-9, which is authorizing amendment to the 2000 agreement with Western Water Land Holdings relies in part on the water supply charge as it currently exists. Since we know it's being changed, the request is to have a moratorium on anything that is asking for the current water supply charge until that charge is updated. And Mr. Maestas had the letters from SunTech to the Water Utility Authority about the water supply charge to hand out as part of

his presentation.

CHAIRWOMAN JONES: Thank you.

MS. HEBARD: Thank you.

CHAIRWOMAN JONES: Also, before we go to the next speaker, I just realized that Colonel Gibbs and Colonel Harnett are still here. We want to thank them for all the help they've given us and for dealing with this and also for your staff being here and listening to all that we have to say. Thank you.

MS. HEBARD: So that was Mr. Maestas' presentation as well.

CHAIRWOMAN JONES: Got it. Thank you.

MS. CARREON: We're done.

CHAIRWOMAN JONES: We're done, okay. Thank you. That is the end of public comment. The next scheduled meeting will be April 18th, 2018 at 5 p.m. here in the Vincent E. Griego Chambers.

The next item of business is the Introduction of First Reading of Legislation.

Mr. Roth.

MR. ROTH: Thank you, Madam Chair, Members of the Board. In front of you today are the goals and objectives for fiscal year '19. Just as a correction on the agenda, this is for fiscal year '19. The resolution is correct. We'll fix the title

for the resolution for the next agenda.

The goals and objectives are part of the Utility's Strategic Planning, Budgeting and Improvement process. You can see the goals and objectives on top of this diagram. As a part of the goals and objectives we do a lot of benchmarking, measuring our performance year to year. We also benchmark our performance against other high-performing utilities to look at performance gaps. We also look in terms of conducting assessments to look at best practice components based on effective utility management. All this is used to help drive the budget, which will be introduced at the April meeting. We balance this quantitative information with input from our customers. They weigh in on how they think we're doing. We do this through customer opinion surveys every two years, input from our advisory committees on a monthly basis and then customer conservations that occur four times a year. And we also use this information as a part of our employee expectation process in terms of the performance improvements. All this to help fulfill the mission of our utility.

This slide shows the five goal areas. Within each goal we have guiding goal statements.

This is the, what we want to achieve, the desired outcome in each goal area over the long term and we measure our performance in each goal area by these key performance indicators. These come out from the American Water Works Association. So we measure our performance year to year on these key performance indicators, but also benchmark our performance against other high-performing utilities.

Through the benchmarking process, best practice assessments and customer input we identify performance gaps in terms of operations and service delivery. And we address those performance gaps through the budget process by allocating and prioritizing resources and we develop these improved processes in order to become more efficient and effective in our operations and service delivery and this is delivered through the one-year objectives. These objectives are part of our continued performance improvement process. So these objectives also -- some of these objectives become part of the employee expectation so that we can really drive performance throughout the organization and communicate our performance gaps and why we need to address these performance gaps. There's 52 objectives in these goal areas and will highlight

some of the major objectives by these different goal areas.

In the water supply and operations goal we want to continue our work in the leak detection program, identifying leaks before they surface because we don't want catastrophic leaks, which often cost more money to fix.

In the aquifer storage and recovery we want to begin testing of the large-scale aquifer storage recovery project, which is underway at the drinking water plant and complete the operation plant for that project, but also evaluate what is the next ASR project going into the future.

We want to continue our progress in terms of planned maintenance activities. We want to conduct more planned maintenance rather than corrective maintenance. Over time we have targets for our surface and groundwater facilities.

This year we started water conservation events in terms of meeting with the auditors, landscapers, property managers and then generally open houses and we want to continue these events through fiscal year '19.

And lastly in this goal area we want to continue our partnership for a safe water program

where we learn about operation optimization to become more efficient in our service delivery to our customers. And also as a key objective, implementation of the Water 2120 Plan, which was adopted in 2016.

In the wastewater collection operations goal we have several targets around sewer cleaning and televising. This is used to help reduce sanitary sewer overflows. As you saw in the presentation last year during the budget process we're about halfway done in terms of the reclamation rehabilitation plan. This includes major overhaul of rehabilitation of major facilities at our wastewater treatment plant.

Similar to the water plant we want to increase our planned maintenance so we have targets related to planned maintenance activities at our wastewater treatment plant. And also to continue as a part of that process of cleaning our wastewater we want to turn those biosolids into composting and be able to sell that composting to vendors throughout Albuquerque and throughout the State.

In the customer service goal we have several metrics related to our call center operations. We started this several years ago and so we have several targets in order to continue customer satisfaction

when our customers contact the Water Authority. We have a lot of aging meters and we want to update that through our automated meter infrastructure program, replacing these old meters with smart meters to help continue improving our revenue and support our conservation efforts.

We will continue with our customer conversation meetings. This is where have meetings with our customers four times a year talking about important issues facing the Utility. We do this through focus group meetings, round table discussions and they are interactive engaging activities with our customers.

In the business planning and management goal we have a target of spending $55 million for water and wastewater rehabilitation and replacement. We also want to continue our work on the next phase of construction for the Los Padillas Water Project. Protecting our assets from cyber attacks through the -- using guideline standards and best practices from the National Cyber Security Framework. Later this year we will be conducting our biannual rate study. We will be involving the Technical Customer Advisory Committee in this rate evaluation and you can expect some recommendations from the committee in the spring

of 2019.

