



AGENDA

BUCKMAN DIRECT DIVERSION BOARD
APRIL 06, 2023 AT 4:00 PM
COUNCIL CHAMBERS
CITY HALL
200 LINCOLN AVENUE



PROCEDURES FOR BUCKMAN DIRECT DIVERSION BOARD MEETING

Written Public Comment: Members of the public may submit written comments by clicking on the comment bubble to the right of the meeting on the public portal at <https://santafe.primegov.com/public/portal> three hours prior to the start of the meeting.

The agenda and packet for the meeting will be posted at <https://santafe.primegov.com/public/portal>.

1. **CALL TO ORDER**
2. **ROLL CALL**
3. **APPROVAL OF AGENDA**
4. **APPROVAL OF MINUTES**
 - a. Approval of minutes from the March 2, 2023 Buckman Direct Diversion Board Meeting.

5. PRESENTATION/INFORMATIONAL ITEMS

- a. Monthly Update on BDD Operations. (Randy Sugrue, BDD Operations Superintendent, rcsugrue@santafenm.gov, 505-955-4501).
- b. Report from the BDD Facilities Manager. (Rick Carpenter, BDD Facilities Manager, rrcarpenter@santafenm.gov, 505-955-4507).
- c. The Buckman Direct Diversion's 2022 Consumer Confidence Report (CCR), a routine, annual report describing the water produced in the calendar year 2022 delivered to the City of Santa Fe and Santa Fe County on March 16, 2023. (Rick Carpenter, BDD Facilities Manager, rrcarpenter@santafenm.gov, 505-955-4507, Danny Carter, BDD Chemist, djcarter@santafenm.gov, 505-955-4511).
- d. Report on March 30, 2023 Fiscal Services Audit Committee and discussion of items considered by FSAC including the separation of BDD accounts from City accounts and the BDD settlement funds account. (FSAC) (VERBAL) (Antoinette Armijo-Rougemont, BDD Accounting Supervisor, amarmijo@santafenm.gov, 505-955-4506).

6. ACTION ITEMS: CONSENT

- a. Request for approval of Technical Budget Adjustment Request to move funds from the Legal Contract line in the amount of \$105,000 to the Gas Service Line in the amount of \$80,000, and to the Service Contract Line in the amount of \$25,000 for Munis Configurations (Rick Carpenter, BDD Facilities Manager, rrcarpenter@santafenm.gov, 955-4507, and Antoinette Armijo-Rougemont, BDD Accounting Supervisor, amarmijo@santafenm.gov, 955-4506).

7. ACTION ITEMS: DISCUSSION AND ACTION

- a. Presentation on Updated 2023 BDD Source Water Protection Plan and discussion and possible action on additional Source Water Protection Plan updates. (Rick Carpenter, BDD Facilities Manager,

rrcarpenter@santafenm.gov, 505-955-4507, Danny Carter, BDD Chemist, djcarter@santafenm.gov, 505-955-4511, Jay Lazarus, BDDB Consultant/Glorieta Geoscience Inc., lazarus@glorietageo.com, 505-983-1625, 505-660-3867).

- b. Request for approval and recommendation to Santa Fe County Board of County Commissioners and City of Santa Fe City Council to approve the Fiscal Year 2024 Buckman Direct Diversion Operating Budget and Other Fund Contributions. (Rick Carpenter, BDD Facilities Manager, rrcarpenter@santafenm.gov, 505-955-4507, and Antoinette Armijo-Rougemont, BDD Accounting Supervisor, amarmijo@santafenm.gov, 505-955-4506).
 - 1. Presentation of the proposed FY2024 BDD Operating Budget and Other Fund Contributions.
 - 2. Public Comment.

- c. Request for approval to award RFP # 23/28/P to Wright Water Engineers, Inc. for engineering services. (Rick Carpenter, BDD Facilities Manager rrcarpenter@santafenm.gov; Monique Maes, Contracts Administrator, mmmaes@santafenm.gov).
 - 1. Request for approval of a Professional Services Agreement with Wright Water Engineers, Inc. for engineering services in the amount of \$250,000.00 plus NMGRT for the remainder of FY2023 and for FY2024.
 - 2. Request to utilize funds from the legal settlement for this contract.

8. **MATTERS FROM THE PUBLIC:**

9. **MATTERS FROM THE BOARD**

10. **NEXT MEETING: Thursday, May 4, 2023 at 4:00 PM**

11. **ADJOURN**

12. **EXECUTIVE SESSION**

Persons with disabilities in need of accommodations, contact the City Clerk's office at 955-6521, five (5) working days prior to meeting date.

MINUTES OF THE
THE CITY OF SANTA FE & SANTA FE COUNTY
BUCKMAN DIRECT DIVERSION BOARD MEETING

March 2, 2023

1. CALL TO ORDER

This regular meeting of the Santa Fe County & City Buckman Direct Diversion Board meeting was called to order by Councilor Carol Romero-Wirth, Chair, at approximately 4:00 p.m. in the Council Chambers, City Hall, 200 Lincoln Avenue, Santa Fe, New Mexico.

2. ROLL CALL: Roll was called and a quorum was present as shown:

BDD Board Members Present:

Commissioner Anna Hamilton
Commissioner Anna Hansen
Councilor Carol Romero-Wirth, Chair
Councilor Renee Villarreal
Peter Ives, Alternate for Citizen Member
Tom Egelhoff, Las Campanas [non-voting]

Member(s) Excused:

J.C. Helms, Citizen Member

Others Present:

Rick Carpenter, BDD Facilities Manager
Nancy Long, BDDB Legal Counsel
Kyle Harwood, BDDB Legal Counsel
Randy Sugrue, BDD Operations Superintendent
Bernardine Padilla, BDD Public Relations Coordinator
Monique Maes, BDD Contracts Administrator
Delfin Peterson, BDD Administrative Assistant
Antoinette Armijo-Rougement, BCC Accounting Supervisor
Jeff Young, County Attorney
Michelle Hunter, County Interim Utilities Director
Jay Lazarus, BDDB Consultant, Glorieta Geoscience, Inc.
James Bearzi, BDDB Consultant, BRZ Consulting

[Chair Hamilton read the agenda captions throughout the meeting.]

3. APPROVAL OF AGENDA

Nancy Long, BDD Board Counsel, requested that item 8. A, Discussion and Request for Approval of the Revised major Repair and Replacement Fund Policy, be removed from the agenda noting it was not quite ready for action.

Councilor Romero-Wirth moved to approve the agenda as amended. Commissioner Hansen seconded and the motion passed by unanimous [5-0] voice vote.

4. APPROVAL OF CONSENT AGENDA

Mr. Ives noted he had a question on the one consent item and thus there was no action necessary.

5. APPROVAL OF MINUTES: February 2, 2023

The following corrections were offered:

Page 4: “MR. HARWOOD: You raise some really good points. We should **not** be penalized for our progressive conservation that we have done.

Page 4: “MR. HARWOOD: ... In the last eight years we’ve had years where that has dipped below to 85 percent including last year...”

Commissioner Hansen moved to approve the February 2, 2023 as amended. Her motion was seconded by Councilor Romero-Wirth and passed by [5-0] voice vote.

6. PRESENTATION/INFORMATIONAL ITEMS

a. Monthly Update on BDD Operations

RANDY SUGRUE (BDD Operations Superintendent): Thank you. I will speak up if you can’t hear me. My report is on the operations for the month of February, 2023. Raw water diversions averaged 2.38 million gallons per day. Drinking water deliveries to our booster stations 2.17 million gallons per day. There was no raw water diversion to Las Campanas for February. Onsite water storage, .21 million gallons per day on average. We provided about 35 percent of the water supply for the City. You can see our annual diversion there in the graph is still somewhat below average as Canyon Road has been running at a higher rate through the winter to bring the reservoir levels down.

On page 2, the regional water overview demand for the month of February is around 6.2 million gallons per day on average for City and County. The Rio Grande flow around 675 cubic feet per second on average. That is increasing as the weather warms a bit. Combined storage at Canyon Road, in both reservoirs combined, was about 34.9 percent that has now dropped to about 30 and that’s their target for the spring runoff season, below 30 percent. Watershed inflow was about 1.8 million gallons per day and that should increase as temperatures increase.

San Juan-Chama storage and City storage in Abiquiu around 12,700 acre-feet and as we mentioned there was a January 1st update to San Juan-Chama allocations. The

allocation for January 1st was zero. There will be more information in April as they monitor runoff of snows up in the south part of Colorado begins to melt. I did make one note on the snowfall gauge this morning, that the snow pack at the very upper Rio Grande site, headwaters of the Rio Grande was 148 percent of a snow water average so there's a good amount of snow up there. So weather cooperating, runoff is looking good at this point.

I did include a new graph from the Bureau of Reclamation on San Juan-Chama storage and that should have better information as time goes on. It was just something that they started last year. Our El Niño summary is predicting neutral conditions within the next couple of months and so hopefully that is better than La Niña. Neutral conditions like El Niño means a little more moisture so we hope for that.

That's my report. I'll stand for questions.

CHAIR HAMILTON: Does the Board have any questions? Mr. Ives.

MEMBER IVES: Thank you, Madam Chair. Just a couple of quick ones Randy. One the chart in #3 it shows diversions, of course since January 1 we haven't had any San Juan-Chama, so I assume those are all raw water diversions or native water.

MR. SUGRUE: There was a little bit of San Juan-Chama early in January. And then generally our strategy to divert most out of native water to make sure we get the most out of that in a year where there is potential for low river flows.

MEMBER IVES: So if we use San Juan-Chama that was carried over from last year that –

MR. SUGRUE: In January?

MEMBER IVES: Yes.

MR. SUGRUE: Well, no, it still counts for this year's diversion. We didn't change the call so I kind of got a sense of what the forecast would be for the year and depending on the snow melt runoff, we just don't know what it'll be. Last year it was somewhat [inaudible – changing microphones]

MEMBER IVES: I was just curious because on page 2 you had stated that there were zero acre-feet of San Juan-Chama.

MR. SUGRUE: On that's the month of February.

MEMBER IVES: Oh, okay.

MR. SUGRUE: That was February.

MEMBER IVES: Okay, got you. Next question was up at the top of page 2, so if we have a total of 6.2 MGD in terms of daily regional demand that means roughly 4.1 was coming from the Santa River and/or wells in the City and the County?

MR. SUGRUE: Correct.

MEMBER IVES: Okay. And then down at the bottom, just a follow up question on the shift from La Niña to the neutral conditions, do we have any sense of if and when that will impact precipitation in terms of what month of the year and any sense of how much precipitation that might affect?

MR. SUGRUE: It's pretty broad. They are just estimating as they go based on temperatures in the Pacific. I don't have anything else to say.

MEMBER IVES: Got you. Fair enough. Thank you. Thank you, Madam Chair, that's all I had.

CHAIR HAMILTON: Of course. Are there any other questions? Thank you. Thanks so much.

B. Report from the Facilities Manager

MR. CARPENTER: Thank you, Madam Chair and members of the Board. I just have a couple of quick updates for the Board. We've been struggling for months to fill some vacancies that we have in the maintenance department. I think we have five vacancies right now. The good news is that we were able to advertise two of those positions. They close either today at the end of the day or tomorrow. And I have asked for an update and an expedited list of eligibles for those positions and our goal is to make those hires as soon as possible. So we are well on our way there.

Also, a position that we call the Warehouse Planner Tech that is also currently advertised and it closes on the 8th of this month and we'll be asking for an expedited list of eligibles for that as well.

Lastly, I try to give an update to the Board each month on the status of where we are at with the settlement funds and the engineering RFP and things like that. So proposals were received. The evaluation committee for those proposals will meet on March 10th. Final selection by the committee is scheduled for March 14th and the goal is to bring a contract back to the Board at the April Board meeting. So we'll be off and running in that regard after a long delay.

That's my report and I stand for questions.

CHAIR HAMILTON: Excellent. Any questions? No questions. Thank you very much for that.

C. Report on February 27th Fiscal Services Audit Committee (FSAC)

ANTOINETTE ARMIJO-ROUGEMONT (BDD Accounting Supervisor): Good afternoon Madam Chair and members of the Board. We did hold a FSAC meeting on Monday, February 27th at 2:30 via zoom. In attendance were Rick Carpenter, Councilor Romero-Wirth, Chair Hamilton, Nancy Long, Jesse Roach, Stephen Raab and myself.

We discussed two items on today's agenda which were the request for approval to award the RFP for legal services to Long, Komer & Associates. They were selected for another four-year term to begin this month in March. There was some discussion about how the budgeted amount would be distributed between both POs for the fiscal year and the calculation was based on averages of the invoices that have been paid so far this year. The current PO will be closed out once the February invoices are paid and then the new PO will be opened.

The second item we discussed on the agenda was the Major Repair and Replacement revised policy which has been pulled from today's agenda. It was determined, after much discussion that this item was not ready to be presented today. We received some last minute changes and we will meet again on the 15th to review the final changes and bring it back to the Board for approval at the April meeting.

We also briefly touched on the budget and Major Repair and Replacement contribution which has been sent to all of the partners for review and it's also been revised based on recommendations that we received and the Major Repair and Replacement is expected to be presented with an annual plan for the plant's major repair and replacement needs. Due to lack of funding and the potential salary increases for next fiscal year, we plan

to bring both the fiscal year 2024 operating budget as well as the major repair and replacement fund contribution to the Board in April. It may be a handout just depending on when we receive the information from finance.

That's all that I have. Does anyone have any questions?

CHAIR HAMILTON: Any questions? Thank you.

D. Presentation regarding *WildEarth Guardians v. US Fish and Wildlife Service and US Bureau of Reclamation*, Case No. 1:22-cv-914

MR. HARWOOD: Thank you, Madam Chair. A quick update on the WildEarth Guardians' minnow lawsuit which named Bureau of Reclamation and the US Fish and Wildlife Service. The Middle Rio Grande Conservancy District has intervened successfully in that case even though they weren't initially named. And the parties immediately asked for a stay to negotiate a settlement which is possible. So I will bring back news in the future when there is more to report unless the Board has any questions.

CHAIR HAMILTON: Are there any questions of that piece before Kyle goes on. What prompted – why did that intervention prompt a request for settlement?

MR. HARWOOD: They may have been planning on settling anyway and they were coincident. I mean having settlement discussions, that's a long way from settling as we all know. I will continue – this update is part of a quarterly update on such things and I'll continue to do it in that way unless the Board directs otherwise.

CHAIR HAMILTON: Sounds good.

E. Presentation of Rio Grande Water Quality Update pursuant to BDDB Resolution No. 2022-2 for calendar year 2023

MR. HARWOOD: In your packets you have the memo that we discussed at some length last year during several Board meetings which is responsive to the resolution that this Board passed and the resolution which I may have sent you electronically but now you also have it in this packet, it's the last two pages of this packet item, and that's the fully-signed recorded resolution for your records which is 2022-2 and that resolution directed in section 9, on page 8 of this packet, it's the second page of the resolution talks about first calendar quarter of this year we'll review the prior year's water quality issues and BDDB actions and we'll also present on the anticipated water quality issues for the current calendar year so the BDDB may prioritize its engagement with those issues. And then, as always, we will periodically bring updates to you when something is pertinent and relevant. That is the context that hopefully all of you remember from a couple of months ago. So the main packet item is that same memo. You'll recognize many of these topics because we sort of did a version of this memo about a year ago which was the introduction to the resolution process we all went through. A memo like this came to you, we engaged in the resolution and then the resolution calls for this kind of a memo to happen annually and that's what we're doing today.

So with that context, if you'd like me to just quickly take you through the topics and I'm going to primarily run down to the recommendation section because I think a lot of you have a working knowledge of most of these topics. I do want to do this efficiently and stand

for questions as soon as possible. And, Madam Chair, I do think it makes sense for folks to ask me questions as I'm doing each one if that's okay or if –

CHAIR HAMILTON: Yeah.

MR. HARWOOD: So the first item is the long standing Memorandum of Agreement that this Board has with LANL. We had a lot of activity last year. We are expecting less activity this coming year. The activity last year, if you all remember, is getting a new stormwater gauge down where LA Pueblo Canyon meets the Rio Grande so that we can more accurately than the gauging system that we have had for years, know when storm flow is in fact reaching the Rio Grande. And that was a big part of last year and so the top of the second page is where the recommendations for this item primarily are articulated. We have an annual review according to the MOU which is a staff and consultants meeting with our peers at LANL and we've already got the planning underway for that. It will be in either April or May.

This Board asked for a tour of the Early Notification System last year. It wasn't something that we were able to organize last fall. I have already started the ball rolling to try and get a tour organized for this spring but I'd love to know from the Board your level of interest in doing a tour. It would likely be April, May at the earliest. After the session, before the summer, every month is crazy as we know these days. But if that is of interest, it would be great to get a sense of who might want to go on a tour. [All present Board members indicated a desire to tour the system] All right, so we'll go ahead and continue to work on scheduling a tour with Mr. Mikolanis and his staff to take a look at the Early Notification System and that should be – those are always very informative because there is nothing quite like seeing a thing to understand how it works.

CHAIR HAMILTON: Are you still on that same topic because I know we have at least one question on that before you go to item 2.

MR. HARWOOD: And I was just going to say as the end of this recommendation section notes, the Intake Sampling Program will continue with the grant money we received under the MOU. I would be happy to take any questions.

CHAIR HAMILTON: Commissioner Hansen.

COMMISSIONER HANSEN: I was wondering if the Board would think it would be appropriate for Mr. Mikolanis to come and give a presentation to the Board? We've done this in the past.

MR. HARWOOD: Are there particular topics that you'd like us to ask him to present on, Madam Commissioner?

COMMISSIONER HANSEN: The hexavalent chromium plume and chromium-3. I think it might be advantageous to have both NMED and Mr. Mikolanis come. Maybe not at the same meeting but at different meetings.

MR. HARWOOD: Very good. And we will address the chromium-6 remediation well protest later in the –

COMMISSIONER HANSEN: I know. I saw that. I just since we were on the MOU with DOE, I thought I would bring up that suggestion of having him come and speak now.

MR. HARWOOD: I would be happy to communicate that request to LANL if it's the wishes of the Board. Okay. I don't think we need a vote but I'll request it and work with the Chair on the agendas as we do in the normal course of informational items if that is

acceptable. Okay. Great. Any other questions about the MOU which as we all know is one of our main pillars of water quality for the Board.

The next item which you've heard about over the years is NMED's Triennial Review of the state's surface water quality standards. I should also note that we have our two amazing consultants on technical issues here with us today, Mr. Lazarus and Mr. Bearzi. So if you want to hear from the technical side, please don't hesitate to ask because they are here for this matter this evening.

We understand that the Triennial Review will be initiated this year in the normal schedule but probably not public involvement until next calendar year and that's the normal sequence of things it is called the Triennial Review. And we hope to monitor that process as we have in the past and bring to the Board issues of concern that they Board may want to speak to and I'll leave that one there for now unless there are any questions.

COMMISSIONER HANSEN: I'll just comment that I think it was very beneficial for us to participate in the Triennial Review and I want to thank Mr. Bearzi for his comments at the Triennial Review which were, I think, very important.

MR. HARWOOD: Yes. I think it was a good round of engagement and it's important for us to participate in that. There's only a couple of water projects in the state, drinking water project I should clarify, that divert directly out of flowing rivers and many of them don't have, in Albuquerque's case, Cochiti upstream from them to mitigate the system wide issues. The San Juan Water Commission, the BDD and other entities do participate in that and that seems very appropriate given the nature of the regulations that they are reviewing. Very good.

With respect to WOTUS there is a lot going on, with respect to Waters of the United States under this federal administration and the challenges to that rule set and I think we will bring you some news on WOTUS when there is something emerging from the fog. That's the best way to describe it. There's a lot going on that we are very loosely monitoring. We are not spending a lot of time on it because there are so many threads running every which direction with litigation and threatened litigation. So when there's more to come – I guess I should say that the Biden Administration did reset the WOTUS issue back to something more conservative and protective. That probably was the first sentence I should have mentioned but it's getting challenged around the country. Are there any questions on WOTUS?

COMMISSIONER HANSEN: Madam Chair, so I appreciate you following up on this. It will go into effect on March 20th this month and it was a hot topic at NACo but it does really protect us at the moment. We regained 90 percent of our protection that we had lost under the Navigable Waters Rule. So it's good for us not so good for people who don't want regulation but we'll see where it goes and thank you for keeping an eye on it.

MR. HARWOOD: Thank you. Any other questions from the Board regarding WOTUS? Sorry if I went too quickly there. Okay, very good.

The next item is a regular NMED report regarding stream segments and the applicable standards to those stream segments. As some of you know, we've engaged with NMED on their delayed implementation of what are called "TMDLs," total maximum daily loads and how that might be implemented to improve water quality in general. And just jumping down to the recommendation section on this is that the new integrated report process for the 24 to 26 timeframe will be initiated sometime this year and we will monitor

that for issues of concern to the Board. We don't quite know what the new report will address that will be of interest but we'll bring you back an update on that when it becomes clearer. Are there any questions about the integrated report process?

Next one is we generally try to monitor LANL's NPDES permits especially if they're in the half of the LANL campus that drains to the Rio Grande above the BDD intake. We've come to you in the past with proposed comment letters that have gone in and I think that those have been useful. We don't know of any specific actions on that front for the near term but we will again bring you any updates as those permit changes or additions or new permits come to light. Any questions on that?

COMMISSIONER HANSEN: Thank you, Madam Chair. On that issue, when I was in D.C. I did speak with EPA and EPA is coming here at the end of the month to meet about a number of different issues and since they oversee all of our NPDES permits, I'll just ask them if there's any updates when they're here.

MR. HARWOOD: That would be great. Very good.

The next one is a little bit of trouble but there is an NMED LANL consent order process that we've briefed you on the past and you've had guests to the Board, like some of the NGOs that have come and spoken to you about these consent order issues. We continue to hope that we would like to see some changes made at the consent order. We're not a party to the consent order so our input is important but not essential in this process so we will continue to monitor this litigation. We don't expect any specific action but as this matter continues forward we hope that some of the requests we've made at NMED will be accommodated. As you may or may not know, there have been a number of folks departing NMED over the recent months including the lawyer that we worked with on this matter, John Verheul, he has gone on to work at PNM. So we will continue to monitor this matter and bring you any updates as appropriate. Is there any question about – this is a little bit of a black box but we keep it on the list because it is of significant importance if a settlement has come forward on this particular topic.

CHAIR HAMILTON: Yes, Mr. Ives.

MEMBER IVES: Thank you, Madam Chair. Just one quick question which is, is it unusual for NMED not to provide any response for such an extended period of time?

MR. HARWOOD: This is another series of stays that apparently are providing space for negotiation of some kind and it is not – since we're not a party we don't really learn much until that process is concluded and with the change in staffing I'm not exactly sure where it is and what its schedule is. We do an annual meeting with NMED leadership that we're trying to organize and we will ask after this topic when we meet with them.

MEMBER IVES: Very good. Thank you. Thank you, Madam Chair.

CHAIR HAMILTON: Thank you.

MR. HARWOOD: Any other questions on this particular item? Okay. I am happy to report that we are halfway through. The next item is one that we are expecting some activity on this calendar year. LANL after much delay and some obfuscation I think, did decide to initiate a Sitewide Environmental Impact Statement for the lab and the draft Sitewide Environmental Impact Statement is expected to be released for public comment sometime in the middle of the year so we are planning on bringing that to the Board. When we submitted our comments we tried to request that an extended comment period be provided since for organizations such as ours that meet monthly, a 30- or 45-day window

can be a real burden because we rushing to bring it early or at the last minute or god forbid a special meeting so that we can be timely on whenever they happen to start their deadline. So we are very much hoping that they'll give, I think we requested a 120-day window to comment so that we can come to the Board in a measured way and get your feedback on that process. So this is one that, unlike many of the other ones I've already referenced, this is one that we are planning on budgeting to participate in and we'll let, of course, the Board direct us on how to participate in that process when it becomes a little clearer.

CHAIR HAMILTON: Kyle.

MR. HARWOOD: Yes.

CHAIR HAMILTON: Weren't there scoping comments provided.

MR. HARWOOD: That's what we provided.

CHAIR HAMILTON: So do you know whether they took any of those responses or – the next thing we'll see is the draft report itself.

MR. HARWOOD: We know we got them in on time. They don't really tell you what they're going to do about them until they do the next step.

CHAIR HAMILTON: They just do it. They don't have to provide a comment response thing as part of the process? Okay.

MR. HARWOOD: They will have to provide the comments they received and their response to them in an appendix to their draft and then final. So we will see all of our comments and everyone else's comments. When we do these ourselves, when Rick and I did the EIS for this project, there's an art and a science to responding to comments as we know.

CHAIR HAMILTON: I'm quite aware of that.

MR. HARWOOD: I expect we'll experience the same and we'll need to, obviously, respond appropriately and hope to get our questions answered.

CHAIR HAMILTON: And how that art is applied can be the light side of the Force or the dark side of the Force. Commissioner Hansen.

COMMISSIONER HANSEN: So on the topic of NNSA, I also had the pleasure of meeting with under secretary Jill Hruby when I was in Washington, D.C. and I specifically asked her to come here and do a townhall on definitely the surplus plutonium but also anything constituents in New Mexico are concerned about. And lo and behold she agreed to come here and she will be here on April 6th and the townhall will be the same day as our meeting but it will be from 6:30 to 8:30 and I'm hoping that it will be at the Convention Center. But I have been very clear with them about the type of townhall that we need to have here for constituents to be able to participate. One is that participants are allowed to ask questions and that those questions be answered at the time that they're asked and not written on cards and not selected by the people who are running the meeting. So they have agreed to all of those things and the fact that the undersecretary for NNSA is coming here I think is a big deal.

CHAIR HAMILTON: Could you do us a favor and maybe send the date and information for that meeting to the Board?

COMMISSIONER HANSEN: Yeah, but it will be April 6th the same day as our next meeting and I will be sending out a newsletter, obviously, and I'll make sure that the Board gets all that information.

MR. HARWOOD: Maybe we can have pizza and beer and then go to that.
[laughter]

CHAIR HAMILTON: We'll set the agenda accordingly. Mr. Ives.

MEMBER IVES: Thank you, Madam Chair. Kyle, if we've submitted recommendations on the scope presumably the DOE would be contracted with somebody to perform the environmental impact and do the reporting. Is it something that we can FOIA and –

MR. HARWOOD: Jay, do you happen to know anything about the services for that? No.

JAY LAZARUS (Glorieta Geoscience): I'm Jay Lazarus, Glorieta Geoscience, thank you. Generally, the lab has the choice of doing it in-house through NNSA or they hire outside contractors to do it. That's their choice on how they want to do it. It will probably be done in-house is my guess.

MR. HARWOOD: That's my understanding at this point is that they are proceeding, at least so far, with in-house staff and we'll let you know whether there's an outside contractor or not. I think a lot of those materials are generally protected as draft until they're released.

CHAIR HAMILTON: That would be typical.

MR. HARWOOD: We can always FOIA stuff after the fact and see all the gory history that led to the process.

MEMBER IVES: It just seems to be besides the point to wait for the report to see whether or not anything made it in there.

CHAIR HAMILTON: It is a catch-22; isn't it?

MR. HARWOOD: Yeah.

MEMBER IVES: I know that drafts are protectable generally under IPRA but –

MR. HARWOOD: Yeah, you know, it's funny being on either side of these NEPA procedures you – the NEPA procedures themselves try to balance out opportunities for input but then letting folks turn the crank but NEPA doesn't on its own select alternatives. It is providing the background for an alternative selected. I suspect they got a fair number of comments and I suspect that we'll be talking about this in some detail later in the year. Is that okay for now?

MEMBER IVES: Thank you, Madam Chair.

CHAIR HAMILTON: More questions on this? Okay, than k you.

MR. HARWOOD: Number eight is kind of like the LANL discharge permits where we keep an eye on them and recommend comments where we think it's appropriate. This is not a LANL permit directly. This is a Los Alamos County MS4 permit and we'll continue to monitor the development of that permit. This is again related to stormwater and sewer interconnections and – I'm sorry, let me not stay that.

This permit deals with the stormwater discharges in the county outside of LANL as the description here describes. So we will be monitoring this permit and bring you back any updates or any other opportunities to contribute to that permit. Any questions on the MS4 Los Alamos County permit?

Next is we did approach the Office of Natural Resources Trustee, that was already two years ago, a year and a half ago now, and we have shared with them some basic information that fits into their rubric which is looking at harm to natural resources and I don't think we are expecting anything in the near term on that. That tends to be a very, very slow process. And if there is any feedback from the Office of Natural Resources Trustee on

evaluating NRDA claims and incorporating the affects of LANL on the Rio Grande we'll let you know. Any questions on that initiative? Okay.

Number 10, there was a consent order entered into the Nuke Watch litigation against LANL and in that settlement agreement the new gauge was described which we have successfully installed. So that's that one unless you have any questions.

CHAIR HAMILTON: Commissioner Hansen.

COMMISSIONER HANSEN: Thank you, Madam Chair. So I want to thank Nuke Watch for making that valiant effort to make sure that we got the flow station and that that was part of their lawsuit for us to be able to get that even though DOE EM pretended like they were being really the good guys when they knew that this was coming.

MR. HARWOOD: Yes, I will email them and convey the Board's thanks for including a BDD issue in their settlement agreement.

COMMISSIONER HANSEN: Yeah, I think it was incredibly generous of them.

MR. HARWOOD: Excellent. And now we get down to the last couple. The next one, if you remember some years ago now we noticed a legal notice in the newspaper which is a required step for a State Engineer application and it described the remediation wells for the chromium-6 plume and we felt that that application was missing some very significant pieces. So both this Board and Santa Fe County separately filed protests against that water right application because on the face of it, it contemplates diverting quite a bit of water much closer to the river and then the application as it was filed didn't describe the reinjection. Fast forward to the last couple of months and that reinjection has been in the paper, I think you all know, a couple of times. NMED has directed LANL to cease that part of the process and they are and I understand the late breaking news they're waiting to get an answer back from LANL that they are in fact going to cease that reinjection. And so this State Engineer protest which has been long simmering and which we had hoped several times last year was getting close to settlement seems to be kind of appropriately delayed until NMED and LANL can figure out what the remediation program is going to be and then whether there are changes to the State Engineer permitting and whether they will need to start over again or amend their current permit and that will have implications for our protest. So we will bring that whole story back to you when there's more to know. But that whole story has definitely gotten – I shouldn't say story. That whole program has gotten very complicated recently and we probably need to let the actual remediation plan get to a place where both the regulator and LANL know what they're doing and then we'll see what implications are for the State Engineer permitting will be.

CHAIR HAMILTON: Before I got to Commissioner Hansen because she has a broader question I'm sure. But specifically, are you saying that despite the protest for the application to do these – to operate these wells, they have been operating them?

MR. HARWOOD: Yes, ma'am. I'm sorry if I didn't add that piece of –

CHAIR HAMILTON: Isn't that a little bit egregious?

MR. HARWOOD: Well, no. They are operating under an emergency authorization. They are operating under an emergency authorization that they applied for and was granted. It's the full permitting of the remediation wells both diversion and injection that was legally noticed and protested. So, yes, it – how do I say this – certain projects are eligible for emergency authorizations and will operate under emergency authorizations for awhile. This was deemed by the State Engineer to be one of those

projects that was eligible for an emergency authorization in part because they needed to collect the data to refine the reinjection plan. At least that was one of the reasons early on. Then they kept delaying and now we find ourselves where we are now that that are real concerns that the injection is added to the problem and not helping to fix it.

CHAIR HAMILTON: And that was part of the basis for having the protest in the first place because the wells are closer to the river and whatnot. That should have been obvious and they nevertheless granted emergency operation anyway?

MR. HARWOOD: Yes.

CHAIR HAMILTON: Mr. Bearzi, are you surprised at this?

JAMES BEARZI (Consultant): No, ma'am.

CHAIR HAMILTON: Okay, thank you.

MR. HARWOOD: I think at the time, part of the emergency authorization was that this is a plume that is moving and that they should get started trying to remediate it.

CHAIR HAMILTON: By increasing the problem – yeah, that makes total sense.

MR. HARWOOD: That wasn't the plan, I know. And of course there is what we call "LANL Time," right where everything seems to take so much longer than it ought to or could. So we're now multiple years into the emergency authorization on finding these problems with the remediation plan.

CHAIR HAMILTON: Okay. Commissioner Hansen.

COMMISSIONER HANSEN: Thank you, Madam Chair. So since we're under this emergency authorization, don't you think that we should be testing for hexavalent chromium in our wells and BDD? And get information from NMED, like where is – is the hexavalent chromium in the Buckman Wells? Is the hexavalent chromium moving down towards the river? These are all unknown questions.

MR. HARWOOD: As you know, with respect to the Buckman Wellfield that's a City facility and we should really have someone from the City answer questions about chromium-6 and the groundwater because that's not something we work on directly and I try not to, if I can, to not give answers to City staff because I'm not in those conversations these days. With respect to chromium-6 discharging from groundwater to surface water in the vicinity of the intake – Rick, do you want to say something about that?

MR. CARPENTER: We're tracking it. The City is tracking it through their water resources program. We've had numerous conversations among the esteemed technical experts and it's something that we're following very closely.

COMMISSIONER HANSEN: Okay, because hexavalent chromium has an ability to move and travel and just because there's a plume somewhere doesn't mean that that plume hasn't seeped down to somewhere or moved into somewhere else so I think it's due diligence for us to know what's happening.

MR. CARPENTER: I couldn't agree more. As far as the Buckman Wells are concerned that's what the City's resources group is following directly. The BDD I think should be probably more interested in whether or not or the extent to which there is surface water groundwater interaction that could involve that plume.

COMMISSIONER HANSEN: I agree. I think that's definitely necessary. And even knowing what level of chromium-3 is in the mix because that's supposedly what they are diluting the chromium-6 to chromium-3 even though chromium-3 is not as toxic

chromium-6 is very toxic. And I'm using the words chromium-6 and hexavalent chromium interchangeably because they're the same thing.

MR. HARWOOD: If it's okay, Madam Chair, I think this probably is one of the topics that we should bring back an informational half-page memo on or something in the near term if that makes sense.

CHAIR HAMILTON: If the City cares to share data and that's an appropriate thing to do. If NMED is not sampling in surface waters and – I would think that our colleagues from Glorieta Geoscience would actually know if there are any studies on – and Mr. Carpenter might know himself – surface water groundwater interactions in that vicinity.

MR. HARWOOD: My suggestion, if it's okay, Madam Chair, is this update was really on the State Engineer permitting related to the chromium-6 project and the water being withdrawn much closer to the river. I think what I would like to recommend if it's okay is that we bring you back just a quick update on what sampling is being conducted so that you'll understand that piece of these questions, if that's okay.

CHAIR HAMILTON: Sure. Sounds great. Thank you.

MR. HARWOOD: Almost done. We –

CHAIR HAMILTON: Oh, I'm sorry. Mr. Ives, I apologize.

MEMBER IVES: No worries. It was a late question. Thank you, Madam Chair. In the past my recollection is that the director of environmental services at LANL has indicated that there is no hydrologic connection between as a geological circumstance was always my understanding between the plume and certainly Buckman Wells. It sounds like that is not necessarily so clear anymore. So if we do have any look-see I'd love to have somebody address the geology so we can understand that. Surface discharge is obviously a different circumstance in terms of entering the river. But I'd love to have an update on that because that is my specific recollection of what we've been told in the past at different meetings. So if we could include that that would be great.

MR. HARWOOD: Thank you, citizen member Ives. I will pass that on and hope to get the question related to the City wellfield answered by City staff and then we'll bring you back a short summary of sampling activities if that's okay.

MEMBER IVES: Yep. Thank you and thank you, Madam Chair.

CHAIR HAMILTON: Thank you.

MR. HARWOOD: Any other questions on anything before number 12? Okay, number 12. Primacy, we often raise with NMED leadership that we really think it would be appropriate if New Mexico had primacy and I think with primacy under the Clean Water Act, I think my observation today as with some of the important staffers that were working on that topic who have departed, I think we're going to find this item is probably delayed again. There was a report prepared on funding and FTEs required to take over primacy and it's a daunting project for the state but when we have our leadership meeting with NMED we will get an update and report it back.

CHAIR HAMILTON: So a quick question. I saw that and I don't remember that report. If we got it and you distributed it, I failed to look at it. Do we have that?

MR. HARWOOD: We got it from staff after our leadership meeting in August and I think we didn't forward it because it's like a big, thick programmatic staffing report.

CHAIR HAMILTON: Didn't have an executive summary, maybe.

MR. HARWOOD: I am happy to send it to the Board. I didn't do so then because it seemed to argue the case of how hard it was going to be for New Mexico to actually do primacy. But that was not a good reason to not send it to you. So let me forward it to you now.

CHAIR HAMILTON: That's great. Thank you. Commissioner Hansen.

COMMISSIONER HANSEN: The other thing I mentioned to EPA when I did meet with them in D.C. was that they should think about funding primacy for us since New Mexico –

MR. HARWOOD: For BDD?

COMMISSIONER HANSEN: No, for the state.

MR. HARWOOD: Oh, I see. I'm sorry.

COMMISSIONER HANSEN: For the state to have primacy and for them to help create that because we are under their auspices at the moment.

MR. HARWOOD: I am sure they loved that idea.

COMMISSIONER HANSEN: They loved all my ideas including the idea of moving us out of District 6.

MR. HARWOOD: Lots of institutional moving parts there that have been long stuck and if there's any movement, we'll bring an update back to the Board.

COMMISSIONER HANSEN: And if the Board doesn't understand, District 6 – we're in the same district with Louisiana, Texas and Alabama –

CHAIR HAMILTON: Oklahoma.

COMMISSIONER HANSEN: Oklahoma and it seems that we should really be in the same district with at least Arizona and Colorado and Utah, or something like that. They did like the idea of a four-corner district.

MR. HARWOOD: When you overlay the way that all of these federal agencies set up their districts, the BLM, the Bureau, the Corps, EPA, Fish and Wildlife Service – it looks like one of those prints where you're suppose to see multiple figures if you blur your eyes. \

Lastly, we come to the PFAS monitoring item. We think that PFAS may be an issue of higher profile this year given what's going on generally and also with respect to LANL's annual data reports regarding PFAS. This is a very important issue and one that we think will probably be moving forward this year. So it is on our work plan and I don't have a lot of specifics to share with you today but this is one of the two or three topics out of these 13 items that we do think will be active this calendar year. I don't know if you have any questions right now. This is one that we're developing –

CHAIR HAMILTON: Mr. Ives, we'll just work our way down.

MEMBER IVES: Thank you, Madam Chair. Kyle, a couple of questions. First I'd love to see the annual data report so I can understand this better because it does sound like an issue of significant concern. In the brief statement here you indicate that they sampled 15 locations in terms of putting data together for that report. Three of which were supposed to be in the Los Alamos Canyon Watershed. and it states, none of which were sampleable – able to be sampled; why not?

MR. BEARZI: Good evening. I am James Bearzi one of the technical consultants. I took a look at this report which was part of a settlement agreement on one of the protests to the state certification of the NPDES permits for the stormwater. So that's one

of the reasons we pay attention to that. So to try to clarify, as part of the settlement agreement the parties, which would be LANL and NMED, agreed on 15 locations to sample. Only three of those locations were sampleable because there wasn't flow or there were other problems at the other 12. And none of those three samples were in the Los Alamos Watershed. So that's the answer there. There was one Ancho Canyon and two in Sandia.

MEMBER IVES: Would there be no way to do sampling showing the presence of the PFAS through other mechanisms? Sampling, for instance, dirt as opposed to actual flow?

MR. BEARZI: This was settlement of the stormwater NPDES permit so it is specifically targeted at sampling stormwater that runs off of solid waste management units that are in the hazardous waste facility permit so it has to be stormwater. It has to come from one of these solid waste management units. LANL has done a bunch of sampling on soils and sediments but it is not in this particular data report that we're talking about tonight.

MEMBER IVES: Do you know whether those other sampling regimes have found PFAS in soil samples?

MR. BEARZI: I do and they have, sir. In fact, if I could just add to that, the three stormwater samples that they were able to take even though they are not in Los Alamos Canyon, you may recall that two of the PFAS have EPA Drinking Water advisory levels. Three of the PFAS are toxic pollutants under state Water Quality Standards. All three were detected at one or more of these three samples. And one of them, known as PFOA was detected at a concentration that is above the drinking water advisory level. This is stormwater, nobody is going to be drinking stormwater. But it does show that it's there and in more than just detectable concentrations.

MEMBER IVES: And were the three samples that were able to be taken upstream from any introduction of stormwater from any LANL facility?

MR. BEARZI: These three, remember all of these proposed locations including the three that were sampled are sampling stormwater running off from solid waste management units which means they're polluted sites. Now, no one prior to 2016 nobody thought about PFAS. But the chances that LANL, industrial or waste disposal practices have created PFAS reservoirs, as it were, doesn't really come to any surprise to anyone who is an environmental professional looking at this. No surprises just disappointment.

MEMBER IVES: Well said. I was going to ask as a follow-up what's the threat level given those samples but it sounds like if they are described as toxic and there is a good potential that there would be a significant impact there.

MR. BEARZI: That's right. The framework for the sampling is like with an NPDES permit. So if they find something that shouldn't be there in the contaminants, then they have to build these best management practices of BMPs. So they have to control the stormwater, keep runoff from happening and build physical things to keep the stormwater from running off. It really isn't a risk reduction exercise. It is more of a stormwater and sediment migration mitigation exercise.

MEMBER IVES: So does the report address what is proposed by way of remediation or management and what those best management practices are or would be in this case?

MR. BEARZI: No. It is just a data dump.

MEMBER IVES: Thank you.

CHAIR HAMILTON: Thank you. Councilor Romero-Wirth.

COUNCILOR ROMERO-WIRTH: I have a question when we get done with this one.

CHAIR HAMILTON: With PFAS? Are there any other PFAS questions? I was forwarded a link to a new study which showed PFAS at unexpectedly high levels from waste water treatment plants source being toilet paper in the paper pulp processing PFAS use as a hydrator and to make the pulping process more efficient. And so they're finding contamination from PFAS in treated wastewater. So I'm wondering what the implications in the short term are going to be of that study in terms of – and given the interest in PFAS, it is certainly an interest to BDD since we're downstream from the Española wastewater treatment plant and the City pipeline might take treated wastewater and put it upstream of our intakes. Oh, wait it's putting it right downstream, still putting it in the water, but you're right it is immediately downstream. My bad.

MR. BEARZI: My comment would be more of an anecdote. I noted that one of the most serious PFAS contamination problems in the country is in the State of Maine and it was due to state sanctioned and urging people to use biosolids on their farms. And the biosolids come from wastewater treatment plants and it was chock full of PFAS, as they say technically, and contaminated a number of agricultural operations including a major dairy that has since been put out of business which is another linkage with the State of New Mexico.

CHAIR HAMILTON: So this is apparently a concern in the [inaudible] primary and in toilet paper made from recycled papers for the same reason. This is a concern that I had not ever anticipated and it seems like a big one. I will forward the link around.

MR. BEARZI: And if I can add that paper is something to pay attention to. The incinerator ash pile by the Los Alamos airport is an old solid waste management unit that had screaming high PCB levels. They got it cleaned up and nobody could figure out where it came from and it turns out that in the '50s the sole source for paper for Los Alamos company had a process for making paper that used a lot of PCBs and all of that paper got incinerated and dumped off the side of the canyon. So not a surprise again just another disappointment.

CHAIR HAMILTON: A new philosophy. Any other questions on this? Mr. Harwood, does that wrap it up for you?

MR. HARWOOD: Yes, Madam Chair. That completes my memo. I think I have stood for questions so I think I am done.

COUNCILOR ROMERO-WIRTH: Not quite. Not quite, Madam Chair.

MR. HARWOOD: Oh, sorry.

CHAIR HAMILTON: Councilor.

COUNCILOR ROMERO-WIRTH: So this is the first time that we've seen this memo in conjunction with the resolution that we passed and I guess I would be curious – well just a couple of things. One, I think it would be helpful if from one year to the next have whether it's the proceeding year's list just so we can see year-to-year what's changing and how your shifting the direction. And then I don't know – again, the whole idea behind the resolution was really to kind of direct in a constructive way where the Board should be focusing attention and making sure that we don't – I mean there are so many things and we're all very curious and you know we probably could quickly get astray from what we

really need to be concerned about in terms of the risk assessment and where we should be putting limited resources. So, I guess I don't know whether each one of these things if you can pinpoint to the resolution kind of how it fits under what we said we wanted to be looking at. And I guess I would also be interested if while a lot of this stuff is nothing specific at this point, just sort of keeping an eye out, maybe it's all fine. Jay, do you have a – have you looked at this? Do you have thoughts about whether we're capturing where the Board's attention should be. Are we casting the net too far? Not far enough? Just right?

MR. LAZARUS: Thank you, Councilor. I go back and forth on it. I like the way that the memo has been structured with specific items recommending action, and specific items recommending no action. And I think you're on the right track to compare it year to year to see if the action items need to be continued for action. If the no action items remain that way and if there's other items that we need to bring to you. So I think that's a great idea.

COUNCILOR ROMERO-WIRTH: Okay, and would you advise anything else we ought to do – again, to make sure that we're really targeting our focus in appropriate ways given the type of facility we are and where we should be focusing our attention.

MR. LAZARUS: I think really the type of facility LANL is guides us to where we should be focusing our attention.

COUNCILOR ROMERO-WIRTH: Okay.

MR. LAZARUS: The wastewater treatment plants upstream are all in compliance with their permits – I can tell you the Abiquiu plant is not in compliance with its permit, they're on a notice of violation but that's further upstream on the Chama. But I think the focus should be on both Los Alamos and Los Alamos County. Los Alamos County more because of the stormwater and then, of course, the protest on the chromium-6 plume.

COUNCILOR ROMERO-WIRTH: Okay.

MR. LAZARUS: Thank you.

COUNCILOR ROMERO-WIRTH: Thank you. I think that's – although I guess I am kind of curious, besides the year-to-year if we wanted, and I don't know that I want to go through, we passed a resolution and I want to make sure that it's connected to your memo and that we don't – that the resolution doesn't become just something that is out there but that we – when you put this together did you reference the resolution in your mind that these things fall under the things that we have acknowledged in the resolution that should be of concern to us.

MR. HARWOOD: So Madam Vice Chair, I think that since we are sort of doing this for the first time these are all really wonderful questions for sort of focusing the work that the resolution directs us to do. So this memo perhaps is doing two things: it's both kind of reminding us the issues that were on this same memo a year ago and then it's talking about which topics we expect to have activity on at this point in the year anyway and the coming year. And so I think what I understand you're asking there are sort of several pieces, right. We may bring you something in May or September and we may want to capture that and we'll want to next year show you progress from this memo. What's fallen off the list, what's come on the list, what have we updated you on between the two resolution directed updates, it'll happen in the first quarter of each year. And so I think I understand what you're getting at and this memo doesn't do that so I need to do that in order

to show that continuity and so this becomes a working work plan, a functional and transparent work plan for the resolution's goals.

COUNCILOR ROMERO-WIRTH: Okay. And it is the first time that we've had it in connection to the resolution. So I just want to make sure that this is an evolving thing, for sure. I think having the context in time and across years would be helpful.

MR. HARWOOD: What I'd like to suggest, if it's okay, because as we all know, Councilor you were one of the driving forces behind the resolution, maybe if I could get a couple of minutes of your time to map out a tool that will help us track this and you and I could just talk about that and we could bring something back to the Board for their update.

COUNCILOR ROMERO-WIRTH: Right. And last year's memo didn't have the benefit of the direction that is in this resolution too. So there might things that as a result of the resolution that don't fit anymore and was part of the reason for the resolution.

MR. HARWOOD: Right. So part of what I'm thinking in my mind is there's some kind of easily digestible code that maybe is at the bottom of each item next to the recommendation that tells us, Hey, this has been on the memo for three years and it's still important or a list of the things that have fallen off the memo because they've moved on. So there will be an easy way to track those but if I could get a minute with you to just sort of talk through that then make sure that what I bring back to you is what you're requesting.

COUNCILOR ROMERO-WIRTH: Okay. I think that's all I had. Thank you, Madam Chair.

CHAIR HAMILTON: That was good. Great, thank you.

MR. HARWOOD: Thank you, Madam Chair and the Board.

7. ACTION ITEM: CONSENT

A. Request for approval to award RFP 3/29P to Long, Komer & Associates, P.A. to provide legal services for the Buckman Direct Diversion Board and for a total amount of \$120,000.00 plus NMGRT tax for the remainder of Fiscal Year 2023

CHAIR HAMILTON: This is the item that we pulled from consent regarding the contract for Long, Komer & Associates; right? There were questions? Mr. Ives.

MEMBER IVES: Thank you, Madam Chair. And it's just a question really on format and possibility. And it's probably a question to Ms. Long. I'm looking at page 9 under what is section 18, insurance, C.3 it identifies professional liability for the contractor and all contractor employees who perform professional services. It later on in that same paragraph under G it says that each policy shall expressly provide an endorsement and an endorsement shall be submitted to the BDD of the policy or policies providing coverage, and here it states for commercial general liability must be endorsed to include additional insurers. And I just wasn't sure about each policy reference and then the reference to the commercial general liability because as far as professional liability insurance I don't think you can – at least I've never seen an endorsement like that.

So just to make clear that we're specifically talking about only the commercial general liability as opposed to broadly stated each policy and that was my only concern.

MS. LONG: Yes. Madam Chair and member Ives, you are correct I do not think that professional liability insurance could be written to include an addition insured so this is just for the commercial general liability. And, of course, the contract was not drafted by us but was taken from the standard contracts that BDD issues for all of its vendors. But, yes, I would interpret that to be just commercial general liability that we also have in addition to professional liability.

MEMBER IVES: Good. That was the only thing I wanted. Because I have dealt with the standard forms and every now and then I see things that in my mind don't make sense and just wanted to make sure I understood this one so it did make sense.

Thank you, Madam Chair. That's all I had. I move to approve.

CHAIR HAMILTON: Thank you.

COMMISSIONER HANSEN: Second.

CHAIR HAMILTON: I have a motion and second. Is there further discussion? Were there any other questions? Good, I have a motion and a second.

The motion passed by unanimous [5-0] voice vote.

8. Deleted at agenda approval.

9. MATTERS FROM THE PUBLIC

None were presented.

10. MATTERS FROM THE BOARD

None were presented.

11. NEXT MEETING: Thursday, April 6, 2023 at 4:00 p.m.

Chair Hamilton reminded the Board that the townhall meeting with Jill Hruby, Under Secretary of Energy for Nuclear Security and Administrator of the National Nuclear Security Administration, is scheduled for April 6th 6:30 to 8:30.

12. ADJOURN

Having completed the agenda and with no further business to come before the Board, Chair Hamilton declared this meeting adjourned at approximately 5:16 p.m.