We completed a major upgrade to our Maximo system. This is our comprehensive asset management system, or computer management and maintenance system. This is used to make better decisions about our assets in terms of full life cycle -- I'm sorry, life cycle costing and we use this -- we will continue to do some updates to the system in the next fiscal year looking at fleet management and condition monitoring, as well with life cycle accounting.

And lastly, with the water lapse certification we're preparing for that audit from the State, as well as accreditation assessment as well.

And in the last goal of organization development we want to continue our work with our knowledge management strategy. We have many employees who are leaving the organization and we want to make sure that we transfer their knowledge, their experience to the employees who are succeeding them over time.

Something that's very popular with our employees is the wellness program. We have several challenges that we have set up with our employees. What this wellness program also looks at, focusing on nutrition, physical activity, weight loss, disease

and injury prevention as well.

And lastly, this year we started a new program, employee connections, where we have focus group meetings with our employees discussing important issues, challenges facing our utility and we identify many of these areas though our employee surveys and we will continue to identify these issues through the survey. But from the outcome from these meetings we're going to be implementing -- reintegrating of these changes through our training program.

Overall, these are the goals and objectives for fiscal year '19. Many of these objectives are very technical in nature, but they're used to improve our efficiency, effectiveness and operations and service delivery and are a big component of our continued performance improvement program.

If you have any questions I'd be happy to answer them.

CHAIRWOMAN JONES: Thank, Mr. Roth. And again, this is a first reading of introduction, but if we have any questions, Mr. Roth is available.

Yes, Ms. Nair.

MS. NAIR: Thank you, Madam Chair. Just a quick question with regard to public input into the

goals and objectives. Could that sort of conversation happen at the customer conversations that the Water Utility holds regularly?

MR. ROTH: Thank you, Madam Chair and Member Nair. Yes, those customer conversations look at different issues and challenges the Utility is facing. They are very related to the goals and objectives. Therefore, our customers weigh in on really the goals and objectives on an annual basis four times a year.

CHAIRWOMAN JONES: Anymore questions? Thank you, Mr. Roth. Moving right along to the consent agenda. I would make a motion to approve the consent agenda.

COUNCILOR PENA: Second.

CHAIRWOMAN JONES: There's a motion and a second. All those in favor say yes.

MEMBERS: Yes.

CHAIRWOMAN JONES: Motion carries. We have a few approval items this evening. The first one is O-18-1, amending the Water Waste Ordinance.

Mr. Bustos.

MS. YUHAS: Madam Chair, Members of the Board. Since we made a presentation on this last time, if it's pleasing to you, we'll just stand for

questions on this.

CHAIRWOMAN JONES: Thank you. Are there any questions?

COMMISSIONER HART STEBBINS: I move approval.

CHAIRWOMAN JONES: There's a motion and a second for approval. All those in favor say yes.

MEMBERS: Yes.

CHAIRWOMAN JONES: Motion carries. Thank you. Very well done.

MR. BUSTOS: Thank you very much.

CHAIRWOMAN JONES: Second was Item B, O-18-2, authorizing the execution and delivery of a loan and subsidy agreement by and between the Albuquerque Bernalillo County Water Utility Authority and the New Mexico Finance for the advanced metering infrastructure. Does anyone have any questions? In that case I would move approval.

COMMISSIONER HART STEBBINS: Second.

CHAIRWOMAN JONES: There's a motion and a second. All those in favor say yes.

MEMBERS: Yes.

CHAIRWOMAN JONES: Motion carries. Item C is R-18-7, confirming approval of the execution and delivery of a loan and subsidy agreement by and

between the Albuquerque Bernalillo County Water Utility Authority and the New Mexico Finance Authority. Move approval.

COMMISSIONER HART STEBBINS: Second.

CHAIRWOMAN JONES: Any questions? All those in favor say yes.

MEMBERS: Yes.

CHAIRWOMAN JONES: Motion carries. And Item D is R-18-8, approving the update to the Water Conservation Plan. I move approval. Are there any questions?

COMMISSIONER HART STEBBINS: Second.

CHAIRWOMAN JONES: There's a motion and a second. All those in favor say yes.

MEMBERS: Yes.

CHAIRWOMAN JONES: Motion carries. Last item on the agenda is R-18-9, authorizing amendment to 2007 agreement with Western Albuquerque Land Holdings for the Antelope site. Move approval. Are there any questions? Ms. Nair.

MS. NAIR: Madam Chair, I just have a question to clarify the audience's question earlier, the language about being subject to current utility expansion and water charges on page 1, section 2, line 25. Does that mean that we're locking in the

water charges at this moment or that that will be the sort of then current charges?

EXECUTIVE DIRECTOR SANCHEZ: Madam Chair, Member Nair, that's correct. It would be the then water supply charge, or UVCs at that time. I think that language is intended to capture future changes to those charges.

CHAIRWOMAN JONES: Thank you. Anymore questions? There's been a motion and a second for R-18-9. All those in favor say yes.

MEMBERS: Yes.

CHAIRWOMAN JONES: Motion carries. With that, thank you all for being here this evening and the meeting is adjourned.

(Meeting adjourned at 7:04 p.m.)

REPORTER'S CERTIFICATE

I, Kim Kay Shollenbarger, New Mexico Certified Court Reporter, No. 236, do hereby certify that I reported the foregoing proceedings in stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings taken to the best of my ability.

I FURTHER CERTIFY that I am neither employed by nor related to any of the parties or attorneys in this matter and that I have no interest in the final disposition of this matter.

Kim Kay Shollenbarger
CCR No. 236, RPR
License Expires 12-31-2018