Approved by:

Anna Hamilton, Board Chair

Respectfully submitted:

Karen Farrell, Wordswork

ATTEST TO

KATHARINE E. CLARK
SANTA FE COUNTY CLERK

D R A F T

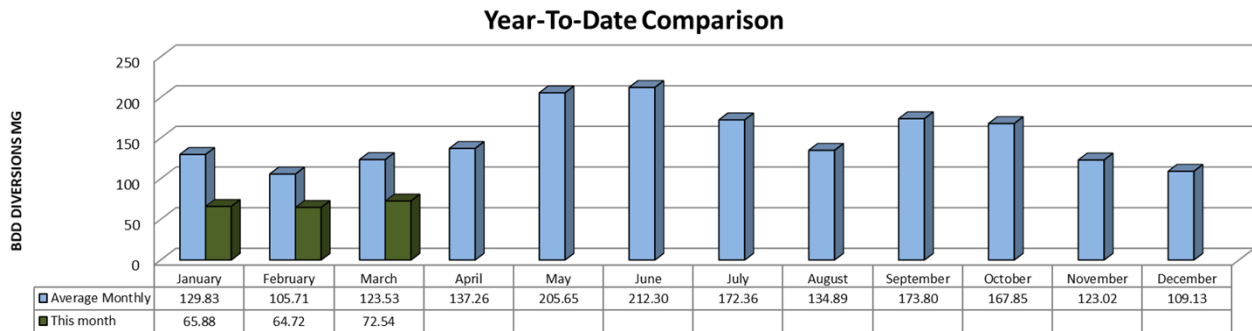
- subject to approval -



Date: April 6, 2023
To: Buckman Direct Diversion Board
From: Randy Sugrue, BDD Operations Superintendent
Subject: Update on BDD Operations for the Month of March 2023

ITEM:

1. This memorandum is to update the Buckman Direct Diversion Board (BDDDB) on BDD operations during the month of March 2023. The BDD diversions and deliveries have averaged, in Million Gallons Per Day (MGD), as follows:
 - a. Raw water diversions: 2.34 MGD.
 - b. Drinking water deliveries through Booster Station 4A/5A: 2.10 MGD.
 - c. Raw water delivery to Las Campanas at BS2A: 0.12 MG
 - d. Onsite treated and non-treated water storage: 0.12 MGD Average.
2. The BDD is providing approximately 35% percent of the water supply to the City and County for the month.
3. The BDD year-to-date diversions are depicted below:



4. Regional Demand/Drought Summary and Storage-see page 2.



Regional Water Overview

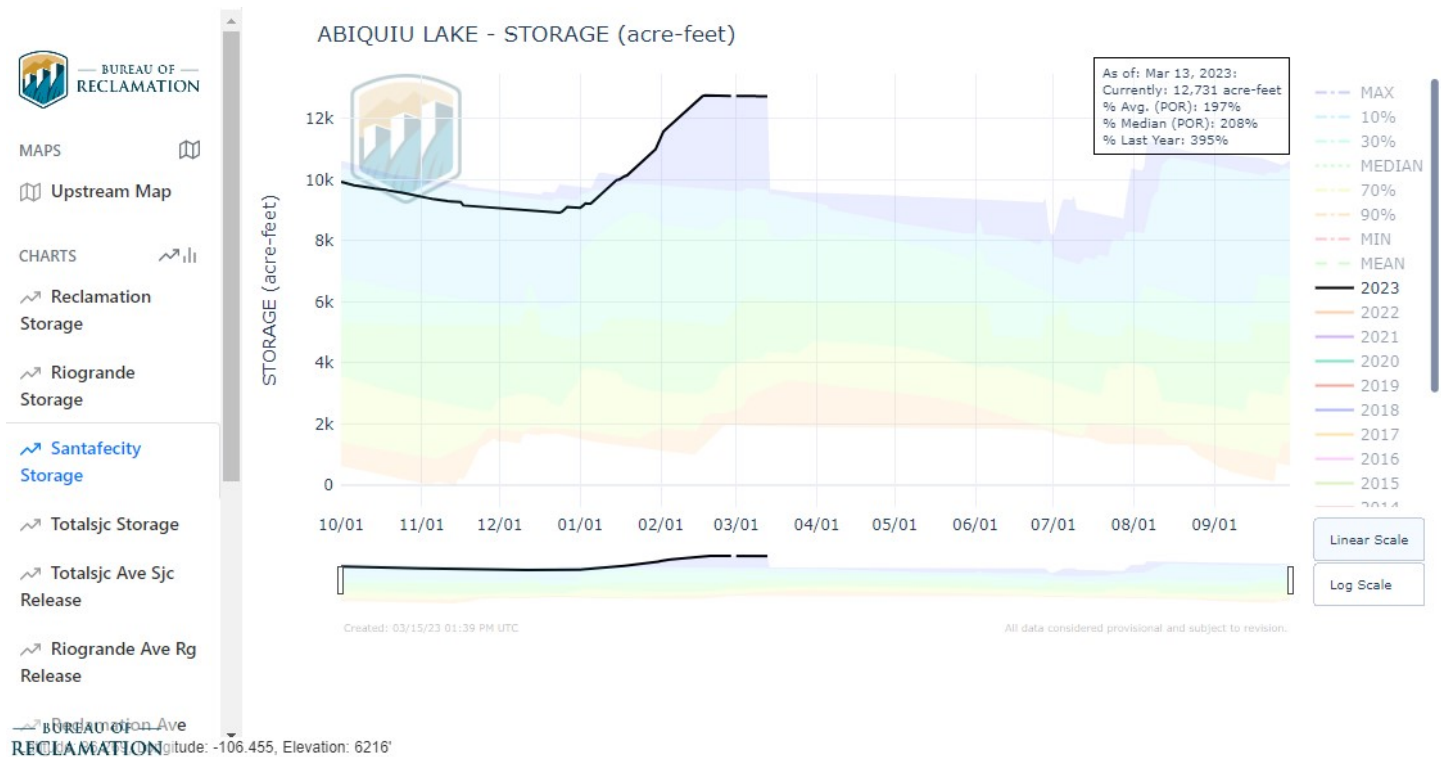
Daily metered regional water demand for the month of March 2023 is approximately 6.3 MGD.

Rio Grande flows for March 2023 averaged approximately 1000 CFS (cubic feet per second.)

CRWTP reservoir storage: Nichols: 59.9%/McClure: 33.6% (38.0% combined) Watershed Inflow: 0.25 MGD

City/County/LC Storage- as updated by partners. As of Mar. 13, 2023 City of SF Abiquiu/Heron SJC storage is at about 12,731AF.

As of Jan. 1, 2023 the City of Santa Fe has been allocated 0.0AF of 5230AF and SF County 0.0AF of 375AF of SJCP water. April 15, 2023 is the next scheduled allocation.



ENSO Summary

Mar. 13, 2023

Final La Niña Advisory- ENSO-neutral conditions are observed.

Equatorial sea surface temperatures (SSTs) are near average across most of the Pacific Ocean.

The tropical Pacific atmosphere is still consistent with a weak La Niña signal.

ENSO-neutral conditions are expected to continue through the Northern Hemisphere spring and early summer 2023.



Buckman Direct Diversion Monthly SJC and Native Diversions

Mar-23								
In Acre-Feet								
Month	Total SJC + Native Rights	SP-4842 RG Native COUNTY	SD-04842-A RG Native VIA SFC LAS CAMPANAS	SJC Call Total	SP-2847-E SJC Call CITY	SP-2847-N-A SJC Call LAS CAMPANAS	SP-2847-E SJC Undiverted CITY	All Partners Conveyance Losses
JAN	202.766	170.639	0.000	32.127	32.127	0.000	0.000	0.316
FEB	198.863	198.863	0.000	0.000	0.000	0.000	0.000	0.000
MAR	222.700	222.700	0.000	0.000	0.000	0.000	0.000	0.000
APR	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAY	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
JUN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
JUL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AUG	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SEP	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OCT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NOV	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	624.329	592.202	0.000	32.127	32.127	0.000	0.000	0.316

In Million Gallons

Month	Native COUNTY	SFC Native Las Campanas	SJC TOTAL	SJC CITY	SJC Las Campanas	SJC Undiverted CITY	All Partners Diversions
JAN	55.583	0.000	10.347	10.347	0.000	0.000	65.930
FEB	64.776	0.000	0.000	0.000	0.000	0.000	64.776
MAR	72.541	0.000	0.000	0.000	0.000	0.000	72.541
APR	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAY	0.000	0.000	0.000	0.000	0.000	0.000	0.000
JUN	0.000	0.000	0.000	0.000	0.000	0.000	0.000
JUL	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AUG	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SEP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OCT	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NOV	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DEC	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	192.900	0.000	10.347	10.347	0.000	0.000	203.247



Buckman Direct Diversion Monthly SJC and Native Diversions

Dec-22								
In Acre-Feet								
Month	Total SJC + Native Rights	SP-4842 RG Native COUNTY	SD-03418 RG Native LAS CAMPANAS	SJC Call Total	SP-2847-E SJC Call CITY	SP-2847-N-A SJC Call LAS CAMPANAS	SP-2847-E SJC Undiverted CITY	All Partners Conveyance Losses
JAN	511.288	154.905	0.000	356.382	356.382	0.000	0.000	3.203
FEB	421.814	421.814	0.000	0.000	0.000	0.000	0.000	0.000
MAR	376.496	302.219	0.000	74.277	74.277	0.000	0.000	0.758
APR	538.222	408.237	0.000	129.985	129.985	0.000	0.000	1.327
MAY	596.137	596.137	0.000	0.000	0.000	0.000	0.000	0.000
JUN	660.831	300.636	0.000	360.194	360.194	0.000	0.000	2.397
JUL	582.150	122.961	0.000	459.189	459.189	0.000	0.000	2.232
AUG	166.030	0.000	0.000	221.847	221.847	0.000	55.818	1.067
SEP	439.944	30.356	0.000	409.588	383.240	26.348	0.000	1.982
OCT	505.999	25.135	0.000	480.864	456.039	24.825	0.000	4.780
NOV	263.142	0.000	0.000	270.146	259.271	10.875	7.004	2.699
DEC	177.158	9.051	0.000	168.107	168.107	0.000	0.000	1.650
TOTAL	5,239.210	2,371.451	0.000	2,930.579	2,868.532	62.047	62.821	22.095

In Million Gallons

Month	Native COUNTY	Native Las Campanas	SJC TOTAL	SJC CITY	SJC Las Campanas	SJC Undiverted CITY	All Partners Diversions
JAN	50.458	0.000	114.878	114.878	0.000	0.000	165.336
FEB	137.399	0.000	0.000	0.000	0.000	0.000	137.399
MAR	98.443	0.000	23.913	23.913	0.000	0.000	122.356
APR	132.976	0.000	41.848	41.848	0.000	0.000	174.825
MAY	194.181	0.000	0.000	0.000	0.000	0.000	194.181
JUN	97.927	0.000	115.951	115.951	0.000	0.000	213.878
JUL	40.052	0.000	147.861	147.861	0.000	0.000	187.914
AUG	0.000	0.000	71.472	71.472	0.000	18.182	71.472
SEP	9.888	0.000	131.951	123.448	8.503	0.000	141.839
OCT	8.187	0.000	154.855	147.123	8.009	0.000	163.042
NOV	0.000	0.000	86.992	83.484	3.508	2.281	86.992
DEC	2.948	0.000	54.143	54.143	0.000	0.000	57.092
TOTAL	772.460	0.000	943.866	924.123	20.020	20.463	1,716.326



Date: April 03, 2023

To: BDD Board

From: Rick Carpenter, BDD Facilities Manager

Re: BDD Facilities Manager Monthly Update to the BDD Board

Item and Issue

The BDD Facilities Manager provides a monthly update to the BDD Board as part of regular Board meetings. These updates usually are in the form of a verbal presentation; however, going forward, these presentations will be in the form of a written memo. The following items are being presented to the Board as part of the April, 2023 Board meeting:

- **City Finance Department Update.** Staff has engaged with representatives from the City's Finance Department with requests for an update on legal settlement funds investment strategy and status (e.g., interest), and also a request for an update on the possible need to separate legal settlement fund accounts for investment purposes vs. accessibility purposes. Staff had hoped for such a presentation for the April Board meeting, but representatives of the Finance Department have indicated that they hope to be ready to present to the BDD Board at the May Board meeting.
- **Wildfire Defensible Space Brush Clearing at BDD Booter Station2A and Solar Array.** After several months of coordinating with the federal Bureau of Land Management (the land owner), during the week of 3/27/23, a crew of specialized fire personnel arrived at the booster station/solar array site and began clearing selected trees and brush, creating a defensible space zone, and thereby minimizing the threat of wildfire damage to BDD facilities at this site.
- **BDD Maintenance and Repair Group Vacancies.** This group has several vacancies that the BDD staff has been trying to fill for a significant period of time. The Journeyman Electrician position successfully posted last week. The Entry Level Maintenance and Repairman position produced a list of eligibles (one candidate), but the candidate eventually withdrew the application. This position will post again as soon as possible. The Warehouse Scheduler/Planner and the Instrumentation and Control Tech positions are currently being re-evaluated for possible re-classification to a higher pay range since BDD staff has been unsuccessful in recruiting eligible candidates for both positions.
- **Major Repair and Replacement Policy Updates.** BDD staff and consultants, as well and City and County staff have been working over the last several weeks to update and improve clarity of certain sections of the policy. Staff was hopeful that the revised policy would be ready for the April BDD Board meeting, but it appears that the revised policy will not be completely ready for Board discussion and action until the May BDD Board meeting.



Memorandum



Buckman Direct Diversion

Date: March 31, 2023

To: BDD Board

From: Rick Carpenter, BDD Facilities Manager

Re: 2022 BDD Consumer Confidence Report

Item and Issue

The BDD Consumer Confidence Report (CCR) is presented to the BDD Board pursuant to the requirements of 40 C.F.R., section 141. The BDD, water system number NM3502826, is a drinking water wholesaler, and supplies water to the City and Santa Fe and Santa Fe County. Both of these water systems obtain drinking water from other sources in addition to the BDD. Both the City and County publish their own respective CCR's.

The BDD's CCR is attached to this memo. It is an informational item and staff is not requesting that any action be taken by the BDD Board.



Buckman Direct Diversion 341 Caja del Rio Santa Fe, NM 87506



2022 Consumer Confidence Report (CCR) for the Buckman Direct Diversion (BDD)

Introduction

This Consumer Confidence Report (CCR) is presented pursuant to the requirements of 40 C.F.R. § 141 Subpart O. The Buckman Direct Diversion (BDD), also known as the Buckman Regional Water Treatment Plant, water system number NM3502826, is a wholesaler of treated drinking water. The BDD supplies water to only two entities, the County of Santa Fe, New Mexico and the City of Santa Fe, New Mexico. Both the County of Santa Fe and the City of Santa Fe obtain water from other sources in addition to water obtained from the BDD. Members of the public who are interested in the quality of the water supplied by the County of Santa Fe or the City of Santa Fe are urged to refer to the CCR published by the county or the CCR published by the city in addition to this CCR.

Source of Water

The BDD diverts surface water from the Rio Grande. The diversion structure is located on the east bank of the Rio Grande near the northern terminus of Old Buckman Road in Santa Fe County, New Mexico.

Why Are There Contaminants in My Drinking Water

The following text is included in this CCR pursuant to 40 CFR § 141.153(h):

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Do I Need to take Special Precautions

The following text is included in this CCR pursuant to 40 CFR § 141.154(a):

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

Additional Information for Lead

The following text is included in this CCR pursuant to 40 CFR § 141.154(a):

Lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. BDD is responsible for providing high quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact the BDD using the contact information located at the end of this CCR Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at <http://www.epa.gov/safewater/lead>.

Opportunities for Public Participation

The BDD is directed by the Buckman Direct Diversion Board. The Buckman Direct Diversion Board was created by a Joint Powers Agreement between the County of Santa Fe, New Mexico and the City of Santa Fe, New Mexico. The Buckman Direct Diversion Board usually meets on the first Thursday of each month. For more information about the date, time, and location of these meetings go to the BDD website at www.bddproject.org.

Source Water Assessment and its Availability

The BDD submitted a Source Water Protection Plan to the New Mexico Environment Department (NMED) in October of 2017. Minor revisions and updates to this plan were made in February of 2023. To obtain a copy of this document contact the BDD using the contact information located at the end of this CCR.

Water Quality Data Table

Terms and Definitions

<i>Term</i>	<i>Definition</i>
MCLG	Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
ppm	parts per million or milligrams per liter (mg/L)
ppb	parts per billion or micrograms per liter (µg/L)
pCi/L	picocuries per liter (a measure of radioactivity)
µg/L	micrograms per liter
TT	Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
NTU	nephelometric turbidity units

Contaminants

<i>Contaminant</i>	<i>MCLG</i>	<i>MCL</i>	<i>Concentration</i>	<i>Sample Date</i>	<i>Violation</i>	<i>Typical Source(s)</i>
Disinfection By-Products:						
bromate	0 ppb	10 ppb	2.2 ppb ¹	2022	no	by-product of drinking water disinfection
¹ This is the highest value of four Running Annual Averages (RAAs) computed quarterly. The values ranged from 1.8 ppb to 2.2 ppb.						
Inorganic Contaminants:						
barium	2 ppm	2 ppm	0.048 ppm	2022	no	discharge of drilling wastes, discharge from metal refineries erosion of natural deposits
selenium	50 ppb	50 ppb	1.2 ppb	2022	no	discharge from petroleum and metal refineries, erosion of natural deposits, discharge from mines
fluoride	4 ppm	4 ppm	0.32 ppm	2022	no	erosion of natural deposits, water additive which promotes strong teeth, discharge from fertilizer and aluminum factories
Radioactive Contaminants:						
gross alpha, excluding radon and uranium	0 pCi/L	15 pCi/L	0.9 pCi/L	2021 ²	no	erosion of natural deposits
gross beta particle activity	0 pCi/L	50 pCi/L (level of concern)	3.9 pCi/L	2021 ²	no	decay of natural and man-made deposits
radium (combined 226 and 228)	0	5 pCi/L	0.03 pCi/L	2021 ²	no	erosion of natural deposits
Uranium	0 µg/L	30 µg/L	2.0 µg/L	2021 ²	no	erosion of natural deposits
² This data is from the most recent testing done in accordance with the applicable regulations.						
Microbiological Contaminants (TT):						
Turbidity	(none)	< 95% > 0.3 NTU	100 % < 0.3 NTU	2022	no	soil runoff
100 % of the measurements were below the TT value of 0.3 NTU. A value of less than 95 % constitutes a TT violation. Individual turbidity measurement ranged from 0.01 NTU to 0.07 NTU. Any measurement in excess of 1 NTU is a violation unless otherwise approved by the state. The highest single measurement was 0.07 NTU.						

Other Sampling and Testing

In addition to the sampling and testing for regulated contaminants, the New Mexico Environment Department (NMED) sampled and tested for the following substances in 2022:

Nickel: not detected (less than 0.01 mg/L)

Sodium: 23 mg/L

Zinc: 0.038 mg/L

Strontium-90: not detected (less than 0.34 pCi/L)

Tritium: not detected (less than 270 pCi/L)

Contact Information

Danny Carter, Chemist
Buckman Direct Diversion
341 Caja del Rio Rd.
Santa Fe NM 87506
Phone: 505-955-4511
djcarter@santafenm.gov

Verbal Presentation



Date: April 6, 2023

To: Buckman Direct Diversion Board

From: Antoinette Armijo-Rougemont, BDD Accounting Supervisor

Via: Rick Carpenter, BDD Facilities Manager

Re: Request for Approval of Technical Budget Adjustment from Legal Contracts to Gas Service and Service Contracts

ITEM AND ISSUE:

Request for approval of Technical Budget Adjustment from Legal Contracts to Gas Service in the amount of \$80,000, and to Service Contracts in the amount of \$25,000 for Munis configurations.

BACKGROUND AND SUMMARY:

The Buckman Direct Diversion Board approved \$40,000 in the FY2023 budget for Natural Gas. From July through October, the average invoice received was \$178.60. In November and through March, the invoices were significantly higher. January was \$17,148.21, February was \$54,917.50, and March was \$19,554.30, for a total of \$91,620.01 for three months. An email was received on February 27, 2023 from our vendor Symmetry explaining the causes of unusually high natural gas invoices and payment options. Our staff reached out to the vendor to confirm that our invoices are accurate, and it was confirmed. In order to supply the additional funds needed for this unexpected increase, we will decrease the Snell & Wilmer PO. by the total amount of \$105,000. We will increase the Gas Service Line by \$80,000, and the Service Contract line by \$25,000.

The Service Contract line is for the unexpected Munis configurations that IT has identified for three Munis modules that are utilized by only BDD, which includes the Inventory Module, the General Billing Module, and the Project Ledger Module. IT recently determined that these modules should be fully configured for use by BDD and has been working on a plan. The timeline provided for this project is May – July. The estimate we were given for the work that needs to be completed is up to \$25,000. The FY23 PO for Snell & Wilmer is \$195,178.50. To date, we've paid out \$36,407.17. This reduction will leave a balance of \$53,780 for the remainder of the year on their PO and has been determined to be sufficient.

ACTION REQUESTED:

Staff Recommends approval of the Technical Budget Adjustment Request in the total amount of \$105,000.

Approved/Date

Denied/Date



Log # {Finance use only}:	
Batch # {Finance use only}:	

City of Santa Fe, New Mexico

TECHNICAL BUDGET ADJUSTMENT REQUEST (TBAR)

DEPARTMENT / DIVISION NAME PUPB/Buckman Direct Diversion						DATE 4/6/2023
ITEM DESCRIPTION	BUSINESS UNIT	LINE ITEM	SUBSIDIARY {.000000}	SUBLEDGER {0000}	INCREASE	DECREASE
<u>EXPENDITURES</u>					<i>{enter as positive #}</i>	<i>{enter as negative #}</i>
Gas Service	8000801	513950			80,000	
Service Contracts	8000801	510310			25,000	
Legal Contract	8000801	510200				105,000
<u>REVENUES</u>					<i>{enter as negative #}</i>	<i>{enter as positive #}</i>
JUSTIFICATION: <i>(use additional page if needed)</i> <i>--Attach supporting documentation/memo</i>					\$ 105,000	\$ 105,000

We need to move funds into Gas Service for unexpected significant increases in Natural Gas during the winter months, and we need to cover expenses, up to the amount of \$25,000, for Munis upgrades for modules that are currently exclusively used by BDD, to include the Inventory module, the General Billing module, and the Project Ledger module.

Antoinette Armijo-Rougemont Prepared By {print name}	4/6/2022 Date	{NOTE: use this form ONLY for adjustments between/among revenue lines or between/among expense lines within a single Business Unit}	Department Director Budget Officer	Date Date
Division Director {optional}	Date			



Date: March 31, 2023

To: BDD Board

From: Rick Carpenter, BDD Facilities Manager

RC

Re: Summary and Update of BDD Source Water Protection Plan

Item and Issue

Summary

Source Water Protection is a voluntary program established by Congress in 1996. That program encourages individual water systems to develop a Source Water Protection Plan (SWPP). The United States Environmental Protection Agency (EPA) and the New Mexico Environment Department (NMED) provides templates and procedures to assist water systems in developing standardized SWPPs to monitor and protect the sources of their water supply.

The Buckman Direct Diversion (BDD) produced its first written SWPP in 2017. It was produced primarily by Daniel B. Stephens & Associates, Inc. Comments on the first proposed draft were received from the Los Alamos National Laboratory (LANL), the NMED Drinking Water Bureau, and the BDD. The final draft was submitted to the NMED in October of 2017.

An updated and revised version of the original SWPP was produced by Daniela Bowman, BDD Regulatory Compliance Officer in April of 2019. Ms. Bowman continued to updated and revise the SWPP up until her retirement in December of 2022. Danny Carter, BDD Chemist, made a few minor revisions and updates to the SWPP in 2023. This final revision was submitted to the NMED on March 10, 2023.

The revised/updated SWPP includes the following components:

1. An introduction explaining the background and purposes of an SWPP.
2. The identification of the Source Water Protection Team which includes members from the BDD, the NMED, the city of Santa Fe, Santa Fe County, and Las Campanas.
3. A description of the BDD including (a) an explanation of its governing body (the BDD Board), (b) the sources of the BDD's water including native Rio Grande water and San Juan Chama project water, (c) the BDD's customers, and (d) the BDD's diversion and treatment systems.
4. A description of the geology, hydrology, quality, and historic use of the BDD's water sources.
5. Definitions of the SWPP's Source Water Protection Area.



6. Descriptions of specific Potential Sources of Contamination in the Source Water Protection Area.
7. An overview of actions to be taken by the BDD to avoid potential contamination of its source water.
8. Extensive, detailed appendices giving further information related to the SWPP.

The latest revision/update of the SWPP is quite large, over 100 pages, so the entire document was not included in the packet materials for this agenda; however, the entire SWPP may be found on the BDD's website at www.BDDProject.org at the following link: [Buckman Direct Diversion – Environmental Stewardship \(bddproject.org\)](#); however, the BDD Board may wish to direct staff to prepare an expanded and more detailed version of this plan.

Source Water Protection Plan

Buckman Direct Diversion

2023



Buckman Direct Diversion

Source Water Protection Plan

Public Water System # 3502826

COLLABORATORS



New Mexico Environment Department Drinking Water Bureau (NMED DWB) assisted greatly with this plan.



BDD staff reviewed and revised this plan

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Appendix A. BDD System Information

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Appendix C. Sampling Schedule from Drinking Water Watch

Appendix D. PSOCs in Watersheds Upstream from BDD.

1. INTRODUCTION

The original source water protection plan (SWPP) was prepared by Daniel B. Stephens & Associates, Inc. (DBS&A) for the Buckman Direct Diversion (BDD) (Figure 1) under contract with the New Mexico Environment Department (NMED) Drinking Water Bureau (DWB) in 2017.

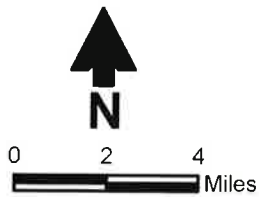
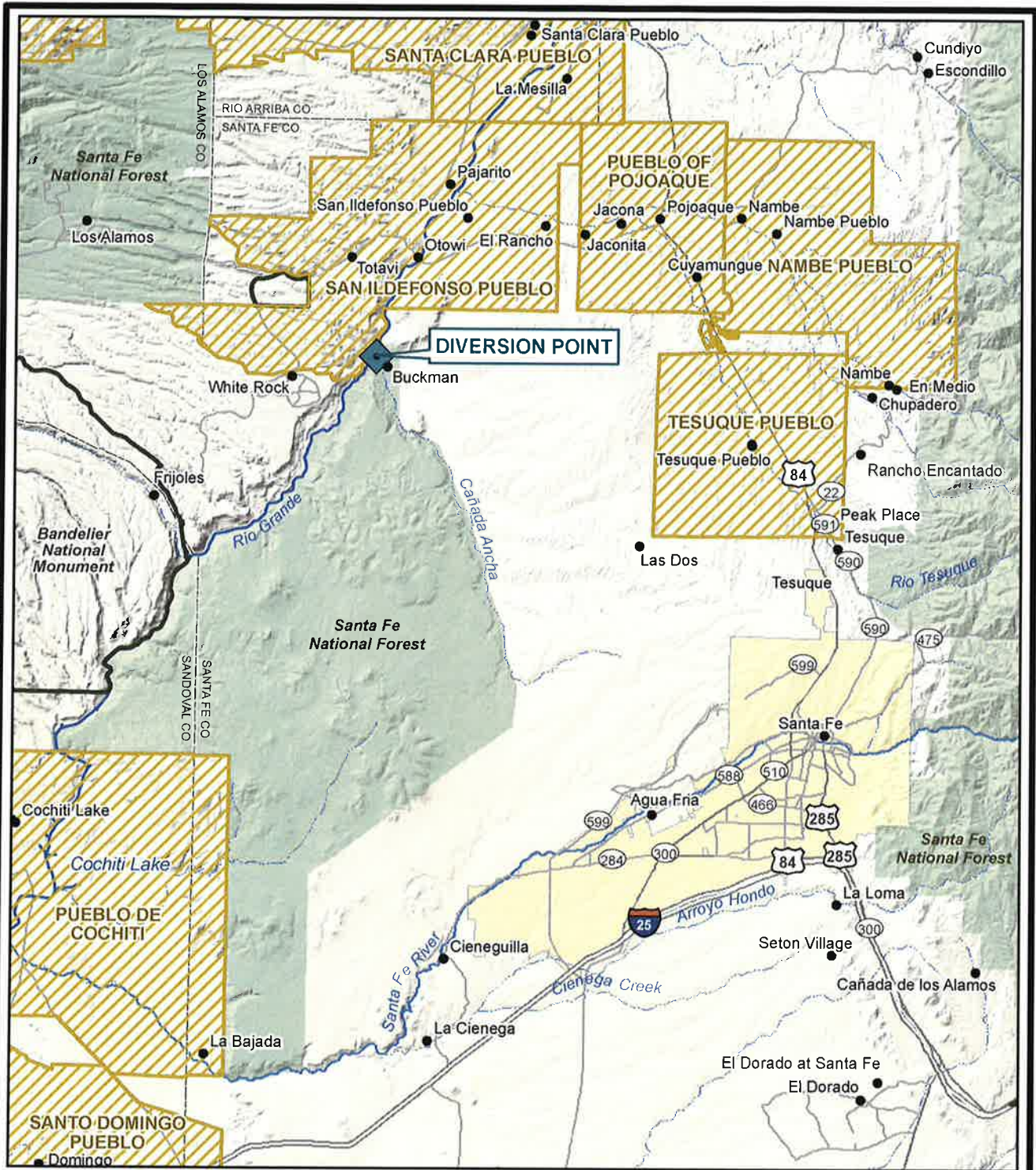
The NMED DWB assists communities in the protection of their drinking water systems through the Source Water Protection Program. By participating in this voluntary program, communities can assess a water system to identify and manage actual or potential sources of contamination to the drinking water supply. The program consists of a two-step process. The first step in the process is developing a SWPP by describing the area(s) to be protected, identifying actual and potential contamination sources, and evaluating the risk each source of contamination poses to the drinking water source area.

The second step of the process is implementing the developed SWPP. The SWPP benefits the public water system by providing management and implementation strategies to ensure the protection of the drinking water supply. Preventing contamination is much easier and less expensive than cleaning up a contaminated source or finding a new source.

The original (2017) SWPP for the BDD was developed using the *New Mexico Source Water and Wellhead Protection Toolkit* (NMED DWB, 2013). That SWPP was updated by BDD staff using a revised risk assessment approach in order to produce the 2023 version. The plan identifies a Source Water Protection Team that has the responsibility of program development and implementation, thereby providing the community with the tools needed to prevent contamination of BDD's Source Water Protection Area.

This document identifies actual and potential sources of contamination to BDD's water sources and makes an action plan for preventing future contamination. BDD Board and the BDD Source Water Protection Team are responsible for implementing the SWPP and updating the plan on a regular basis.

Figure 1. BDD and Vicinity Map



- Explanation**
- Pueblo
 - U.S. Forest Service
 - National Park Service
 - Stream
 - Road

BUCKMAN DIRECT DIVERSION PROJECT
 SOURCE WATER PROTECTION PLAN
Vicinity Map



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Figure 1

1.1 Purpose

The Source Water Protection Plan (SWPP) is a tool for BDD to ensure clean and high-quality drinking water sources for current and future generations. This Source Water Protection Plan is designed to:

- ✚ Create an awareness of the community's drinking water sources and the potential risks to surface water and/or groundwater quality within the watershed;
- ✚ Encourage education and voluntary solutions to alleviate pollution risks;
- ✚ Promote management practices to protect and enhance the drinking water supply; and
- ✚ Provide for a comprehensive action plan in case of an emergency that threatens or disrupts the community water supply.

Developing and implementing source water protection measures at the local level (i.e. county and municipal) will complement existing regulatory protection measures implemented at the state and federal governmental levels by filling protection gaps that can only be addressed at the local level.

1.2 Source Water Protection Program Background

The U.S. Congress amended the Safe Drinking Water Act in 1996 to provide for the assessment and protection of sources of public water supply. The U.S. Environmental Protection Agency (EPA) provides information and encourages partnerships for source water protection planning. States completed source water assessments for all public water systems between 2002 and 2006. States are now implementing strategies to help local communities use the information obtained from these assessments. States may also provide resources to help fund local protection activities, such as wellhead protection programs for groundwater and watershed management programs for surface water.

1.3 Components of a Source Water Protection Program

The primary objective of a source water protection program is to safeguard and improve source water quality for current and future use. A program may include several fundamental components, such as:

- ✦ An inventory and characterization of the contaminant threads in the source water protection area;
- ✦ An action plan outlining strategies and resources required for the long-term management of the source to prevent contamination; and
- ✦ Implementation of the management measures identified in the planning process.

When developing a program, partners should account for a variety of factors such as local environmental conditions, the needs and capacity of water providers, stakeholder interests, and other site-specific factors. See Figure 2.

Figure 2. Phases in development and implementation of SWPP

<https://www.epa.gov/sourcewaterprotection/assess-plan-and-protect-source-water#components>



1.4 Assessment Phase

1.4.1 Step 1 - Delineate the source water protection area (SWPA).

A source water protection plan includes a delineated area that shows the area to be assessed and protected based on where the public water system draws drinking water supplies.

1.4.2 Step 2 – Inventory known and potential sources of contamination (PSOC).

A contaminant source inventory lists all documented and potential contaminant sources or activities of concern within the SWPA that may pose a threat to drinking water supplies.

1.4.3 Step 3 – Determine the susceptibility of the public water system to contaminant sources or activities within the SWPA.

Determining the susceptibility of the public water system to threats included on the contaminant source inventory list is an important step for connecting the nature and severity of the threat to the likelihood of the threat contaminating source water.

1.4.4 Step 4 – Engage the public about threats identified in the assessment.

Effective source water protection programs ensure that the public has the information necessary to act to prevent contamination. Early involvement in the planning process helps build consensus on the need for action, leading to more comprehensive source water protection.

1.5 Protection Phase

1.5.1 Step 5 - Develop an action plan to identify and prioritize specific implementation activities.

Communities can use the information gathered from the source water assessment process to develop action plans identifying long-term management strategies for preventing contamination of sources of drinking water.

1.5.2 Step 6 – Protect source of drinking water by implementing protective actions.

Communities use many different source water protection practices to prevent contamination of their drinking water supplies. These measures can be tailored to address each threat or an array of risks specific to each public water system.

1.5.3 Step 7 – Evaluate and update action plan periodically.

Plans should be evaluated and, if necessary, revised in response to new information, such as changes to the watershed or source water protection area or other factors that could affect the relevance and efficacy of the plan.

1.6 Revisions

1.6.1 Revision 2019

In 2019 BDD revised the original SWPP dated October 2017. The revision of February 2019 included revising the Source Water Protection Team members, updating the BDD production rates for 2017 and 2018 and the corresponding tables and graphs, updating the Santa Fe County per capita daily use for 2017 and its corresponding table and graph, and selecting the BDD Actions Items.

1.6.2 Revision 2023

In 2023 BDD revised a few sections of the 2019 SWPP including Section 4.2 and the risk assessment of the PSOCs in Section 7. A search of the NMED database of PSOCs revealed the same PSOCs present in 2017.

2. SOURCE WATER PROTECTION TEAM

The Source Water Protection Team has the responsibility for input to the SWPP and also for the implementation of the recommended action items in the SWPP. The BDD serves Santa Fe County (the County), the City of Santa Fe (the City), and Las Campanas, and members from each of these entities are represented on the Source Water Protection Team. Members of the Source Water Protection Team are identified in Table 1.

Table 1. Source Water Protection Team

Name	Affiliation	E-mail
Rick Carpenter	Buckman Direct Diversion	rrcarpenter@santafenm.gov
Randy Sugrue	Buckman Direct Diversion	rksugrue@santafenm.gov
Danny Carter	Buckman Direct Diversion	djcarter@santafenm.gov
Jill Turner	New Mexico Environment Department	jill.turner@state.nm.us
Alan Hook	City of Santa Fe	aghook@santafenm.gov
Melissa McDonald	City of Santa Fe	mamcdonald@santafenm.gov
Michelle Hunter	County of Santa Fe	mghunter@santafecountynm.gov
Tom Egelhoff	Las Campanas	tegelhoff@clublc.com

3. WATER SYSTEM INFORMATION

BDD is jointly owned by the City and the County of Santa Fe, with Las Campanas as a limited partner. By agreement between the City and County, the City currently provides financial and administrative support.

The BDD is governed by the BDD Board, established in 2005 by the Joint Powers Agreement. According to the agreement, "[g]overnance will be through a five member board consisting of two County Commissioners and two City Councilors and a qualified person (to serve a one year term but without term limits) appointed by a majority of the four elected officials." The board also includes a non-voting member that represents Las Campanas.

The BDD Board's powers include:

- ✚ The authority to enter into a contract with an entity to maintain and operate the BDD. The current contract to maintain and operate the BDD is with the City of Santa Fe.
- ✚ The authority to enter into a contract with an entity to act as the fiscal agent the BDD. The City of Santa Fe is currently contracted with the BDD to serve as the BDD's fiscal agent. The fiscal agent must receive the BDD Board's approval for expenditures over an amount specified in the contract.
- ✚ Entering into a Facility Operations and Procedures Agreement with Las Campanas.

The BDD Board's authority and duties do not encompass:

- The distribution of water to customers;
- The assessment or collection of water charges;
- The regulation of water use by customers or the ownership;
- Acquisition or permitting of use of water rights or contract rights.

The BDD diverts water from the Rio Grande for use by its customers. The water is ultimately derived from two sources:

- ✚ San Juan-Chama (SJC) Project water. This is water that is artificially transferred from the Colorado River basin to the Rio Grande basin. The rights to this water are primarily regulated by the U.S. Bureau of Reclamation (BOR), and

- Native Rio Grande water. This is water that naturally occurs in the Rio Grande watershed. The rights to this water are primarily regulated by the New Mexico Office of the State Engineer (OSE).

BDD began supplying water to its customers in 2011. The BDD’s customers and BDD water system are discussed in more detail in Sections 3.2 and 3.3, respectively.

3.1 San Juan-Chama Project

The SJC Project is a U.S. Bureau of Reclamation (BOR) trans-basin transfer project and makes New Mexico’s 11 percent allocation of Colorado River Basin water available to users in the north-central part of the state (namely, the Middle Rio Grande Basin). This project diverts water from three different headwater streams of the San Juan River in Colorado (Rio Blanco, Little Navajo River, and Navajo River). Diversions can occur anytime during the year as long as streamflow exceeds the minimum allowable amount, and total diversions cannot exceed 1,350,000 acre-feet in any 10-year period. The average annual yield is 96,200 acre-feet per year (ac-ft/yr). Diverted water travels underground for 27 miles across the Continental Divide into Heron Reservoir, located in Rio Arriba County, New Mexico at the confluence of Willow Creek and Rio Chama. The reservoir has a capacity of 400,000 acre-feet, approximately 4 years supply for its designated downstream contractors (Table 2). Water flows from Heron Reservoir southeast on the Rio Chama until it reaches the Rio Grande, approximately 5 miles north of Española (30 miles north of Santa Fe). Rio Grande water used by the City and County of Santa Fe under the SJC Project is diverted at the BDD and treated at the Buckman Regional Water Treatment Plant (BRWTP). Appendix A shows how water is transferred from Colorado into Heron Reservoir and into the Rio Grande.

Table 2. Contractors of San Juan-Chama Project Water

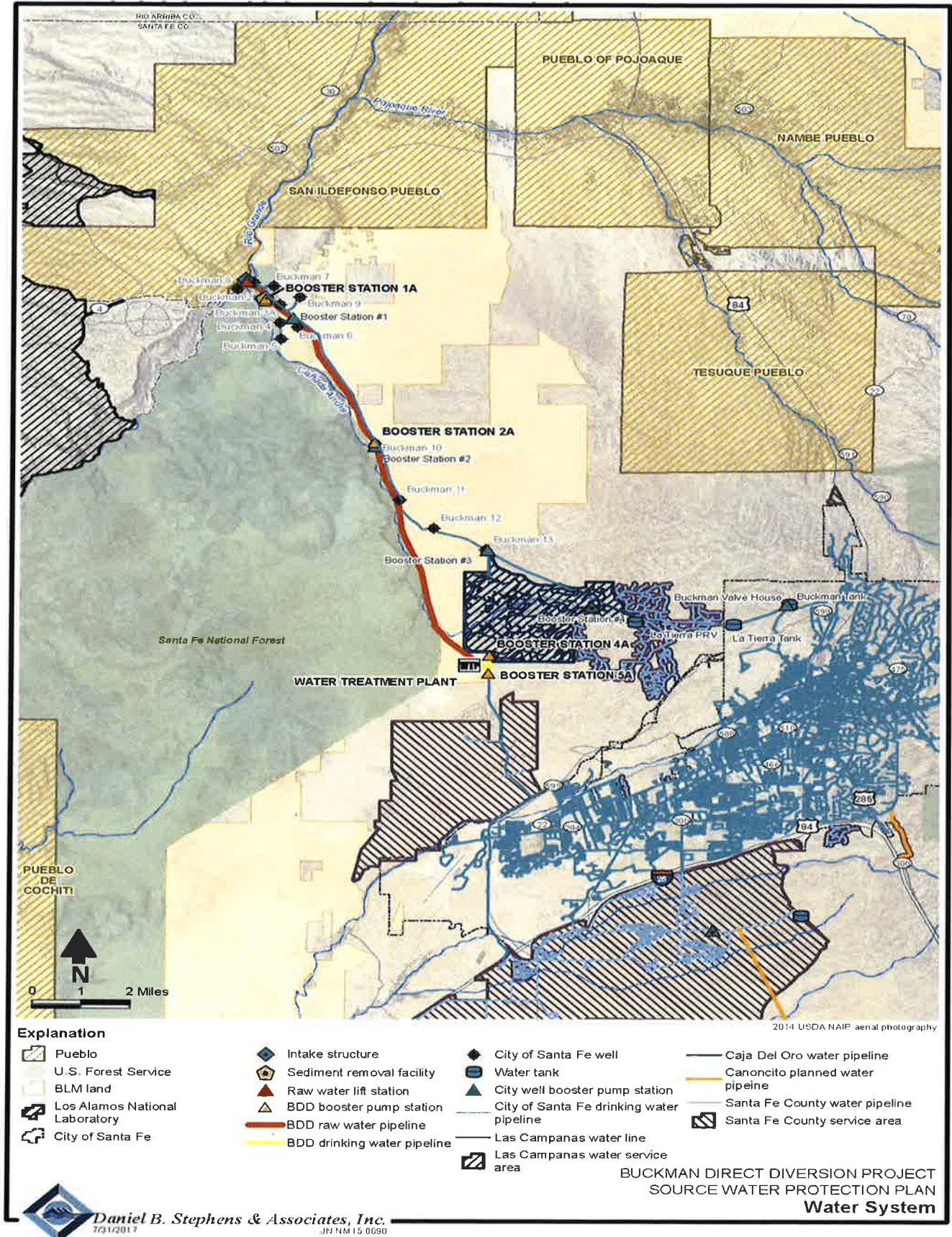
Contractor	SJC Allocation (ac-ft/yr*)
<i>Municipal</i>	
Albuquerque	48,200
City of Santa Fe	5,230
Santa Fe County	375
Los Alamos	1,200

Contractor	SJC Allocation (ac-ft/yr*)
Los Lunas	400
Twining Water and Sanitation District	15
Española	1,000
Taos	400
Belen	500
Bernalillo	400
Jicarilla Apache Nation	6,500
Ohkay Owingeh Pueblo	2,000
<i>Irrigation</i>	
Middle Rio Grande Conservancy District	20,900
Pojoaque Valley Irrigation District	1,030
<i>Other</i>	
Cochiti Reservoir (U.S. Army Corps of Engineers)	5,000
Taos Pueblo Settlement	2,990

*ac-ft/yr = acre-feet per year

In 1976, the City, the Public Service Company of New Mexico (PNM) (which owned and operated the Santa Fe public water system at the time), and the County signed a 40-year contract with the BOR. The contract allotted 5,230 ac-ft/yr of SJC Project water to the City and 375 ac-ft/yr to the County, 5,605 ac-ft/yr total. In 2006, two permanent but separate contracts were signed between BOR and the City and County of Santa Fe for the same allocations of water.

Figure 3. City and County of Santa Fe Water System



3.2 BDD Customers

BDD has three customers: the City of Santa Fe, the County of Santa Fe, and Las Campanas. BDD's total annual allocations are 8,730 ac-ft/yr of which large percent belongs to the City of Santa Fe.

3.2.1 City of Santa Fe

The City of Santa Fe water system serves approximately 78,200 customers through 33,297 metered connections. The bulk of these customers are within the City limits. In total, the City of Santa Fe system serves a population of 90,810, making it the fourth-largest system in New Mexico. (Hook, 2021)

Also, the City has several water service agreements to serve customers within Santa Fe County. The City of Santa Fe Water System is unique among public water systems in the Southwest due to its diverse portfolio of source waters, including two groundwater well fields, surface water from the Santa Fe River stored in two reservoirs, and surface water from the San Juan-Chama Project obtained from the Rio Grande at the Buckman Direct Diversion. The City purchases water from the latter, a separate public water system. See (Hook, 2021).

- Surface water from the Santa Fe River stored in two reservoirs,
- Surface water from the Rio Grande River from Buckman Direct Diversion, and
- Groundwater from the Tesuque Formation at
 - City Well Field (CWF), and
 - Buckman Well Field (BWF).

From 2013 to 2019, the approximate average contributions of Santa Fe River surface water, Rio Grande surface water, and ground water were 35%, 45%, and 20%, respectively. However, as much as 80% of the City's water is derived from BDD at certain times of the year. The 2013-2019 average annual production by the City of Santa Fe Water System from all sources was 8,600 ac-ft.

3.2.2 Santa Fe County

The Santa Fe County water system is divided into two sectors, West and South, and serves approximately 3,500 accounts. The County's consumer confidence reports (CCRs) (https://www.santafecountynm.gov/public_works/utilities) describe the sectors as follows:

The West Sector supplies potable water to users outside of the western boundary of the City of Santa Fe and within the boundary of the Historic Village of Agua Fria. These users are located in the areas of: Las Campanas Estates I & II, Aldea, Tessera, El Prado, La Serena, Los Sueños, Sonrisa, Northwest Ranches, and Vista Aurora Subdivisión. Water is also provided to the Las Campanas Water and Sewer Cooperative and to the Agua Fria Community Water System.

The South Sector supplies potable water to users outside of the boundary of the City of Santa Fe in the areas including Campo Conejos, Turquoise Trail South, Rancho Viejo, Oshara Village, La Pradera, Valle Vista, the County Public Safety Complex, Turquoise Trail School, Las Lagunitas, and parts of La Cienega. Water is also provided to other systems, including the New Mexico National Guard, the New Mexico State Penitentiary, and the La Cienega Mutual Domestic Water Consumers Association.

The 2010 Census estimated that there were 6,992 housing units in the County water system, with an average household size of 2.52, giving a population of 17,620 served by the County water system. The Census estimated that 6,104 of these houses were occupied (888 were not), with a vacancy rate of 12.7 percent.

In addition to BDD, the County relies on the City of Santa Fe's water sources. The County uses much of the City's water system infrastructure, although the County also owns and maintains its own storage tank, booster station, and pipelines (Figure 3).

The 2017 County's system-wide average daily demand (ADD) was 833,365 gallons of which the residential 2017 ADD was 529,904 gallons. Figure 4 shows the County's per capita daily use from 2010 to 2017. The system-wide per capita daily use during this period ranged from 62 to 140 gallons per capita per day (gpcd) (Table 3), with an average of 86 gpcd.

Table 3. Santa Fe County Per Capita Daily Use, 2010-2017

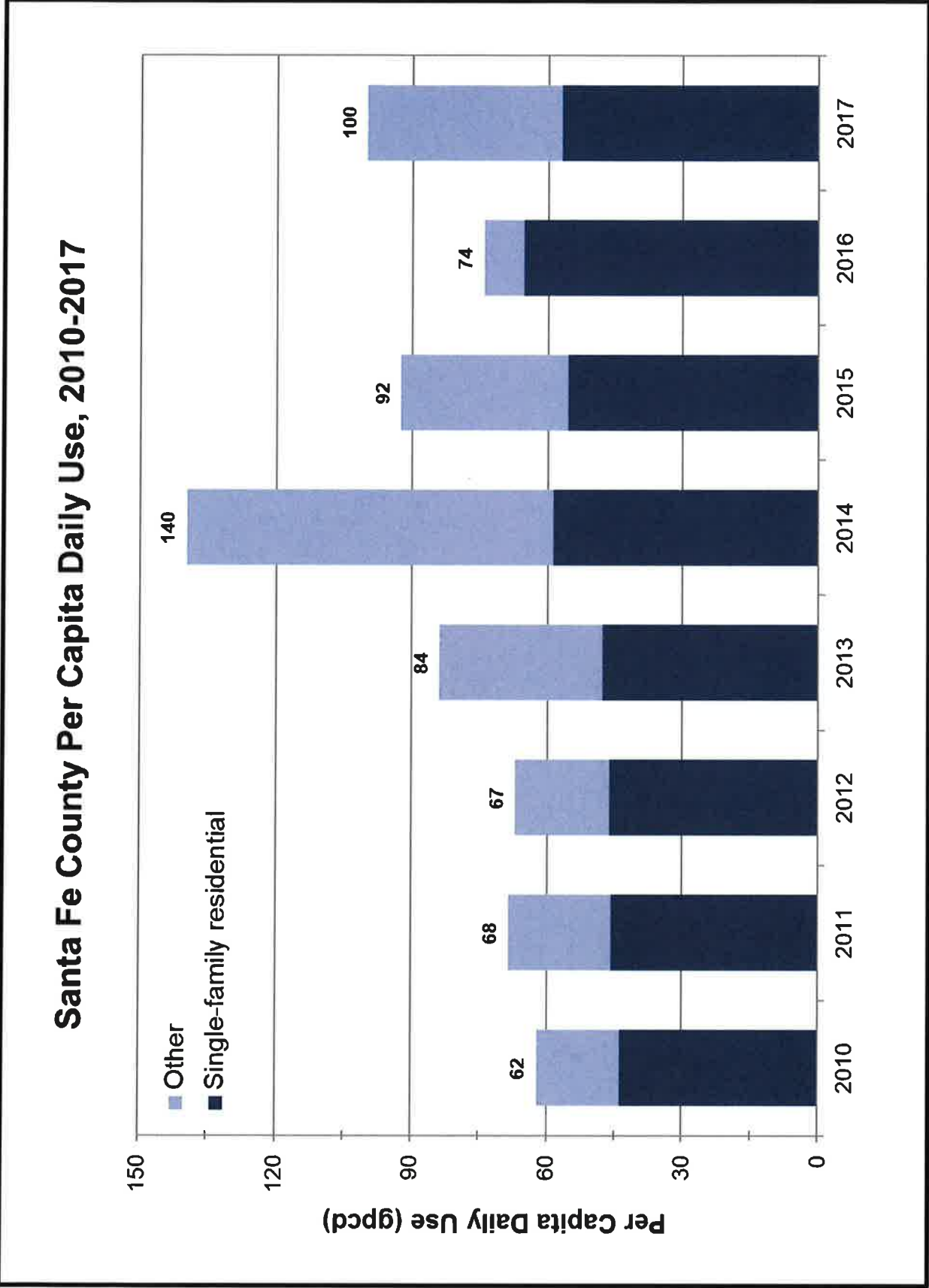
Year	Per Capita Daily Use (gpcd*)
2010	62
2011	68
2012	67
2013	84
2014	140
2015	92
2016	74
2017	100
Average	86

*gpcd = Gallons per capita per day

In the future, the County's water system commitments will be expanding in accordance with the Aamodt Settlement. The following excerpts from *Water Matters!* (2015) provide a brief overview of this case:

The "Aamodt case" is a complex, long-running adjudication of water rights in the Pojoaque River watershed northwest of Santa Fe. In 1966, it was filed in federal court as State of New Mexico, ex rel. State Engineer, et al. v. Aamodt, et al. The parties include the State, through the State Engineer, about 5,600 non-Indian claimants, the Pueblos of Nambé, Pojoaque, San Ildefonso, and Tesuque, and governmental entities such as the county of Santa Fe, many acequias, the Pojoaque Valley Irrigation District, and several federal and state agencies. The rights being adjudicated include, but are not limited to, State water rights of non-Indians and government agencies for irrigation, domestic and commercial uses as well as the federal water rights of the Pueblos to historic, present, and future uses.

Figure 4. Santa Fe County Per Capita Daily Use, 2010-2017



[Aamodt Settlement highlights continues]

The Aamodt settling parties, seven governmental entities, including the state, and representatives from the non-Indian community, began negotiations in 2000. By 2004, a settlement was drafted and presented to the public. The settlement featured a regional water supply system for both Pueblos and non-Indians. In this first version of the settlement, all non-Indians had to hook up to the water system. After review and public discussion, the settling parties returned to the table to address non-Indian communities' concerns and to remove the mandatory provision for water-system hookup. The State of New Mexico, Santa Fe County, City of Santa Fe, representatives from non-Indian communities, and the four Pueblos signed the 2006 Settlement Agreement and sent it to Congress. For more information about the settlement process, please see the chapter "American Indian Water Right Settlements" in this edition of *Water Matters!*.

In the spring of 2010, the Stell Ombudsman Program conducted eleven public meetings for the County of Santa Fe to explain the settlement agreement. In December of 2010, Congress passed the Claims Resolution Act, which approved the Aamodt and other settlements, and the President signed it into law. The parties then adjusted the 2006 Settlement Agreement to conform to the Act, and in March of 2013, the agreement was formally signed by the Secretary of the Interior, Pueblo leaders, and state officials. In the early months of 2014, the Stell Ombudsman Program held thirty public meetings and office hours for the county of Santa Fe to explain the settlement agreement. Other interests also held public meetings.

The key provisions of the Aamodt settlement include:

- constructing a regional water system;
- providing non-Indians with a choice of whether to join the settlement, and upon joining, a choice of whether to hook up to the regional water system;
- relinquishing existing Pueblo claims against non-Indians who join the settlement;
- closing the basin to new water right development following the entry of a Pueblo final decree by the court;
- metering all water uses in the basin;
- limiting Pueblo water use; and
- protecting existing uses.

The Regional Water System is a pipeline and water-distribution system which will have capacity to deliver water from the Rio Grande to the four Pueblos and to non-Indian residents. The system provides 2,500 acre-feet per year for Pueblo consumptive use. Santa Fe County is allowed to "piggy back" on the system with an extension to serve non-Pueblo domestic well owners who choose to connect and all future water development. The county portion of the system will accommodate up

to 1,500 acre feet per year. Water for the regional water system will be diverted from the Rio Grande through infiltration well structures along the river banks on San Ildefonso Pueblo land above Otowi gage. This project is separate from Santa Fe's Buckman Diversion Project. The Bureau of Reclamation will build the system.

Prior to the passage of the Aamodt Litigation Settlement Act, the cost estimate for the settlement in 2006 dollars was \$177.3 million (\$106.4 million for the federal contribution, \$49.5 million for the state contribution, and \$21.4 million for the county's contribution). This cost estimate is indexed to accommodate economic changes. The majority of the funding is for the construction of the regional water system and for the acquisition of water rights for the Pueblos. In the Claims Resolution Act, Congress appropriated \$81.8 million of the federal contribution and authorized an additional \$92.5 million.

3.2.3 *Las Campanas*

BDD has two customers from the Las Campanas community: Las Campanas Water and Sewer Cooperative (the Co-op) and the Club at Las Campanas (the Club).

3.2.3.1 *Las Campanas Water and Sewer Cooperative*

The Co-op provides treated drinking water for domestic use in Las Campanas and serves 656 water connections — an estimated population of 1,500 people (656 connections x 2.3 people per household). In 2016, the Co-op's ADD was 236,921 gallons, with a peak daily demand of 498,379 gallons.

Finished treated water travels via gravity flow from the City's 10 million-gallon storage tank to the Co-op's receiving station, where it is treated with sodium hypochlorite. The Co-op owns and maintains two underground storage tanks (0.75 million-gallon and 0.5 million-gallon) and 45 miles of pipeline, sized 4 to 18 inches, distributed among four pressure zones.

Table 4 shows the monthly water flow into the Las Campanas receiving station for the period of 2011 to 2016.

Table 4. Water Flow at Las Campanas Co-op Receiving Station, 2011-2016

Month	Flow (million gallons)					
	2011	2012	2013	2014	2015	2016
January	2.5	1.9	2.4	2.4	1.9	2.0
February	2.5	1.4	1.6	2.1	1.4	1.8
March	1.7	2.5	2.4	2.5	2.2	2.7
April	6.7	5.0	5.3	5.6	4.2	4.8
May	9.7	9.7	10.2	8.9	7.5	9.2
June	11.9	11.2	12.7	10.9	10.4	12.0
July	13.0	11.0	13.0	11.0	9.7	14.5
August	11.2	11.5	11.5	10.2	10.8	10.2
September	8.6	9.6	8.4	9.6	10.3	12.4
October	5.5	7.0	5.7	7.1	6.9	11.5
November	2.0	2.3	2.2	2.5	1.9	3.3
December	2.0	2.6	2.3	2.3	2.2	2.1
Total Annual	77.3	75.6	77.9	75.0	69.5	86.5

3.2.3.2 The Club at Las Campanas

The Club has two 18-hole golf courses and a driving range that make up a total of 140 acres of irrigated turf grass. On average, from 2010 to 2016, the Club has applied just shy of 600 acre-feet (200 million gallons) of raw (untreated) water per year to maintain the turf grass. The water used for irrigation is a combination of treated effluent from the Co-op and untreated, raw water diverted from the Rio Grande by the BDD. Table 5 shows the Club's monthly raw water usage from 2010 to 2021.

The Club derives its water rights to water diverted from the Rio Grande from several sources:

- ✚ The Club has access to around 250 ac-ft/yr of native Rio Grande raw (untreated) water purchased through the Las Campanas and Sewer Water Co-op.
- ✚ The Club leases 600 ac-ft/yr of SJC water from the Jicarilla Apache Tribe.
- ✚ The Club has a contract with the County for up to 600 ac-ft/yr of native Rio Grande water.

- ✿ In addition, the city has occasionally supplied the Club with water from the city's Buckman wells during emergencies.

Table 5. Water Usage by the Club at Las Campanas, 2010-2016

Month	Irrigation Water Use (million gallons)												Average
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
January	0.3	0.8	0.6	0.1	3.0	0.0	0.0	0.0	1.6	1.6	3.6	0.0	1.0
February	0.0	1.1	1.2	2.7	5.1	0.3	1.3	1.1	4.2	1.6	0.0	0.0	1.5
March	0.7	9.2	10.6	6.9	9.2	11.7	18.9	14.4	13.2	0.0	1.7	0.0	8.0
April	12.2	20.9	18.9	23.7	25.8	22.9	17.9	20.6	32.3	16.3	20.4	13.5	20.4
May	25.3	29.6	32.6	31.2	29.4	22.8	29.0	24.7	36.2	33.9	41.3	20.0	29.7
June	35.0	41.2	40.6	43.3	36.1	35.6	36.9	39.4	44.1	38.3	38.9	22.4	37.7
July	19.2	38.3	27.8	29.5	29.8	19.6	33.0	37.1	28.7	33.5	35.6	14.4	28.9
August	21.8	22.1	26.9	22.5	23.7	26.7	13.9	25.6	20.1	27.2	28.5	14.1	22.8
September	23.6	18.2	21.0	15.7	21.3	22.1	20.3	19.8	17.8	27.6	24.2	9.0	20.1
October	11.2	11.4	17.9	15.3	16.0	14.6	22.1	0.0	11.1	18.0	17.0	5.4	13.3
November	3.1	4.6	5.1	3.7	6.7	5.4	3.4	14.2	1.8	0.6	0.0	0.2	4.1
December	1.6	0.1	0.0	0.6	1.2	0.5	0.9	0.0	0.0	0.0	0.0	0.0	0.4
Total Annual	154.1	197.6	203.1	195.3	207.0	182.2	197.6	196.7	211.0	198.6	211.2	99.0	187.8

The Club has one booster station (BS2A), three irrigation system pump-houses, two transfer pump stations, and five holding ponds. The holding ponds provide approximately 100 acre-feet of combined water storage capacity. Approximately 10 miles of 12-inch pipelines connect BS2A to the holding ponds. Watering requirements for the turf grass are determined by three on-site weather stations.

3.3 BDD Water System

The intake for the BDD system is located on the east bank of the Rio Grande in the historic ghost town of Buckman, approximately 3.5 miles downstream of the Otowi Bridge. The U.S. Forest Service owns the land at the BDD intake. The surrounding area is a mix of Bureau of Land Management (BLM), San Ildefonso Pueblo, and private land (Figure 3). One lift station and two booster stations pump the raw water uphill approximately 1,100 feet in altitude and 11 miles in length via a 30-inch pipeline from the river to the BRWTP. The BRWTP is an advanced treatment facility. As shown in Appendix A, BDD applies the following water treatment processes (BDD, 2017):

- ✚ River water is diverted through a riverside structure with fish screens. Larger sand particles are separated from the pumped raw water and returned to the Rio Grande. The remaining raw water is pumped to the BRWTP.
- ✚ At BRTWP, raw water passes through three pre-sedimentation basins which allow remaining larger particles to settle to the bottom of the basins via gravity.
- ✚ After the pre-sedimentation basins, water is mixed with a coagulant (ferric chloride) which causes even the finest particles to clump together. Ozone is added to oxidize organic material and improve the coagulation process.
- ✚ Next, flocculation is achieved through gentle mixing. The tiny individual particles collide, stick together, and become larger and heavier. Contaminants and impurities are swept up and removed with the flocculated particles.
- ✚ Plate settlers are used to provide very still conditions to separate by gravity the heavier floc particles from the water. The settled solids from this process are concentrated and dewatered in a centrifuge, and then disposed of appropriately.
- ✚ After the plate settling the clarified water is filtered under low pressure through membranes with small pore size. This membrane filtration removes all of the particulate matter larger than 0.1 micrometer.
- ✚ Ozone is applied once again to the clean water. It oxidizes dissolved organic material not previously removed and kills microbes. Residual ozone is then destroyed.
- ✚ The water passes through granular activated carbon (GAC) contactors. The oxidized organics are removed by the biologically active carbon, which also works as a “polishing” process.
- ✚ Chlorine and sodium hydroxide are added to disinfect the water and to correct the pH of the treated water. This protects against any contamination that might occur downstream in the pipes. Fluoride is added for dental health. Lastly, a corrosion inhibitor is included to help control lead and copper release from the pipes. The finished drinking water is stored in a 4 million-gallon tank. Two booster stations pump the treated water north and south

sending it to the City and County drinking water distribution systems for consumption by the public.

Finished water is pumped from BRWTP to BDD's booster station 4A (BS-4A), where it goes to the City's Buckman Wellfield Booster Station 3 and eventually on to the City's 10 million-gallon storage tank, or to booster station 5A (BS-5A), where it travels directly into the City's and County's distribution systems (Appendix A). The maximum daily capacity of the BDD water treatment facility is about 15 million gallons. The BDD typically operates at an average of about 6 mgd.

4. HYDROGEOLOGY

4.1 Regional Hydrogeology

Santa Fe County is located between the Jemez Mountains to the west and the Sangre de Cristo Mountains to the northeast. Both surface water and groundwater are available in the area.

BDD obtains surface water from the Rio Grande. The 2016 Jemez y Sangre Regional Water Plan (NM ISC and OSE, 2016) provides the following description of rivers in the area:

The Rio Grande, which drains south through the region from Embudo to Cochiti Reservoir, is the major surface water feature (Figure 3-1), although use of this water is limited by provisions of the Rio Grande Compact. The provisions of the Rio Grande Compact effectively split the available surface water supply for the Rio Grande Basin above Elephant Butte Reservoir into the part north of the Otowi gage and the part south of the gage (see Section 5 for discussion of the Rio Grande Compact). The Rio Chama, which flows into the Rio Grande near the northwest boundary of the planning region, also contributes a significant amount of water to the region, much of it imported water from the San Juan-Chama Project. The Santa Fe River, which supplies a portion of the City of Santa Fe water supply, Galisteo Creek south of Santa Fe, and the Rio Nambe, Rio Tesuque and Pojoaque River north of Santa Fe are also important tributaries in the region. The quality of the surface water in the region is generally very good to excellent.

The Tesuque Formation, part of the Santa Fe Group aquifer, underlies the BDD area. Spiegel and Baldwin (1963) provides the following description of the Tesuque Formation:

The Tesuque formation of middle Miocene to early Pliocene age, here named for the town of Tesuque, 5 miles north of Santa Fe ..., consists of several thousand feet of pinkish-tan soft arkosic, silty sandstone and minor conglomerate and siltstone...

In the Santa Fe area, the Tesuque formation is generally exposed north of the Santa Fe River, and it is best exposed along the north edge of the Santa Fe area. The Tesuque, which represents the greater part of the Santa Fe group in the Santa Fe area, rests with at least local angular unconformity on the volcanic rocks of Oligocene and Miocene age and is overlain with angular unconformity by the Ancha formation. Although near its base the Tesuque includes sediments derived from Tertiary igneous rocks, it consists principally of debris from Precambrian rocks.

The color of the Tesuque formation ranges from grayish orange to moderate reddish orange and light brown. The usual pinkish color is due largely to the predominance of reddish grains of microcline. Crossbedding is common, and molds of desiccation cracks have been noted on the under surfaces of sandstones that rest on siltstones. Cementation by calcium carbonate is common, and in many specimens the cement is crystalline. The conglomerate, which is coarse, is common near the mountain front but less common farther west, partly because in general the lower beds are exposed only near the mountains. Clay is present only in very small amounts, but silt and very fine sand form a large proportion of the unit. The sand in many of the sandstone beds is fairly well sorted.

Due to the depth of the City's Buckman wells and the hydrogeology of the area, there has been no evidence of any Buckman wells being under the influence of surface water, despite close proximity of several wells to the river, namely Buckman wells (BW) 1 and 8.

4.2 Water Sources

4.2.1 Rio Grande Source Water Quality

According to BDD (Bowman, 2017):

The water quality of the Upper and Middle Rio Grande under base flow ("normal" or ambient) conditions is good overall, with few and occasional minor exceedances of individual water quality standards (NMED/DOE/OB, 2012). Sediments carried in stormwater flow conditions generally exhibit concentrations that are elevated above ambient levels for certain constituents that are attached to soil and sediment particles. Stormwater studies show a strong correlation between certain surface water contaminants such as radionuclides, polychlorinated biphenyls (PCBs), metals and suspended sediment concentrations. That is, many of the contaminants of concern and other chemical compounds have a strong affinity for and are bound to the particles and organic matter in suspended sediments. Storm flow events are short lived, transient, and their sediment loads fluctuate proportionately with changing flow.

The quality of the surface water in the Rio Grande is subject to the Clean Water Act (CWA), and thus subject to the water quality standard listed in 20.6.4 NMAC. Specifically, BDD falls under the 20.6.4.114 NMAC segment of the river, and potential uses are listed in that subsection of the rules, which includes "public water supply." As such, even though the general water quality of this stretch is "good overall," this segment of the Rio Grande is impaired for uses such as irrigation and livestock watering due to the presence of contaminants at concentrations exceeding certain standards. The

2018-2020 State of New Mexico Clean Water Act §303(d)/§305(b) Integrated List (pg. 190) <https://www.env.nm.gov/wp-content/uploads/2018/03/Appendix-A-Integrated-List.pdf> details all impaired uses and exceedances from standards for this stretch of the river. The figure below depicts many other stretches impaired for different uses in the region of BDD (NM ISC and OSE, 2016.)

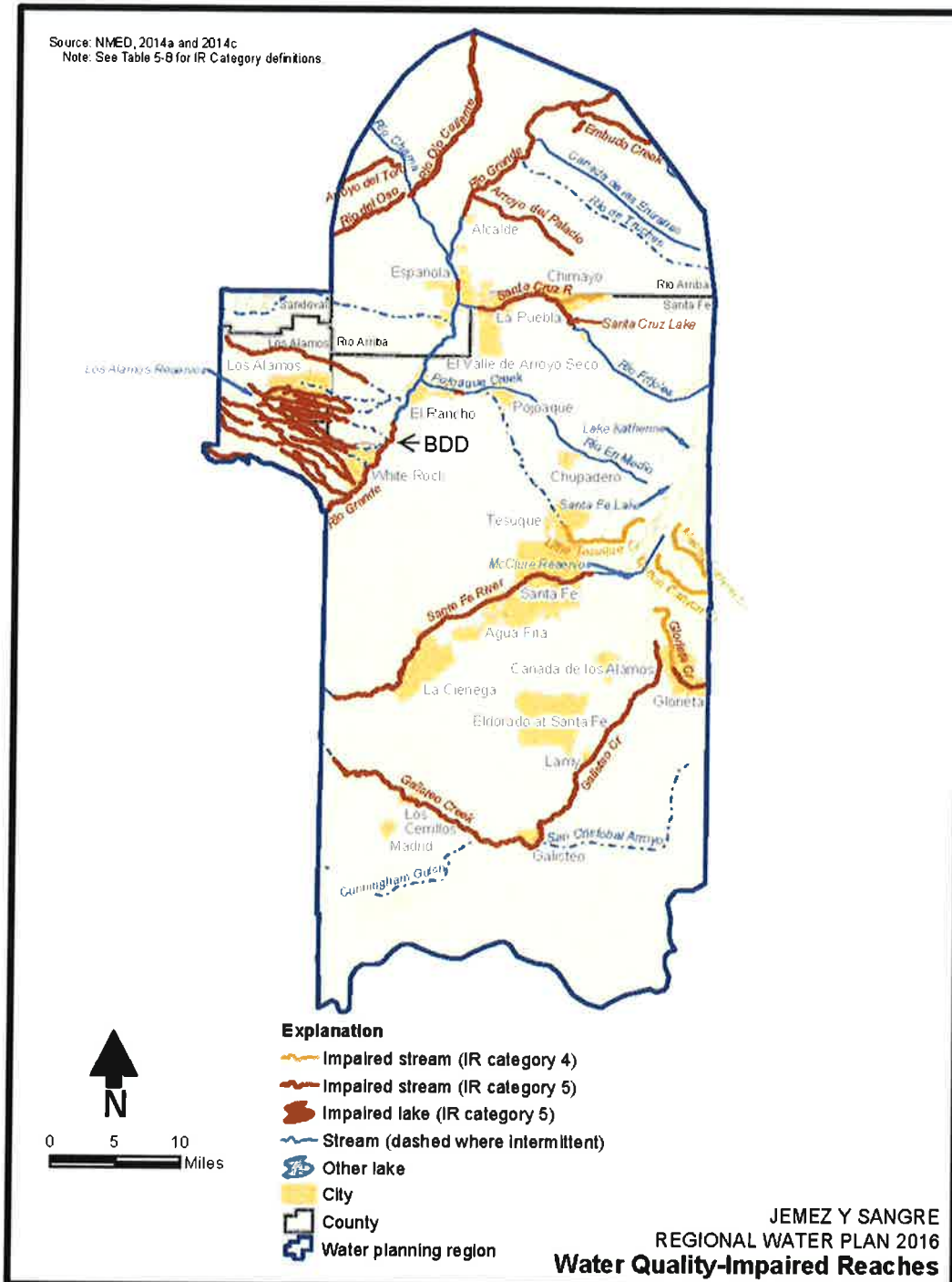


Figure 5-13

BDD monitors the quality of the Rio Grande as part of their National Pollutant Discharge Elimination System (NPDES) permit. EPA Region 6 was satisfied with the results of the first three years of BDD's monitoring of the Rio Grande. In subsequent renewals of the NPDES permit, the EPA has reduced the initial lengthy list of monitored constituents to a more limited list of turbidity, pH, and Whole Effluent Toxicity (WET). However, water quality of the Rio Grande continues to be monitored by other environmental entities, some of them being USGS and NMED under the CWA 303(d) program.

4.2.2 Drinking Water Quality Reports

Drinking water quality is monitored by the NMED DWB under the Safe Drinking Water Act. To protect public health, drinking water quality is checked against the national primary standards (maximum contaminant levels [MCLs]) for 87 constituents and secondary standards (secondary MCLs [SMCLs]) for 15 constituents.

U.S. EPA (2017b) defines primary and secondary standards as follows:

EPA has established National Primary Drinking Water Regulations (NPDWRs) that set mandatory water quality standards for drinking water contaminants. These are enforceable standards called "maximum contaminant levels" (MCLs) which are established to protect the public against consumption of drinking water contaminants that present a risk to human health. An MCL is the maximum allowable amount of a contaminant in drinking water which is delivered to the consumer.

In addition, EPA has established National Secondary Drinking Water Regulations (NSDWRs) that set non-mandatory water quality standards for 15 contaminants. EPA does not enforce these "secondary maximum contaminant levels" (SMCLs). They are established as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These contaminants are not considered to present a risk to human health at the SMCL.

As required by the Safe Drinking Water Act, NMED DWB samples BDD's finished drinking water. Of the 70 primary contaminants monitored by the NMED DWB, none have ever been detected at levels exceeding the MCL. A summary of the results from 158 monitored constituents at BDD from 2011 to 2016 is presented in Appendix B. For each tested constituent, the table provides the number of detected results, and the minimum, maximum and average value of all detected values.

Public water systems report the results of required water quality sampling to their customers in a consumer confidence report (CCR.) due July 1st of every year. Results of BDD water quality testing are published under the Santa Fe City's CCR. The CCRs for 2019, 2020, and 2021 are provided in Appendix B, and show concentrations of the monitored constituents in comparison to MCLs. The results from the additional and voluntary drinking water testing are reported on the BDD web site. BDD had not exceeded any MCL for primary contaminant since its start of operation in 2011.

4.2.3 Production Rates

Table 6 summarizes the BDD monthly production of finished water from BS-4A and BS-5A from 2011 to 2021. Figure 5 depicts the total annual production over this time period, while Figure 6 shows these data split by production from BS-4A and BS-5A. The lowest annual production since BDD opening was 1,271 million gallons in 2019; the highest was 2,035 million gallons in 2021.

Table 6. BDD Monthly Production, 2011-2021

Month	Production (million gallons)																	
	2011			2012			2013			2014			2015			2016		
	BS-4A	BS-5A	Total	BS-4A	BS-5A	Total	BS-4A	BS-5A	Total	BS-4A	BS-5A	Total	BS-4A	BS-5A	Total	BS-4A	BS-5A	Total
January	63.7	0	63.7	101.9	25.9	127.8	100.4	48.7	149.1	88.7	34.5	123.2	49.4	45.1	94.5	87.2	27.3	114.4
February	97.3	0	97.3	56.9	21.8	78.7	33.7	43.1	76.8	79.9	30.6	110.5	68.8	30	98.7	65.8	32.9	98.8
March	117.9	1.1	119	60.9	43.3	104.2	74.3	49.2	123.5	111.1	45.4	156.5	65.1	32.9	98	121	44.7	165.7
April	194.8	4.7	199.5	118.2	57.9	176.1	159.2	56.2	215.4	43.9	53.5	97.4	4.5	6.4	10.9	162.1	42.6	204.7
May	130.8	11.3	142.1	155.4	68.9	224.3	230.4	68.8	299.2	174.5	63.9	238.4	66.6	37.8	104.4	103.6	48.7	152.2
June	243.8	6	249.8	131	81.7	212.7	209.1	83.8	292.9	117.9	70.3	188.3	127.7	53.8	181.5	38.2	30.1	68.3
July	110.4	28.3	138.7	22.8	17.9	40.7	71.7	55.6	127.3	68.2	58.6	126.8	70.3	49	119.3	53.6	61.3	114.9
August	10	23.9	33.9	34.3	43.3	77.6	0.0	8.2	8.2	91.1	65	156.1	83.8	46.6	130.4	18.4	27.9	46.3
September	92.9	63.3	156.2	157.7	57.2	214.9	7.9	9.8	17.7	109.4	75.4	184.8	134	60.3	194.2	121.2	56.2	177.4
October	118.6	59.1	177.7	179	57.5	236.5	30.4	56.4	86.8	81.2	69	150.1	151.9	49.7	201.5	181.6	32.1	213.7
November	95.2	47.6	142.8	128.1	40.3	168.4	47.9	43.6	91.5	71.7	60.3	131.9	109.3	43.6	152.9	113	18.1	131.1
December	97	39.2	136.2	129.2	44.6	173.8	53.2	32.6	85.8	81.8	59.7	141.5	69.3	23.7	92.9	101.2	12.8	114
Total Annually	1372.4	284.5	1656.9	1275.4	560.3	1835.7	1018.2	556.0	1574.2	1119.4	686.2	1805.5	1000.7	478.9	1479.2	1166.9	434.7	1601.5

Month	Production (million gallons)														
	2017			2018			2019			2020			2021		
	BS-4A	BS-5A	Total	BS-4A	BS-5A	Total	BS-4A	BS-5A	Total	BS-4A	BS-5A	Total	BS-4A	BS-5A	Total
January	90.3	34.1	124.3	65.1	47.6	112.7	70.9	28.3	99.2	128.9	6.4	135.3	86.3	31.4	117.7
February	85.1	33.6	118.7	61.8	42.5	104.3	54.1	25.4	79.5	102.3	21.8	124.1	95.0	31.2	126.2
March	104.9	50.8	155.7	41.1	50.1	91.2	20.9	21.0	41.9	79.2	28.2	107.4	102.0	36.7	138.7
April	99.8	64.5	164.3	133.3	43.6	176.9	12.1	13.6	25.7	67.1	35.0	102.1	133.1	47.2	180.3
May	64.0	65.0	129.0	204.5	52.9	257.4	92.9	41.3	134.2	103.1	55.0	158.1	194.3	56.5	250.8
June	82.1	71.3	153.4	170.9	59.3	230.2	81.5	49.1	130.6	94.9	65.2	160.1	178.8	70.0	248.8
July	85.6	74.0	159.7	166.9	61.8	228.7	111.6	59.4	171.0	141.3	66.0	207.3	100.9	59.9	160.8
August	81.4	68.9	150.2	140.2	56.6	196.7	60.7	44.6	105.3	180.0	71.0	251.0	158.4	65.7	224.1
September	117.2	66.7	183.9	95.0	45.0	139.9	111.3	26.7	138.0	155.7	50.0	205.7	118.1	43.7	161.8
October	79.3	54.8	134.1	119.1	34.6	153.8	115.3	30.4	145.7	121.1	50.0	171.1	146.4	19.6	166.0
November	47.4	47.8	95.2	99.3	26.8	126.0	69.8	26.7	96.5	87.1	27.8	114.9	100.0	31.7	131.7
December	61.8	48.7	110.5	86.3	26.4	112.7	94.4	9.1	103.5	92.4	28.7	121.1	97.5	30.4	127.9
Total Annually	998.8	680.1	1679.0	1383.3	547.2	1930.5	895.5	375.6	1271.1	1353.1	505.1	1858.2	1510.8	524.0	2034.8

Figure 5. BDD Total Annual Production, 2011-2021

BDD Total Annual Production, 2011-2021

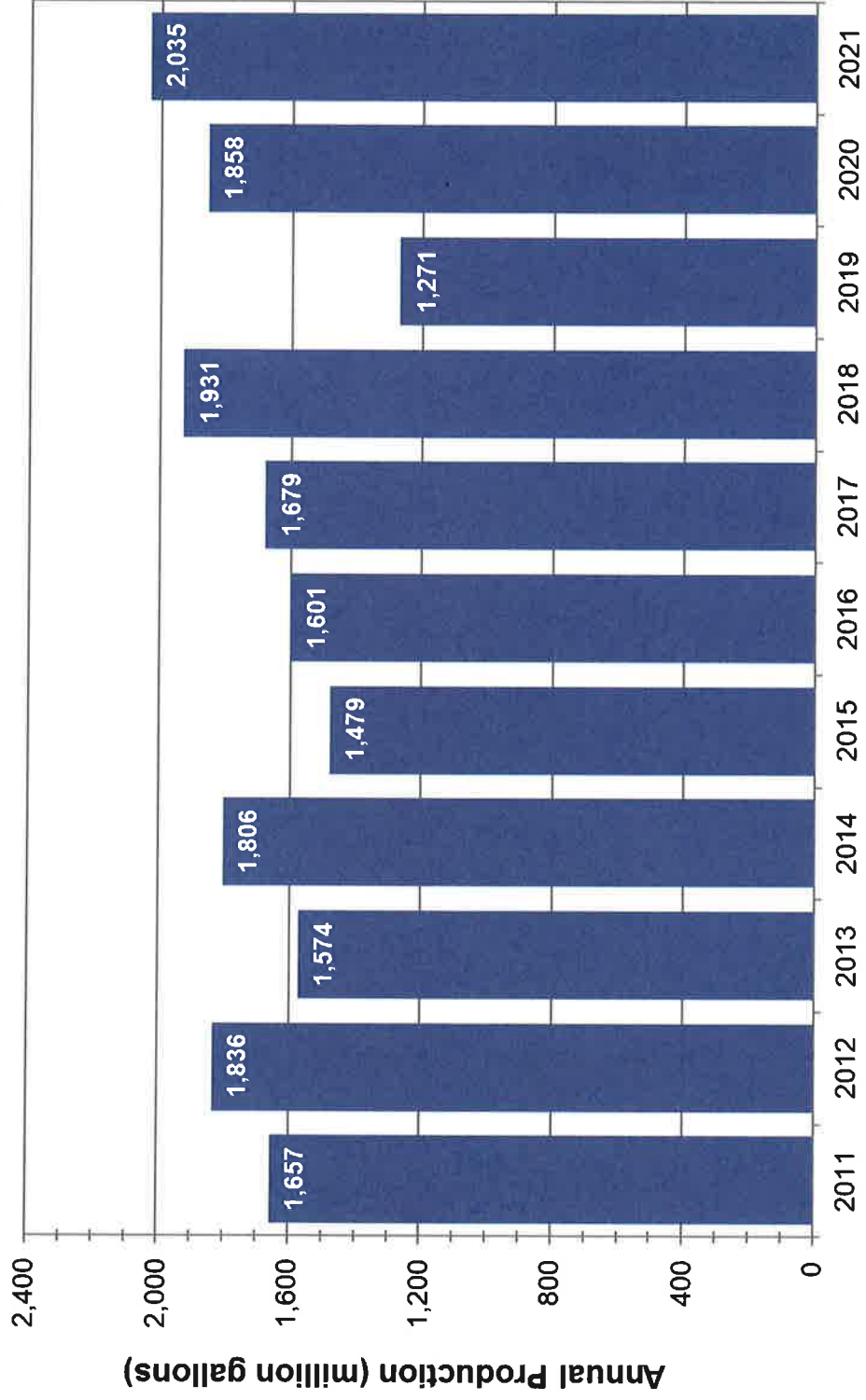
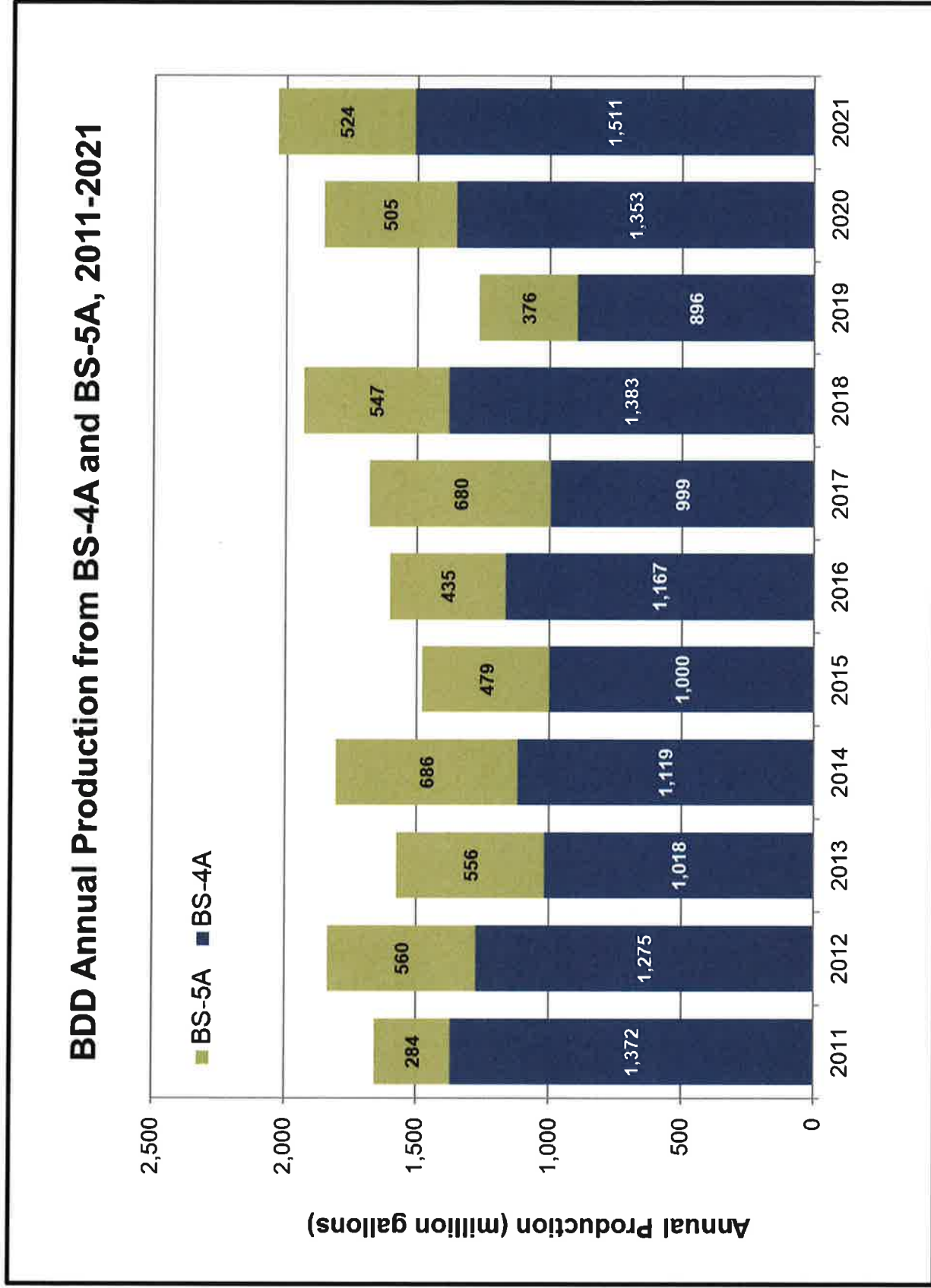


Figure 6. BDD Annual Production from BS-4A and BS-5A, 2011-2021



5. WATER SUPPLY CHANGES AND IMPACTS

5.1 Historical Change and Impacts

During the severe drought experienced by Santa Fe from the late 1990s to 2002, and despite ongoing and very successful water conservation programs, the Santa Fe region did not have enough reliable and sustainable drinking water sources to meet the growing needs. The City of Santa Fe and the County of Santa Fe designed a sustainable water supply project, the BDD project, to help protect our region from running out of water during a drought.

The project was needed to supplement the two sources of water the local community depended on – groundwater wells and reservoirs on the Santa Fe River. The groundwater wells were not sustainable at the pre-BDD pumping levels due to increasing demand, and the local reservoirs can run out of water during a dry year. The BDD promised to provide a new source of surface water in addition to the existing supplies of surface water and help the regional aquifer rest and recharge (refill) so that it will be here for the future generations. The City of Santa Fe and the County of Santa Fe constructed the BDD to add this source of water by diverting and treating water available from the Rio Grande that they cannot access through groundwater pumping.

The BDD came online in January 2011. In May 2011, after nearly a decade in development, the Buckman Direct Diversion Board (BDDDB) assumed responsibility for the day-to-day operations, management and maintenance of the Buckman Regional Water Treatment Plant (BRWTP) and facilities. This new water supply source is reliable, sustainable and provides flexibility in how the city and county choose to use the different supply sources for water consumption. Operation of all four sources (Section 3.2.1) will continue to meet the needs of city and county water system customers, improve the regional public water supply under drought conditions, and replace unsustainable groundwater pumping making a drought reserve possible.

5.2 Need for Future Water Sources

BDD is currently able to meet the demand of its customers. There are no plans for expanding the BDD system or water rights holdings.

6. SOURCE WATER PROTECTION AREA

The source water protection area (SWPA) is described as a buffer around wells, reservoirs, and on either side of rivers, streams, and canals for use in identifying potential contamination from sources within close proximity. For the purposes of BDD's SWPP, the SWPA begins 500 feet downstream of the intake and ends 10 miles upstream. In reality, catastrophic contaminations occurring upstream from BDD of even more than 10 miles may influence the river water quality and may influence the BDD operations. However, in order to make this plan practical and feasible, the limit of 10 miles upstream will be accepted as the upper limit of the SWPA. Tributaries within this SWPA are included even if not specifically delineated on Figure 7.

For purposes of delineating surface water SWPAs, NMED distinguishes between two different types of watersheds, Type A and Type B, defined as follows:

Type A watersheds are defined as having an area under 30 square miles. Buffer zones within the watershed are defined as follows:

- ✦ Buffer Zone A is a 200-foot wide strip of land paralleling either bank of an active stream channel and/or extending from the mouth or inlet of an impoundment to the uppermost boundary of the watershed.
- ✦ Buffer Zone B is a 300-foot wide strip of land beginning at the outside margin of buffer Zone A.
- ✦ Buffer Zone C is the balance of the land area extending to the topographic boundary.

Type B watersheds are defined as having an area over 30 square miles. Potential source of contamination (PSOC) inventories and susceptibility analysis are applied only to that portion of the watershed defined as "critical stream segments," as follows:

- ✦ Buffer Zone A is a 200-foot wide strip of land paralleling either bank of an active stream channel.
- ✦ Buffer Zone B is a 300-foot wide strip of land paralleling an active stream channel and beginning at the outside margin of Buffer Zone A.
- ✦ Buffer Zone C is a ½-mile wide corridor of land paralleling either bank of an active stream channel.

The Rio Grande has a Type B watershed; therefore, the SWPA is subdivided into the following three zones:

- ✚ Zone A: radius of 0 to 200 feet from each stream bank
- ✚ Zone B: radius of 201 to 500 feet from each stream bank
- ✚ Zone C: radius of 501 to 2,640 feet from each stream bank

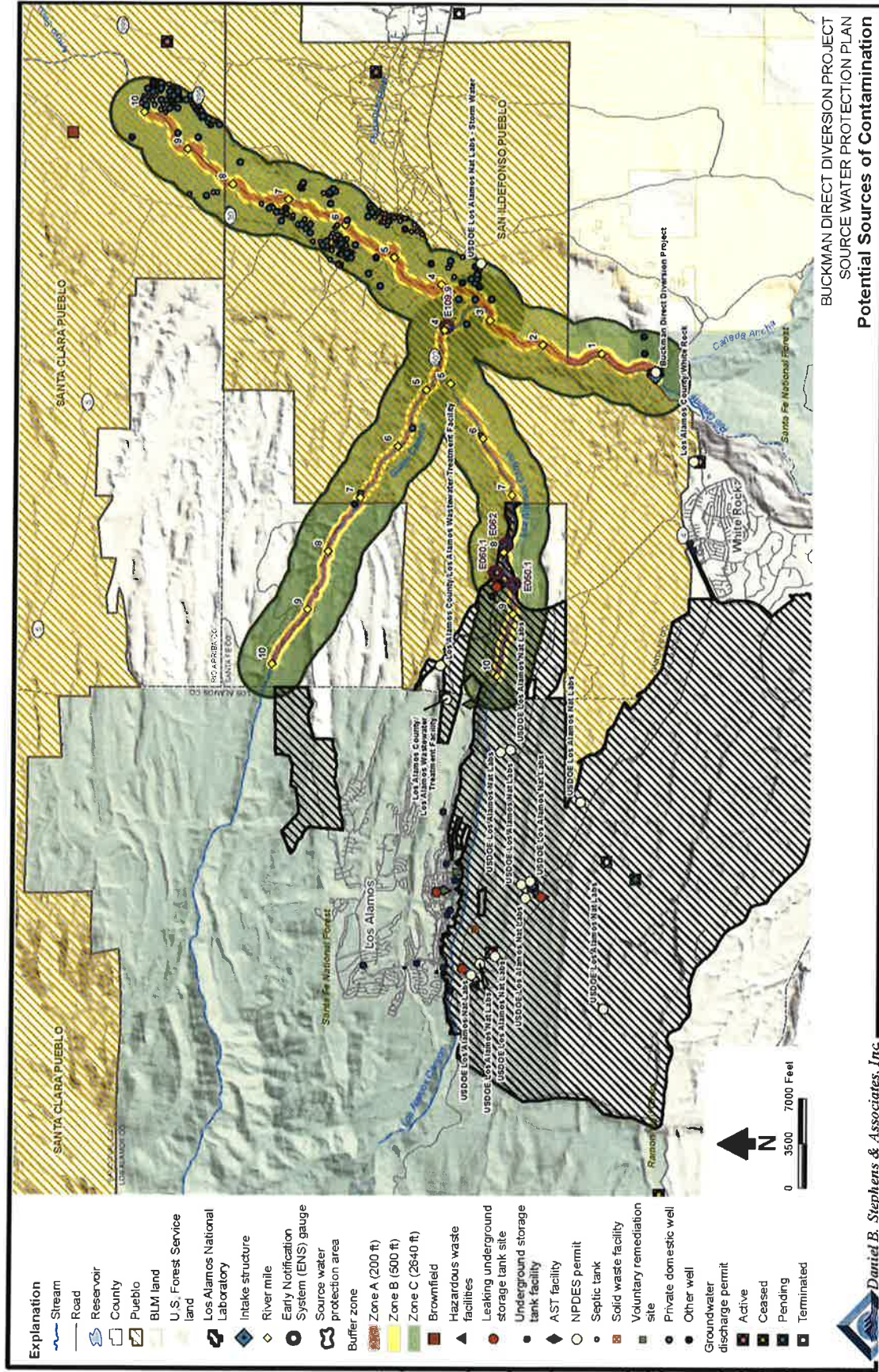
In addition to the Rio Grande, two other large tributaries have been added to the BDD SWPA: Los Alamos Canyon and Guaje Canyon, both being dry canyons (ephemeral) and part of the Los Alamos Canyon watershed. When these ephemeral streams flow, they may carry the LANL legacy waste contaminated sediments to the Rio Grande. Over the years, LANL-contaminated sediments have settled along the banks of Los Alamos Canyon, especially in its lower portion. Englert (NMED DOE OB, 2011) found that most contaminated sediments transported to the lower Los Alamos Canyon from the contaminated sources (upper Los Alamos Canyon and Pueblo Canyon) settle in the lower Los Alamos Canyon and only small part (19%) of the mobilized contaminated sediments discharge to the Rio Grande. While Guaje Canyon is not known to be affected by LANL contamination, it flows into the lower Los Alamos Canyon, and can therefore remobilize contaminated sediments from the lower Los Alamos Canyon and discharge them to the Rio Grande.

The BDD SWPA for the Rio Grande, including the delineated portions of Los Alamos Canyon watershed, is shown in Figure 7. The total area of the delineated SWPA is 22.03 square miles: 5.76 square miles in Los Alamos Canyon, 5.41 square miles in Guaje Canyon, and 10.86 square miles in the Rio Grande. For ease in identifying and tracing PSOCs, river miles have been added to the map, starting 500 feet downstream of the intake and moving upstream. Guaje Canyon meets Los Alamos Canyon between Los Alamos Canyon river miles 4 and 5; the convergence of Los Alamos Canyon into the Rio Grande occurs between Rio Grande river miles 3 and 4. The stream and river mile will be stated in all text and table references (e.g., Los Alamos Canyon river mile 7 versus Guaje Canyon river mile 7 or Rio Grande river mile 7).

The delineated SWPA meets the criteria of the NMED DWB guidance for establishing an area to evaluate for PSOCs. DBS&A requested and received geographical information system (GIS) data used in NMED DWB's Source Water Protection Atlas (NMED DWB, 2017), an interactive mapping tool that contains active and inactive drinking water sources, regulated sites, and other information.

These GIS data were used to generate the maps showing the river's SWPA and PSOCs. A map encompassing the PSOCs in all watersheds upstream from BDD is included in Appendix E.

Figure 7. BDD SWPA and PSOCs



7. POTENTIAL SOURCES OF CONTAMINATION (PSOC)

7.1 Overview of Potential Contaminant Sources and Risk Assessment

Potential sources of contamination (PSOCs) are defined as any possible site or event that could, under any circumstance and time frame, lead to contamination of drinking water sources. Not all sites identified as PSOCs pose the same level of risk. Depending on the type of PSOC, some sites may pose little to no contamination risk, while others may pose an imminent threat. Sources of contamination (SOCs) are considered those activities or environmental accidents that are currently threatening or contaminating the source water

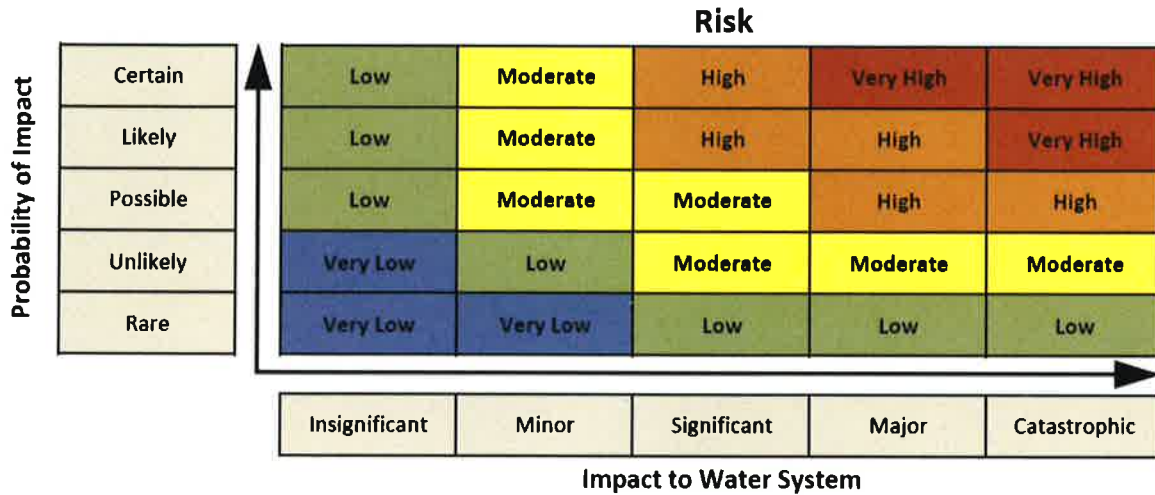
The source water protection area (SWPAs) for BDD was described in the previous section and delineated on Figure 7.

Following the identification of PSOCs, a risk assessment was performed for each contaminant. This methodology is based on a technique developed by the Colorado Rural Water Association (e.g., CRWA 2017) and involves estimation of risk using two parameters: the “probability of impact” and the level of “impact to the water system.”

The “probability of impact” changes in increasing order from “rare” to “certain”, and the “impact to the water system” changes in increasing order from “insignificant” to “catastrophic.” For definition of each level of these parameters, see the table below. When determining the risk for a source of contamination, one will find the “impact to the water system” along the x-axis and then along the vertical y-axis find the level of “probability of impact” in order to determine the overall risk of that specific source of contamination. The factors influencing both parameters will be how close the source is to the water resource, how large the contamination is or could be, how potent or toxic the contaminant of concern is and how fast the contamination could be transported toward the water resource.

Table 7. Risk Assessment Decision Table

SWAP Risk Assessment Matrix



Instructions: Use this matrix like a graph. Identify the "Impact to Water System" on the X axis, then identify the "Probability of Impact" on the Y axis. The risk is determined by the intersection of these two lines.

Probability of Impact: The following descriptions provide a framework to estimate the relative probability that damage or loss would occur within one to ten years.	
Certain:	>95% probability of impact
Likely:	>70% to <95% probability of impact
Possible:	>30% to <70% probability of impact
Unlikely:	>5% to <30% probability of impact
Rare:	<5% probability of impact

Impact to Water System: The following descriptions provide a framework to estimate the impact to the public water system.	
Catastrophic:	Irreversible damage to the water source(s). This could include the need for new treatment technologies and/or the replacement of existing water source(s).
Major:	Substantial damage to the water source(s). This could include a loss of use for an extended period of time and/or the need for new treatment technologies.
Significant:	Moderate damage to the water source(s). This could include a loss of use for an extended period of time and/or the need for increased monitoring and/or maintenance activities.
Minor:	Minor damage resulting in minimal, recoverable, or localized efforts. This could include temporarily shutting off an intake or well and/or the issuance of a boil order.
Insignificant:	Damage that may be too small or unimportant to be worth consideration, but may need to be observed for worsening conditions. This could include the development of administrative procedures to maintain awareness of changing conditions.

After determining the risk a source of contamination poses to the water system, it is important to determine whether the water system can *control* the source by any means or *control* the contamination from the source by any means. The level of water system *control* describes the ability of the water system to take measures to prevent contamination or minimize impact. A potential contaminant source that falls within a water system's jurisdiction (i.e. direct control), may be of higher priority since they can take direct measures to prevent contamination or minimize the impact.

- ✚ **Direct Control** – The water system can take direct measures to prevent.
- ✚ **Indirect Control** – The water system cannot directly control the issue, but can work with another person or entity to take measures to prevent.
- ✚ **No Control** – The PSOC or issue of concern is outside the control of the public water system and other entities.

Several different resources were used to compile a list of all possible PSOCs within BDD's SWPA. The Source Water Protection Atlas is a database maintained by the NMED DWB (2017) containing information on sites that are registered with the state, such as wastewater discharge permits and fuel storage tanks. Because information included in the Source Water Protection Atlas is not inclusive of all potential sources of contamination, the assessment also included the EPA interactive map (U.S. EPA, 2017a), geologic reports, previous reports provided by BDD, the City of Santa Fe, and Santa Fe County, and input from the Source Water Protection Team and the public.

PSOCs can be either human-caused or naturally occurring. Both types of PSOC are found within BDD's SWPA, as discussed in the following subsections and shown on Figure 7.

7.2 Human Sources of Contamination

The human-caused PSOCs that can be mapped and are known to occur in BDD's SWPA and the types of those PSOCs are listed in Table 8. NMED has compiled an extensive database of human sources of contamination and that database was used to generate the PSOCs on Figure 7 and Figure 8. GIS data for septic tanks (map code RSF) were not included in any of the state's databases. Because no sewer service is available in the area, RSF sites were added for each building using aerial imagery from the U.S. Department of Agriculture (USDA) National Agriculture Imagery Program (NAIP) (dated 2014).

Table 8. Human-Caused Potential Sources of Contamination

Map Code	Land Use	Description	Contaminants of Concern
ADC	Drainage canals, ditches or acequias (unlined)	Runoff and infiltration	Pesticides, herbicides, fertilizers, nitrate, pathogens
Arroyo	Ephemeral stream	Runoff and infiltration	Pesticides, herbicides, fertilizers, nitrate, pathogens
CFA	Fuel storage tanks - above ground	Non-service station tanks	Gasoline, diesel fuel, organic/inorganic chemicals
CFB	Fuel storage tanks - below ground	Non-service station tanks	Gasoline, diesel fuel, organic/inorganic chemicals
CHG	Historic gasoline service station	Above/below ground storage tanks/operations	Gasoline, oils, solvents, automotive wastes, septage
CSS	Gasoline service station	Above/below ground storage tanks/operations	Gasoline, oils, solvents, automotive wastes, septage
ICC	Cement/concrete plant	Operations/maintenance/storage	Organic/inorganic chemicals, oils, natural gas, propane
MPW	Polluted Surface Water Sources	Naturally occurring/anthropogenic	Sewage, pathogens, nitrate, metals, acids, bases, organic/inorganic chemicals
MRP	Primary road, highway, or arterial	Public street, thoroughfare, highway, or main road	Gasoline, diesel fuels, metals, stormwater runoff, hazardous materials, radiological materials
NPDES permit	National Pollutant Discharge Elimination System (NPDES) permit	Discharge from a point source into waters of the United States	Sewage, sewage sludge, metals, pathogens, organic/inorganic chemicals
PDW	Private domestic well	Private domestic well that is registered with the OSE	Conduit for any contaminant to enter aquifer
RSF	Residential septic system	Wastewater discharge to septic tank, leach field, or cesspool	Septage, pathogens, nitrate, ammonia, chloride, heavy metals, household pesticides, herbicides, cleaning agents and solvents, fuels

Note: The human-caused PSOCs listed in this table include only those that can be mapped. See the following subsections for discussion of others known to exist for the BDD system.

7.2.1 Los Alamos National Laboratory (LANL)

The Los Alamos and Pueblo canyons (LAP canyons) are located on the Pajarito Plateau where for decades Los Alamos National Laboratory had discharged contaminated waste and wastewater as part of the “Manhattan Project” and later LANL’s nuclear weapons program. The confluence of these canyons with the Rio Grande is located nearby Otowi Bridge, 3.5 miles upstream from BDD. The LAP canyons are ephemeral streams and when they flow, their run off may carry

contaminants from the canyons and discharge them into the Rio Grande near Otowi Bridge and transport them downstream to BDD.

ASTDR (2006).

(Page 3) Site Description and Operational History

LANL covers approximately 28,000 acres in north central New Mexico. Most of the laboratory lies within Los Alamos County; a smaller portion is in Santa Fe County. Albuquerque is approximately 60 miles to the southwest and Santa Fe is approximately 25 miles to the southeast. The Bandelier National Monument borders LANL's southwestern boundary. Los Alamos is adjacent to LANL's northern boundary and White Rock is adjacent to the southeastern boundary. The San Ildefonso Pueblo is to the east; national forest lands border the northwestern, the northern, and the southeastern LANL boundaries (Figure 1). Large parts of these areas remain undeveloped (LANL 1999).

(Page 5) Environmental Setting

The Jemez Mountains to the west and the Sangre de Cristo Mountains to the east dominate the vast, naturally beautiful landscape in which LANL is situated. The Rio Grande flows north to south, dividing the mountain ranges and, over geological time, contributing to the creation of the Pajarito Plateau, a volcanic shelf on the eastern slope of the Jemez Mountains on which LANL is situated. The plateau comprises finger-like mesas separated by steeply sloped canyons. Cut by intermittent streams, the canyons are oriented east-to-west, at right angles to the Rio Grande. The mesa elevations range from 7,800 feet (ft) at the base of the Jemez Mountains to 6,200 ft at their eastern end, where they rise above the Rio Grande Valley (LANL 1999).

Of all canyons on the Pajarito Plateau, Los Alamos Canyon and its tributaries (DP Canyon, Pueblo Canyon, Pueblo's tributary Acid Canyon, Bayo Canyon, and Guaje Canyon) drain into the Rio Grande River near the Otowi Bridge, approximately 3.5 miles upstream of the BDD Intake structure. The rest of the Pajarito Plateau canyons drain downstream from BDD.

Wastes discharged in Los Alamos watershed are listed in Reneau (1998):

TA-45 was the site of the first radioactive liquid waste treatment plant at the Laboratory, and radioactive effluent was discharged from TA-45 into Acid Canyon, a small tributary of Pueblo Canyon, between 1944 and 1964 (LANL 1981, 6059; LANL 1992, 7668). This effluent was untreated before 1951, when the first treatment plant became operational, and the highest concentrations of radionuclides were probably discharged before this time. TA-45 was the source for most of the plutonium-239, 240 within

the Los Alamos Canyon watershed and was also the source for other radionuclides present at much lower concentrations, including americium-241, cesium-137, plutonium-238, strontium-90, and tritium.

TA-21 was established in 1945 on DP Mesa and was the site of a plutonium processing plant and radionuclide research laboratories (LANL 1991, 7528). Treated radioactive liquid waste was discharged at the 21-011(k) outfall into DP Canyon, a small tributary of upper Los Alamos Canyon, between 1956 and 1985. The 21-011(k) outfall was the source for most of the americium-241, cesium-137, and strontium-90 within the Los Alamos Canyon watershed and was also the source for other radionuclides at much lower concentrations, including plutonium-238; plutonium-239,240; tritium; and several isotopes of uranium and thorium. Discharges of cesium-137 and strontium-90 from the 21-011(k) outfall were apparently highest before 1968, and discharges of americium-241 were apparently highest after 1978.

According to ASTDR (2006):

(Page ix) Past activities have released radioactive and chemical wastes to the soil, air, and water surrounding the LANL. Historically, laboratory personnel discharged liquid wastes into canyons, buried solid wastes in the ground, and released air emissions into the atmosphere. On occasion, accidental spills also occurred.

(Page 18) **Waste Received**

In addition to the natural run-off produced by precipitation and springs, surface water flow in the canyons is augmented by effluent from LANL activities. Since LANL's opening in the 1940s the canyons adjacent to LANL have received treated and untreated radioactive and sanitary waste. Acid, Pueblo, and Los Alamos Canyons were the primary recipients of untreated radioactive liquid waste.

(Page 20 and 21) The highest levels of radioactivity for surface water were found in Los Alamos Canyon (total uranium and gross alpha). For sediment, the highest levels were typically detected in Los Alamos Canyon (americium-241, cesium-137, strontium-90, and total uranium). Acid Pueblo Canyon had the highest level of plutonium-239/240. The highest values of water quality parameters and inorganics (in surface water and sediment) were distributed primarily throughout Los Alamos and Acid Pueblo Canyon. Overall, strontium-90, chloride, fluoride, sodium, and arsenic were detected above CVs [comparison values] with the greatest frequency. Acid Pueblo Canyon had the only detections of organics in surface water and Los Alamos Canyon had the only detections of organics in sediment. Specific contaminants found in each area is discussed below and summarized in Tables 7 to 10.

Acid Pueblo Canyon

From this canyon, gross alpha radiation was the only radiological test result detected above its CV in surface water. At least twice in the sediment cesium-137, plutonium-239/240, and strontium-90 were all detected above their CVs. Strontium-90 (to 5 pCi/g) was the only 20 Los Alamos National Laboratory Public Health Assessment radionuclide to exceed its CV by more than a factor of 10. Two organics, five water quality parameters, and eight inorganics were also detected above CVs in the surface water. Chloride (to 300 ppm) and arsenic (to 0.019 ppm) were the only two to exceed their CV by more than a factor of 10. Fluoride, nitrate, sodium, and boron were detected above their CVs with the greatest frequency (more than three times). Three inorganics were also detected above CVs in the sediment, but only arsenic was detected more than once. None of the inorganics detected in the sediment exceeded their CV by more than a factor of seven.

Los Alamos Canyon

In the surface water, both total uranium (to 576 pCi/L) and gross alpha (to 520 pCi/L) were detected above their CVs. Three water quality parameters and seven inorganics were also measured above CVs. The maximum detected concentration of all four water quality parameters exceeded CVs by at least 30 times. Arsenic (to 0.017 ppm) was the only inorganic with the maximum detected concentrations greater than 10 times its CV. In sediment, americium-241, cesium-137, plutonium-239/240, and strontium-90 were detected above CVs. Arsenic, benz(a)anthracene, and benzo(a)pyrene were also found above CVs.

The LANL legacy contaminants of highest concern are the following radionuclides: plutonium-239/240, plutonium-238, americium-241, strontium-90, cesium-137, and uranium isotopes since those contaminants have been identified as contaminants in the Los Alamos Canyon watershed in multiple studies by different agencies (federal and state). All of these contaminants are transported predominantly via suspended sediments. This characteristic makes these contaminants likely to be transported downstream to the BDD during storm events when a lot of sediments are agitated and mobilized. The BDD treatment processes are focused on removal of solids from the raw water, and therefore, many contaminants with affinity to solid particles would be managed by the BDD treatment system.

As described in BDD (2016), contamination from LANL reaches BDD as follows:

Periodic floods during the 1950s and 1960s of the Los Alamos/Pueblo Canyons watershed transported the discharged contaminants downstream from the source of release and ultimately to

the Rio Grande, and hence to the BDD Intake location. This fact was researched and documented in the works of (Graf, 1994), (Graf, 1996), and (Englert, Dale, Granzow, & Mayer, 2007). By the 1970s the flood frequencies and magnitudes diminished and transported contaminants were stored in sediments in and along the dry stream channels and floodplains of the canyons that run through the Laboratory. Since then and until the Cerro Grande Fire, the frequency of flooding from canyons at LANL diminished and clean sediments along the Rio Grande have covered contaminants that have reached the river.

According to NMED/DOE Oversight Bureau, since the Cerro Grande fire in 2000, canyon floods have increased in intensity and frequency and are eroding the emplaced sediments, exposing and carrying legacy contaminants to the Rio Grande at rates not seen since the discharges of the wastes in the 1950s and 1960s (NMED/DOE/OB, 2012).

LANL has taken some remedial actions in Los Alamos and Pueblo Canyons since the Cerro Grande fire pursuant to the requirements of NMED Order on Consent (2005 and 2016). These actions include installation of sediment retention structures, enhancement of riparian conditions that stabilize sediments, and enhancement and management of a large wetland in Pueblo Canyon that minimizes sediment and contaminant transport. LANL reports that the post-fire (Cerro Grande in 2000, and later, Las Conchas in 2011) watershed hydrology has recovered, partly because of the remedial actions described above.

BDD Board and DOE/LANL

In 2010, prior to coming online, BDD entered into a Memorandum of Understanding (MOU), a legally non-binding agreement, with DOE/LANL to monitor and sample surface water from Los Alamos and Pueblo Canyons in order to determine the storm water quality at the BDD (BDD and DOE, 2015). Under this agreement, which was renewed in 2015 and 2017, the following programs have been maintained:

- ✦ Early notification system (ENS), a preventive program with the following objectives:

Two or three gaging stations relay real-time stage height data in 5-minute intervals to the BDD Control Room through SCADA, and another video station relays images only. The participating LANL stations are described in the 2017 renewed MOU (Figure 7): (1) LANL gaging station E050.1 in Los Alamos Canyon above the Pueblo Canyon confluence, (2) LANL gaging station

E060 in Pueblo Canyon above the Los Alamos confluence, (3) video station E062 in the Los Alamos Canyon below the confluence of Los Alamos and Pueblo Canyons, and (4) LANL gaging station E099 (not depicted on Figure 5), the farthest downstream from LANL gaging station within the ENS, located in Guaje Canyon above the confluence of Guaje Canyon and Los Alamos Canyon. The previously participating gaging station E109.9 (shown on Figure 7) was located in the lower Los Alamos Canyon, 0.7 miles from the Rio Grande. That station was buried by sediment carried by strong storm flow in September 2013.

When storm flows exceed 5 cubic feet per second (cfs) at the LANL gages, BDD is notified. The trigger flow of 5 cfs was selected by LANL (under the Los Alamos/Pueblo Canyons Stormwater Monitoring Plans) as a flow with the potential to reach the Rio Grande: "Samples at E050, E060, and E110 will be triggered by 5-cfs flows to ensure sampling at flows that may extend to the Rio Grande." Page 3 of LANL (2009). When such storm flows are streaming in Los Alamos Canyon, the diversion will close for 10 to 12 hours or until the storm has subsided.

✚ Surface water sampling program of stormwater and baseflow of the Rio Grande at BDD.

When storm run offs of 5 cfs or greater flow in the Los Alamos and Guaje Canyons as measured by the LANL gages, water quality sampling will be triggered at BDD. Costs for sampling, equipment, and maintenance are shared between the BDD Board and DOE/LANL.

Samples collected from this program are tested for the following constituents: suspended sediment concentration, total and dissolved metals (23) plus mercury, gross alpha, gross beta, strontium-90, americium-241, radionuclides by gamma spectroscopy (including cesium-137), plutonium (isotopic), uranium (isotopic), neptunium-237, dioxin/furans, PCBs, radium-226 and -228, and perchlorate.

Pursuant to the 2017 MOU, DOE funds costs up to a certain dollar amount for BDD sampling at the intake, after which BDD funds the costs.

✚ The Contaminant Fate Analysis (CFA) Program and The Removal Efficiency and Assessment of Treatments (TREAT) Study.

The CFA program was initiated in 2010 to determine the effectiveness of the BDD treatment technologies at treating contaminants diverted from the Rio Grande.

In 2015, the CFA Program was replaced with a similar but updated and improved program called the TREAT Study (BDD and DOE, 2015) with the similar objectives as the CFA program. TREAT Study is entirely funded by the BDD Board.

City of Santa Fe and DOE/LANL

Sampling for contaminants at the Buckman wells (City of Santa Fe) shows that contamination from LANL waste disposal activities has not affected groundwater in the Buckman area. While ChemRisk (2010) found that “[t]here are no contributions from LANL groundwater to the Buckman well field,” in an abundance of caution, LANL has conducted sampling since 2001 at Buckman wells 1, 6, and 8 and piezometers SF-4A and SF-3A, providing the data to the City for identification of possible groundwater contamination from past activity at LANL. From the 2015 CCR (Appendix B) regarding possible LANL groundwater contamination:

In cooperation with Los Alamos National Laboratory (LANL) and the New Mexico Environment Department, the City currently monitors Buckman Wells 1, 6 and 8 for LANL derived contamination on a quarterly basis. Samples are analyzed for radionuclides, general inorganic chemicals, metals, high explosives and organics. This repeat sampling has occurred during the years 2001 – 2015 and has indicated that Laboratory-derived radionuclides are not present in the Buckman Wells 1, 2, 6 and 8. The results do indicate detectable levels of radionuclides associated with natural sources. These wells are part of the 13 wells that make-up the Buckman Wellfield. When these wells are used, water from these wells is delivered to the [10 Million Gallon] prior to distribution into the system.

7.2.2 National Pollutant Discharge Elimination System (NPDES) Permits

Wastewater treatment plants (WWTPs), stormwater and industrial discharges must obtain a NPDES permit in order to discharge effluent water into a stream. The EPA, who administers NPDES program, describes the permits as follows (U.S. EPA, 2016):

As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) Permit Program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. Since its introduction in 1972, the NPDES permit program is responsible for significant improvements to our Nation's water quality.

Figure 8 shows WWTPs upstream of BDD. Table 9 lists the holders of NPDES permits within 15 miles of the BDD intake

Table 9. NPDES Permits within 15 miles Upstream of BDD Intake

NPDES Permit Holder	Distance Upstream of BDD Intake (miles)
Towa Resort (WWTP)	14.3
Pojoaque (WWTP)	12.6
Pojoaque Terraces Mobile Home Park (WWTP)	12.0
Los Alamos Co. – Bayo Canyon (WWTP)	9
Los Alamos National Laboratory (stormwater, industrial)	3 (stormwater)/ 9 (industrial)
Española (WWTP)	13.2

In addition to those listed in Table 9, the two next closest WWTPs are the Abiquiu MDWCA & MSWA and the Town of Taos. Abiquiu's plant is approximately 41 miles upstream of the BDD intake via the Rio Grande and Rio Chama. Taos's WWTP is approximately 57 miles upstream of the BDD intake via the Rio Grande and the Rio Pueblo.

Wastewater, stormwater or other industrial effluent discharged into U. S. waters must meet state and federal effluent water quality standards (U.S. EPA, 2016):

An NPDES permit will generally specify an acceptable level of a pollutant or pollutant parameter in a discharge (for example, a certain level of bacteria). The permittee may choose which technologies to use to achieve that level. Some permits, however, do contain certain generic 'best management practices' (such as installing a screen over the pipe to keep debris out of the waterway). NPDES permits make sure that a state's mandatory standards for clean water and the federal minimums are being met.

However, levels of pharmaceuticals and personal care products (PPCPs) and other emerging contaminants in effluent are currently not monitored. PPCPs are not subject to regulatory limits and removal of the traces of those products requires advanced treatment. Given the relative volume of flows in the Rio Grande, it is expected that adequate dilution of these contaminants occurs before the water reaches the BDD intake.

7.2.3 Groundwater Discharge Permits

Active, ceased, pending, inactive, terminated, and withdrawn groundwater discharge permits are shown on Figure 8. Groundwater discharge permits are managed by NMED. The NMED Groundwater Pollution Prevention Section describes groundwater discharge permits as follows (NMED GWQB, 2017):

The Ground Water Pollution Prevention Section (GWPPS) reviews and approves ground water Discharge Permits for discharges that have the potential to impact ground water quality pursuant to Subparts III and V of the Water Quality Control Commission (WQCC) regulations (20.6.2 NMAC). Ground water Discharge Permits address a wide variety of discharges including:

- Domestic wastewater facilities
- Large capacity septic tank leachfields
- Reclaimed wastewater reuse
- Power generating plants
- Commercial laundries (when not served by sanitary sewers)
- Commercial land farms for treatment of contaminated soil
- Industrial discharges
- Groundwater remediation systems

- Groundwater Discharge Permits for dairies and non-dairy agricultural facilities, such as cheese plants and chile processors, are managed by the Agriculture Compliance Section.

This program also addresses unauthorized discharges, such as spills, for facilities that it regulates. Section 20.6.2.1203 of the NMAC provides a description of how to proceed with notifying the Pollution Prevention Program (GWPPS) in case of a spill.

Permits are issued for 5-year terms and must be renewed to provide continuous coverage. The GWPPS currently manages approximately 1,000 active permits.

7.2.4 Septic Systems

Septic systems are typically installed 3 to 5 feet below the ground surface. Such system may become a PSOC when a septic system's leach field is not operating properly and the effluent from the septic tank may runoff into nearby waterways. DBS&A mapping efforts estimate that there are nearly 200 septic systems in BDD's SWPA.

7.2.5 Security

To deter tampering and damage at BDD-owned facilities, BDD contracts Chavez Security Inc. (CSI), a security company, to monitor on a regular basis the Diversion intake, lift station, and booster pump stations.

7.3 Natural Sources of Contamination

Arroyos, drainage canals, ditches, and acequias are known natural features that can convey natural or anthropogenic contaminants into the Rio Grande. These features can be mapped in the SWPA for BDD. Wildfires and turbidity are two other natural sources of contamination that are not easily mapped.

7.3.1 Wildfires

Wildfire is a natural PSOC that represents a very real and significant threat to BDD's water source. Wildfires affect the type and quantity of nutrients (especially nitrogen) in the river, as well as the

turbidity and total suspended solids (TSS) entering surface water sources. Wildfires can also impact the rate of runoff and sedimentation into surface water sources. In 2013, the Water Research Foundation published *Effects of Wildfire on Drinking Water Utilities and Best Practices for Wildfire Risk Reduction and Mitigation* (Sham et al., 2013), which discusses in detail the potential damage wildfires can cause for utilities.

Since the 1970s, there have been four stand-replacing fires in the Jemez Mountains: the La Mesa fire (1977), the Dome fire (1996), the Cerro Grande fire (2000), and the Las Conchas fire (2011) (BDD, 2016). The La Mesa and Dome fires affected watersheds downstream of the BDD. The BDD was not yet built in 2000 during the Cerro Grande fire. The Las Conchas fire, the largest wildfire in northern New Mexico history, burned 163,000 acres. The fire drastically changed the Los Alamos and Pueblo Canyon watersheds, and the distribution of contaminated sediments in that area, and is cited as the cause for increased quantities of LANL contaminants in stormwater at the BDD intake during the fire and some years afterwards.

7.3.2 Turbidity

Storm events in the upper Rio Grande watershed lead to increased turbidity at the BDD intake. Because the high sediment content in the raw water can cause serious damage to the BDD equipment, diversions are stopped during periods of high turbidity. There is not a pre-determined turbidity threshold at which diversions are ceased; rather, the Operations Superintendent monitors river turbidity daily to balance the need to supply water to customers with the need to protect equipment life. In the past, high sediment loads have led to shutoff periods ranging from one hour to three months.

7.4 Risk Assessment

To assess potential contamination risks from the known PSOCs to a water system, a “probability of impact” ranking is assigned to each water source. A “probability of impact” ranking of rare, unlikely, possible, likely, certain is assigned based on professional opinion from the available infrastructure, geology, and PSOC information. These rankings are meant to serve only as a method to identify and prioritize risks to a system’s water sources for planning purposes.

The “impact to water system” ranking is based on an inventory of the type, number, and proximity of PSOCs near a water source, and is a subjective ranking based on that inventory. An “impact to water system” ranking of insignificant, minor, significant, major, catastrophic is assigned to each PSOC.

The first consideration in “impact to water system” ranking is the types of PSOC present. The mapping effort for Los Alamos Canyon revealed eight PSOC types in this river segment: aboveground storage tank facility (CFA), arroyos, gasoline service station (CSS), a leaking underground storage tank (CFB), polluted surface water sources (MPW), major roads (MRP), private domestic wells (PDW), and septic systems (RSF). Furthermore, while they cannot be mapped, LANL legacy contaminants are known to exist in this canyon. Polluted surface water sources (MPW) and arroyos and private domestic wells (PDW) were the two identified PSOC types in Guaje Canyon. Although not identified on the map when Guaje Canyon flows, it picks up LANL-contaminated sediments in lower Los Alamos Canyon and carries them to the Rio Grande. There are eight mapped PSOC types in the SWPA for the Rio Grande: canals, drainage ways and acequias (ADC), historic gasoline service stations (CHG), cement/concrete plants (ICC), arroyos, major roads (MRP), NPDES permits, private domestic wells (PDW), and septic systems (RSF). Sedimentation (turbidity) is a significant PSOC caused by storm events for all three river segments. Wildfires are a major PSOC for all three river segments as well.

The number of PSOC occurrences is another consideration in determining the “impact to water system” ranking of a water source. Table 11 shows the PSOC count by river segment. Guaje Canyon has 15 mapped PSOC occurrences, while Los Alamos Canyon has 53 and the Rio Grande has 291.

Table 10 lists the PSOCs occurrence by river segment and mile for BDD’s SWPA and shows each PSOC rankings, including the level of control.

Table 10. PSOC Inventory and Risk Rankings for the BDD SWPA

River Mile	Zone	PSOC Code	PSOC Description	Number of Occurrences	A ¹ or P	Probability of Impact	Impact to PWS	Risk	Control ²
Rio Grande River									
500ft-0	B	Arroyo	Ephemeral stream	1	A	Unlikely	Insignificant	Very Low	NC
	C	Arroyo	Ephemeral stream	2	A	Unlikely	Insignificant	Very Low	NC
0-1	A	Arroyo	Ephemeral stream	3	A	Possible	Insignificant	Low	NC
		NPDES permit	Buckman Direct Diversion Project	1	A	Unlikely	Insignificant	Very Low	D
		PDW	Private domestic well	3	P	Unlikely	Insignificant	Very Low	ID
	B	PDW	Private domestic well	2	P	Unlikely	Insignificant	Very Low	ID
	C	PDW	Private domestic well	3	P	Unlikely	Insignificant	Very Low	ID
1-2	A	Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
2-3	None	—	—	—	—	—	—	—	—
3-4	A	Arroyo	Ephemeral stream – Los Alamos Canyon confluence	3	A	Likely	Significant	High	NC
		MRP	Primary road, highway, or arterial	1	P	Unlikely	Minor	Low	NC
		NPDES permit	U.S. DOE LANL - Stormwater	1	A	Likely	Significant	High	NC
	B	PDW	Private domestic well	1	P	Unlikely	Insignificant	Very Low	ID
	C	PDW	Private domestic well	21	P	Unlikely	Insignificant	Very Low	ID
		RSF	Septic system	9	P	Unlikely	Insignificant	Very Low	ID
4-5	C	PDW	Private domestic well	1	P	Unlikely	Insignificant	Very Low	ID

¹ "A" for active and "P" for potential

² "D" for direct control, "ID" for indirect control, and "NC" for no control

River Mile	Zone	PSOC Code	PSOC Description	Number of Occurrences	A ¹ or P	Probability of Impact	Impact to PWS	Risk	Control ²
5-6		RSF	Septic system	4	P	Unlikely	Insignificant	Very Low	ID
	A	Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
	B	PDW	Private domestic well	1	P	Rare	Insignificant	Very Low	ID
	C	ADC	Drainage canals, ditches, or acequias - unlined	1	A	Possible	Insignificant	Low	NC
		PDW	Private domestic well	12	P	Rare	Insignificant	Very Low	ID
		RSF	Septic system	60	P	Rare	Insignificant	Very Low	ID
6-7	A	Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
	B	Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
		PDW	Private domestic well	2	P	Rare	Insignificant	Very Low	ID
		RSF	Septic system	1	P	Rare	Insignificant	Very Low	ID
		ADC	Drainage canals, ditches, or acequias - unlined	1	A	Possible	Insignificant	Low	NC
		Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
		PDW	Private domestic well	10	P	Rare	Insignificant	Very Low	ID
		RSF	Septic system	38	P	Rare	Insignificant	Very Low	ID
		ADC	Drainage canals, ditches, or acequias - unlined	1	A	Possible	Insignificant	Low	NC
7-8	A	ADC	Drainage canals, ditches, or acequias - unlined	1	A	Possible	Insignificant	Low	NC
		Arroyo	Ephemeral stream	3	A	Possible	Insignificant	Low	NC
		RSF	Septic system	1	P	Rare	Insignificant	Very Low	ID
	B	RSF	Septic system	1	P	Rare	Insignificant	Very Low	ID
	C	Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
		PDW	Private domestic well	1	P	Rare	Insignificant	Very Low	ID
		RSF	Septic system	6	P	Rare	Insignificant	Very Low	ID
		Arroyo	Ephemeral stream	3	A	Possible	Insignificant	Low	NC

River Mile	Zone	PSOC Code	PSOC Description	Number of Occurrences	A ¹ or P	Probability of Impact	Impact to PWS	Risk	Control ²
	C	ADC	Drainage canals, ditches, or acequias - unlined	1	A	Possible	Insignificant	Low	NC
		PDW	Private domestic well	2	P	Rare	Insignificant	Very Low	ID
		RSF	Septic system	20	P	Rare	Insignificant	Very Low	ID
9-10	B	PDW	Private domestic well	1	P	Rare	Insignificant	Very Low	ID
		RSF	Septic system	1	P	Rare	Insignificant	Very Low	ID
	C	Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
		PDW	Private domestic well	9	P	Rare	Insignificant	Very Low	ID
		RSF	Septic system	50	P	Rare	Insignificant	Very Low	ID
	A	ICC	Cement/concrete plant	1	P	Rare	Insignificant	Very Low	ID
10+	C	CHG	Leaky underground storage tank site - Kokoman Discount Liquors	1	A	Rare	Insignificant	Very Low	ID
Los Alamos Canyon									
3-4	B	PDW	Private domestic well	1	P	Rare	Insignificant	Very Low	ID
	C	PDW	Private domestic well	21	P	Rare	Insignificant	Very Low	ID
		MRP	Primary road, highway, or arterial	1	A	Unlikely	Insignificant	Very Low	NC
4-5	A	Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
		MRP	Primary road, highway, or arterial	1	A	Unlikely	Insignificant	Very Low	NC
5-6	A	Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
		CSS/CF B	Underground storage tank facility - Totavi Phillips 66	1	P	Unlikely	Insignificant	Very Low	ID
		RSF	Septic system	1	P	Rare	Insignificant	Very Low	ID
	B	MRP	Primary road, highway, or arterial	1	A	Unlikely	Insignificant	Very Low	NC

River Mile	Zone	PSOC Code	PSOC Description	Number of Occurrences	A ¹ or P	Probability of Impact	Impact to PWS	Risk	Control ²
6-7	A	MRP	Primary road, highway, or arterial	1	A	Unlikely	Insignificant	Very Low	NC
7-8	A	Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
		MRP	Primary road, highway, or arterial	1	A	Unlikely	Insignificant	Very Low	NC
	B	Arroyo	Ephemeral stream	2	A	Possible	Insignificant	Low	NC
8-9	A	MRP	Primary road, highway, or arterial	2	A	Unlikely	Insignificant	Very Low	NC
	C	Arroyo	Ephemeral stream	2	A	Possible	Insignificant	Low	NC
		CFA	NMIDOT Los Alamos Patrol Yard Seasonal	1	P	Unlikely	Insignificant	Very Low	ID
		CFB	NMIDOT Los Alamos Patrol Yard Seasonal	1	P	Rare	Insignificant	Very Low	ID
		MPW	Polluted surface water source (Impaired Stream for aluminum, gross alpha and PCBs: Los Alamos Canyon, Pueblo Canyon)	2	A	Possible	Significant	Moderate	NC
		PDW	Private domestic well	4	P	Rare	Insignificant	Very Low	ID
		RSF	Septic system	1	P	Rare	Insignificant	Very Low	ID
9-10	C	Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
		MRP	Primary road, highway, or arterial	2	A	Unlikely	Insignificant	Very Low	NC
Guaje Canyon									
5-6	A	PDW	Private domestic well	1	P	Rare	Insignificant	Very Low	ID
6-7	A	Arroyo	Ephemeral stream	2	A	Possible	Insignificant	Low	NC
		MPW	Polluted surface water source (Impaired Stream for Aluminum: Guaje Canyon)	1	A	Possible	Significant	Moderate	NC
		PDW	Private domestic well	1	P	Rare	Insignificant	Very Low	ID

River Mile	Zone	PSOC Code	PSOC Description	Number of Occurrences	A ¹ or P	Probability of Impact	Impact to PWS	Risk	Control ²
	C	Arroyo	Ephemeral stream	1	A	Possible	Insignificant	Low	NC
7-8	B	PDW	Private domestic well	1	P	Rare	Insignificant	Very Low	ID
	C	Arroyo	Ephemeral stream	3	A	Possible	Insignificant	Low	NC
8-9	A	Arroyo	Ephemeral stream	2	A	Possible	Insignificant	Low	NC
9-10	A	Arroyo	Ephemeral stream	3	A	Possible	Insignificant	Low	NC

Table 11. PSOC Occurrence by River Segment

PSOC* Type	Count	Percent
<i>Rio Grande River</i>		
ADC	4	1.4
Arroyo	22	7.6
CHG	1	0.3
ICC	1	0.3
MRP	1	0.3
NPDES permit	2	0.7
PDW	69	23.7
RSF	191	65.6
Rio Grande River total	291	
<i>Los Alamos Canyon</i>		
Arroyo	8	15
CFA	1	2
CFB	1	2
CSS/CFB	1	2
MPW	2	4
MRP	9	17
NPDES Permit	3	6
PDW	26	49
RSF	2	4
Los Alamos Canyon total	53	
<i>Guaje Canyon</i>		
Arroyo	11	73.3
MPW	1	6.7
PDW	3	20.0
Guaje Canyon total	15	

*See Table 8 for PSOC code descriptions

8. MANAGING FOR SOURCE WATER PROTECTION

The purpose of NMED's Source Water Protection Program is to protect drinking water sources before they become contaminated. The most significant PSOCs for the BDD are LANL legacy contaminants, NPDES discharges, sediment transport, and wildfires.

Wildfires affect the type and quantity of nutrients (especially nitrogen) in the river, as well as the turbidity and TSS entering surface water sources. Wildfires can also impact the rate of runoff and sedimentation into surface water sources.

Storm events in the upper Rio Grande watershed lead to increased turbidity at the BDD intake. Because the high sediment content in the raw water can cause serious damage to the BDD equipment, diversions are stopped during periods of high turbidity. There is not a pre-determined turbidity threshold at which diversions are ceased; rather, the Operations Superintendent monitors river turbidity daily to balance the need to supply water to customers with the need to protect equipment life. In the past, high sediment loads have led to shutoff periods ranging from one hour to three months.

LANL legacy contaminants are transported to the BDD intake mainly via suspended sediments. This characteristic makes these contaminants likely to be transported downstream to the BDD during storm events, but their strong sorption to sediments allows them to be treated by the BDD treatment technologies. The BDD currently conducts extensive monitoring of the source water for legacy contaminants from LANL. This practice is comprehensive, should be continued, and provides significant protection to customers.

NPDES (includes WWTPs) and groundwater discharge permit holders discharge effluent into waterways. These permit holders must meet all state and federal effluent water quality standards. Pharmaceuticals and personal care products, however, are currently not regulated and monitored and can be hard to treat due to their solubility properties. Given the size of the Rio Grande, these contaminants are likely to be strongly diluted before reaching the BDD intake.

8.1 Specific Sources of Contamination

The potential and actual contamination sources with the highest risk (high and moderate) listed in Table 10 are summarized below along with proposed remediation efforts and strategies to mitigate or prevent contamination.

U.S. DOE LANL – Stormwater, NPDES Permit Ephemeral stream – Los Alamos Canyon confluence, Arroyo	
Risk	High
Source Affected	Rio Grande River watershed – affected directly
Contaminants of Concern	Turbidity, radionuclides mostly alpha and beta emitters, gross alpha/beta, metals, organics mostly PCBs (see Section 7.2.1)
Issues	Discharges from Los Alamos canyon during storm events will mobilize and transport any contaminants (legacy and wastewater facilities) settled in the low Los Alamos canyon into the Rio Grande. The legacy contamination has been documented for decades, and the discharges of storm water containing the contaminants has been documented by NMED and BDD over the last 20 years.
Concerns	Stormwater from Los Alamos watershed will discharge into the Rio Grande and will contaminate the raw water which is the source of raw water for BDD intake at the river. Neither BDD nor any other entity has any control over the frequency or strength of the storm events in nature.
Strategies	

Polluted surface water source (Impaired Stream for aluminum, gross alpha and PCBs: Los Alamos Canyon, Pueblo Canyon)	
Risk	Moderate
Source Affected	Los Alamos watershed (Los Alamos and Guaje canyons) – affected directly Rio Grande River watershed – affected indirectly
Contaminants of Concern	Turbidity, radionuclides mostly alpha and beta emitters, gross alpha/beta, metals, organics mostly PCBs (see Section 7.2.1)
Issues	Contaminated sediments will be settled into the canyon beds and may be mobilize by stormwater to reach the Rio Grande. Not all stormwater may reach the Rio Grande.

Polluted surface water source (Impaired Stream for aluminum, gross alpha and PCBs: Los Alamos Canyon, Pueblo Canyon)	
	Discharges from Los Alamos canyon during storm events will mobilize and transport any contaminants (legacy and wastewater facilities) settled in the low Los Alamos canyon into the Rio Grande.
Concerns	Stormwater from Los Alamos watershed may discharge into the Rio Grande and may contaminate the raw water which is the source of raw water for BDD intake at the river. Neither BDD nor any other entity has any control over the frequency or strength of the storm events in nature.
Strategies	

8.2 General Action Items

Based on NMED guidelines and the conclusions from this evaluation, BDD would adapt the following general management practices as part of its Source Water Protection Program:

- ✚ The Source Water Protection Team would meet annually to review the State's Source Water Protection EnviroMap, PSOCs within the delineated SWPAs, and any changes to the system's sources.
- ✚ The Source Water Protection Team should participate as necessary in regulatory meetings and hearings on facilities within the SWPAs.
- ✚ This SWPP and the map of PSOCs will be updated on an annual basis; or as changes occur.
- ✚ As the members of the Source Water Protection Team change over time, the new members would be informed of the plan and its implementation actions.

- ✚ BDD will continue surface water monitoring and sampling efforts related to LANL legacy contaminants.
- ✚ BDD will evaluate on a regular basis the ENS and BDD system of gages in the Los Alamos watershed to determine if any additional gaging stations are needed to provide more accurate information on flows potentially carrying LANL legacy contaminants to the Rio Grande and BDD intake.
- ✚ Given that turbidity levels in the Rio Grande can cause the BDD to cease diverting for significant periods of time, BDD may consider additional sediment removal options and methods for clearing sediment from intake cells.
- ✚ BDD would initiate communication with upstream NPDES, WWTP and groundwater discharge permit holders to discuss notification procedures and emergency plans in case of a major contamination event.
- ✚ The BDD intake is on U.S. Forest Service (USFS) land, and public access cannot be restricted. BDD would continue to contract private security and work with USFS to ensure the protection of the intake structure and pump stations from public tampering and vandalism.
- ✚ A public information program could be developed related to source water protection. This program would educate the public about BDD's water sources, potential threats to those sources, measures that the public can take to protect sources, and means to encourage the public to report PSOCs to the Source Water Protection Team. Options for communicating with the public include meetings, advertisements, flyers, brochures, posters, questionnaires, and community and school events.

9. REFERENCES

- Agency for Toxic Substances and Disease Registry (ATSDR). 2006. *Public Health Assessment for Los Alamos National Laboratory, U.S. Department of Energy, Los Alamos, Los Alamos County, New Mexico, EPA Facility ID NM0890010515*, September 8, 2006.
- Bowman, D.K. 2017. *Personal communication between Daniela K. Bowman, Buckman Direct Diversion Regulatory Compliance Officer, and Jennifer Hill, Daniel B. Stephens & Associates, Inc.* June 28, 2017.
- Brown and Caldwell. 2009. *Water transmission and storage system master plan*. Prepared for the City of Santa Fe, New Mexico. March 2009 (Revision: September 3, 2009).
- Buckman Direct Diversion (BDD). 2016. *Storm water quality monitoring of Rio Grande at Buckman Direct Diversion from 2011 to 2014*. Final revision March 3, 2016.
- BDD. 2017. *Learn more about water quality*. Information provided on website. <<http://bddproject.org/water-quality/learn-more-about-water-quality/>>. Accessed April 2017.
- BDD Board and U.S. Department of Energy (DOE). 2015. *Memorandum of understanding between the U.S. Department of Energy and the Buckman Direct Diversion Board regarding water quality monitoring*. Executed January 2015.
- ChemRisk, LLC. 2010. *Executive summary of results: Buckman Direct Diversion Project independent peer review*. Prepared with AMEC Earth and Environmental. Prepared for Buckman Direct Diversion Project Board. December 3, 2010.
- Daniel B. Stephens & Associates, Inc. (DBS&A). 2017. *[DRAFT] City of Santa Fe water system source water protection plan, Public Water System # 3505126*. Prepared for the City of Santa Fe, New Mexico. July 31, 2017.
- Hook, A. (2021). *Source Water Protection Plan for the City of Santa Fe Water System*. City of Santa Fe, Water Division.

Los Alamos National Laboratory (LANL). 2009. *Monitoring Plan for Los Alamos and Pueblo Canyons Sediment Transport Mitigation Project*, October 2009. LA-UR-09-6563. EP2009-0520.

New Mexico Environment Department (NMED). 2014. *Sanitary survey report for Santa Fe Water System, NM3505126*. October 20, 2014.

NMED Department of Energy Oversight Bureau (DOE OB). 2011. *Los Alamos Canyon Watershed Monitoring from 2003 through 2008: Contaminant Transport Assessment, Los Alamos County, New Mexico, Dave Englert and Ralph Ford-Schmid*, April 2011.

NMED DOE OB. 2012. *Summary of Rio Grande Water Sampling Efforts by NMED, prepared for BDDDB*, October 6, 2012, Santa Fe.

NMED Drinking Water Bureau (DWB). 2013. *New Mexico source water and wellhead protection toolkit*. November 27, 2013.

NMED DWB. 2017. *Source Water Protection Atlas (SWPA) Mapper*. Accessed March 2017. <<https://gis.web.env.nm.gov/SWPA/>>.

NMED Drinking Water Watch (DWW). 2017. *Sampling schedules for Buckman Regional Water Treatment Plant public water system*. <<https://dww.water.net.env.nm.gov/>>. Accessed April 2017.

NMED Ground Water Quality Bureau (GWQB). 2017. *Information on groundwater discharge permits*. <<https://www.env.nm.gov/gwb/NMED-GWQB-PollutionPrevention.htm>>. Accessed July 2017.

New Mexico Interstate Stream Commission and Office of the State Engineer (NM ISC and OSE). 2016. *Jemez y Sangre Regional Water Plan*. November 2016.

Reneau, S. et al. 1998. *Evaluation of Sediment Contamination in Lower Los Alamos Canyon*, LA-UR-98-3975, Los Alamos National Laboratory, 1998.

Santa Fe County. 2015. *2015 Santa Fe County sustainable growth management plan (SGMP)*. Adopted by the Board of County Commissioners by Resolution 2015-155.

Sham, C.H., M.E. Tuccillo, and J. Rooke. 2013. *Effects of wildfire on drinking water utilities and best practices for wildfire reduction and mitigation*. Jointly sponsored by the Water Research Foundation and U.S. Environmental Protection Agency.

Spiegel, Z. and B. Baldwin. 1963. *Geology and water resources of the Santa Fe area, New Mexico*. Prepared by the U.S. Geological Survey, New Mexico Bureau of Mines and Mineral Resources, and Geophysics Laboratory of New Mexico Institute of Mining and Technology, in cooperation with the State Engineer of New Mexico. U.S. Geological Survey Water-Supply Paper 1525.

U.S. Environmental Protection Agency (U.S. EPA). 2016. *National Pollutant Discharge Elimination System (NPDES) permits program*. Last modified March 2, 2016. Accessed July 2017. <<https://www3.epa.gov/region6/water/npdes/index.htm>>.

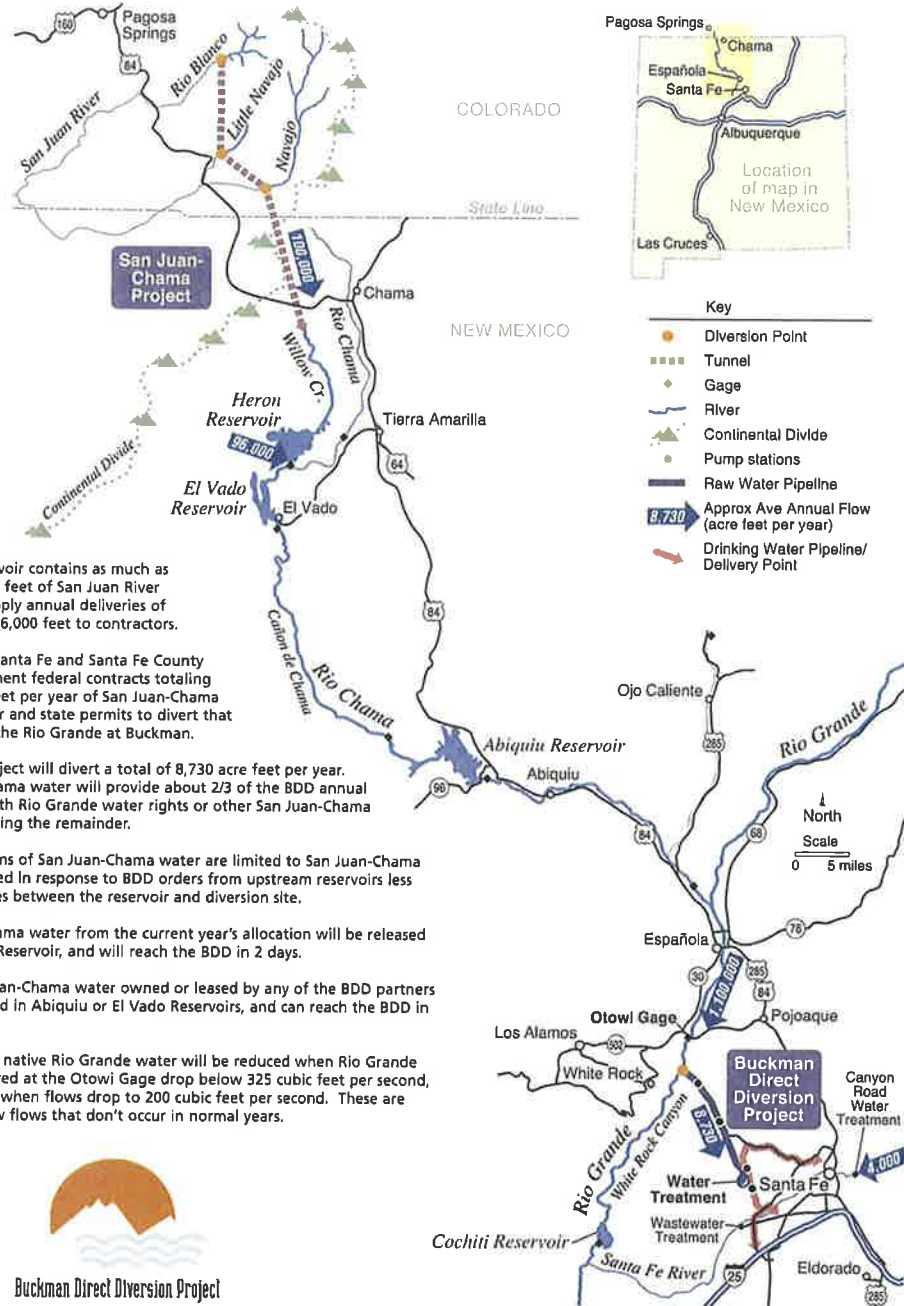
U.S. EPA. 2017a. *EnviroMapper for Envirofacts*. <<http://www.epa.gov/emefdata/em4ef.home>>. Accessed March 2017.

U.S. EPA. 2017b. *Secondary drinking water standards: Guidance for nuisance chemicals*. Accessed April 2017. <<https://www.epa.gov/dwstandardsregulations/secondary-drinking-water-standards-guidance-nuisance-chemicals>>.

Water Matters! 2015. *Nambé, Pojoaque, San Ildefonso, and Tesuque Pueblos Settlement. Chapter 22 in Water Matters!* Available at <http://uttcncenter.unm.edu/pdfs/water-matters-2015/22_Nambe_Pojoaque_San_Ildefonso_and_Tesuque_Pueblos_Settlement.pdf>.

Appendix A
BDD System Information

Buckman Direct Diversion Project and the San Juan-Chama Project



- Heron Reservoir contains as much as 400,000 acre feet of San Juan River water to supply annual deliveries of as much as 96,000 feet to contractors.
- The City of Santa Fe and Santa Fe County have permanent federal contracts totaling 5,605 acre feet per year of San Juan-Chama Project water and state permits to divert that water from the Rio Grande at Buckman.
- The BDD Project will divert a total of 8,730 acre feet per year. San Juan-Chama water will provide about 2/3 of the BDD annual diversion, with Rio Grande water rights or other San Juan-Chama water supplying the remainder.
- BDD diversions of San Juan-Chama water are limited to San Juan-Chama water released in response to BDD orders from upstream reservoirs less transfer losses between the reservoir and diversion site.
- San Juan-Chama water from the current year's allocation will be released from Heron Reservoir, and will reach the BDD in 2 days.
- Other San Juan-Chama water owned or leased by any of the BDD partners may be stored in Abiquiu or El Vado Reservoirs, and can reach the BDD in 1 or 2 days.
- Diversions of native Rio Grande water will be reduced when Rio Grande flows measured at the Otowi Gage drop below 325 cubic feet per second, and stopped when flows drop to 200 cubic feet per second. These are unusually low flows that don't occur in normal years.



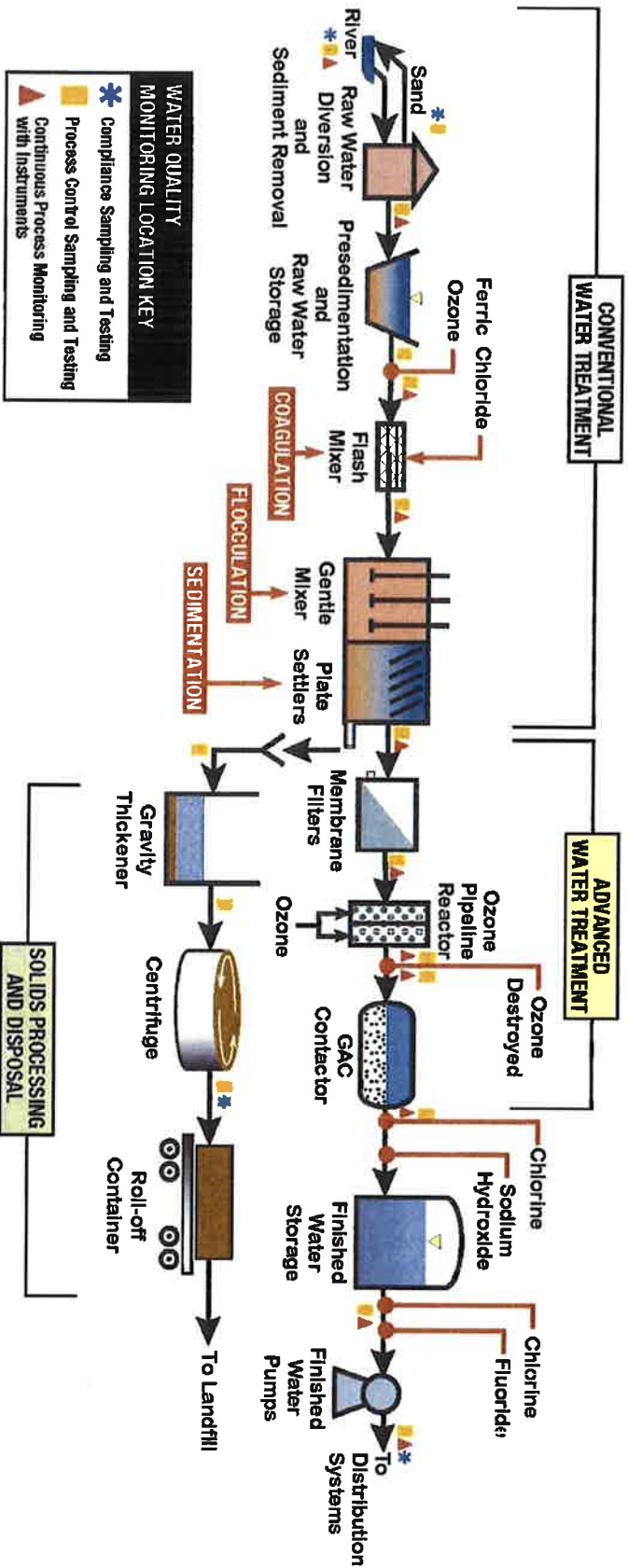


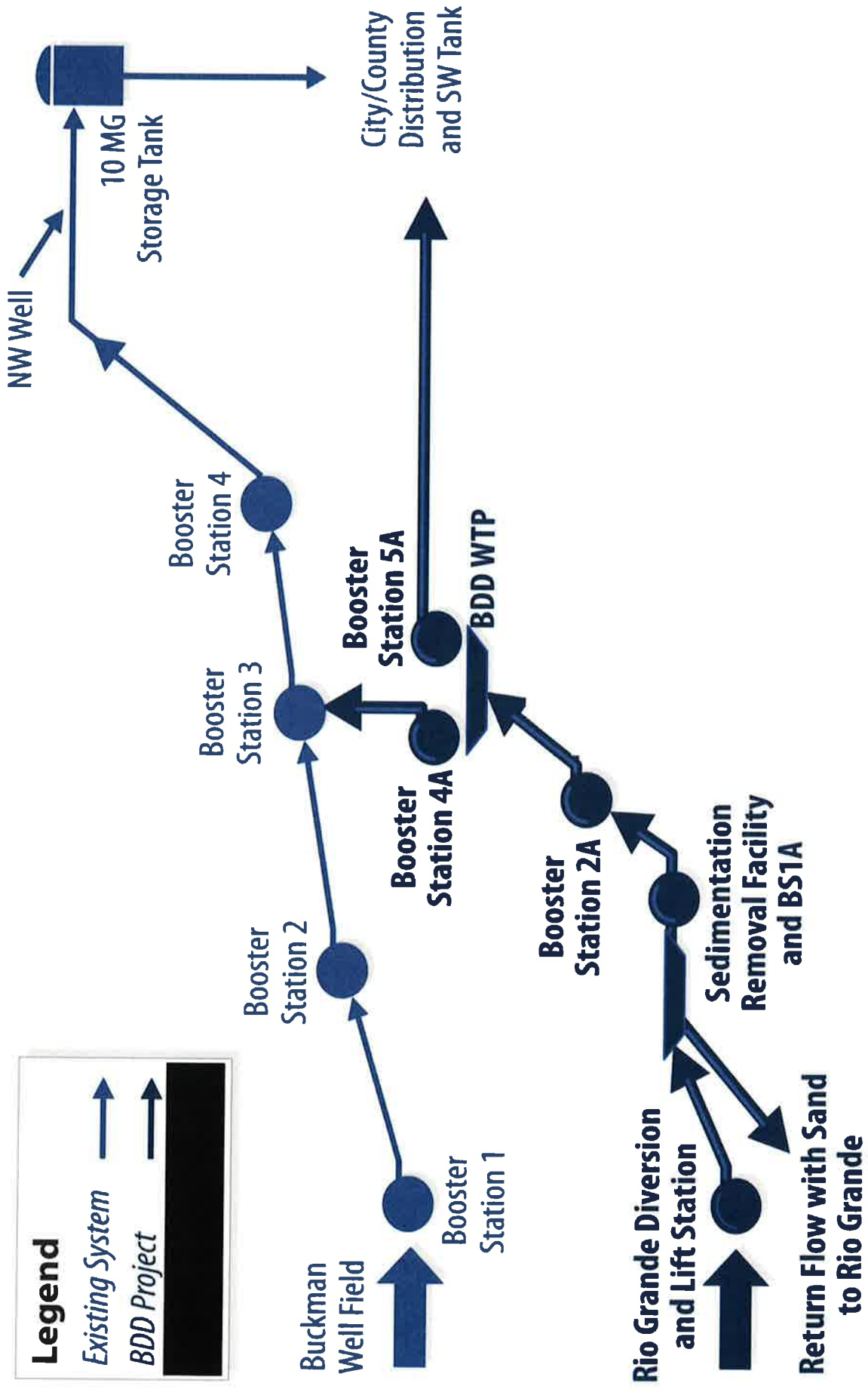
Buckman Regional Water Treatment Plant Processes

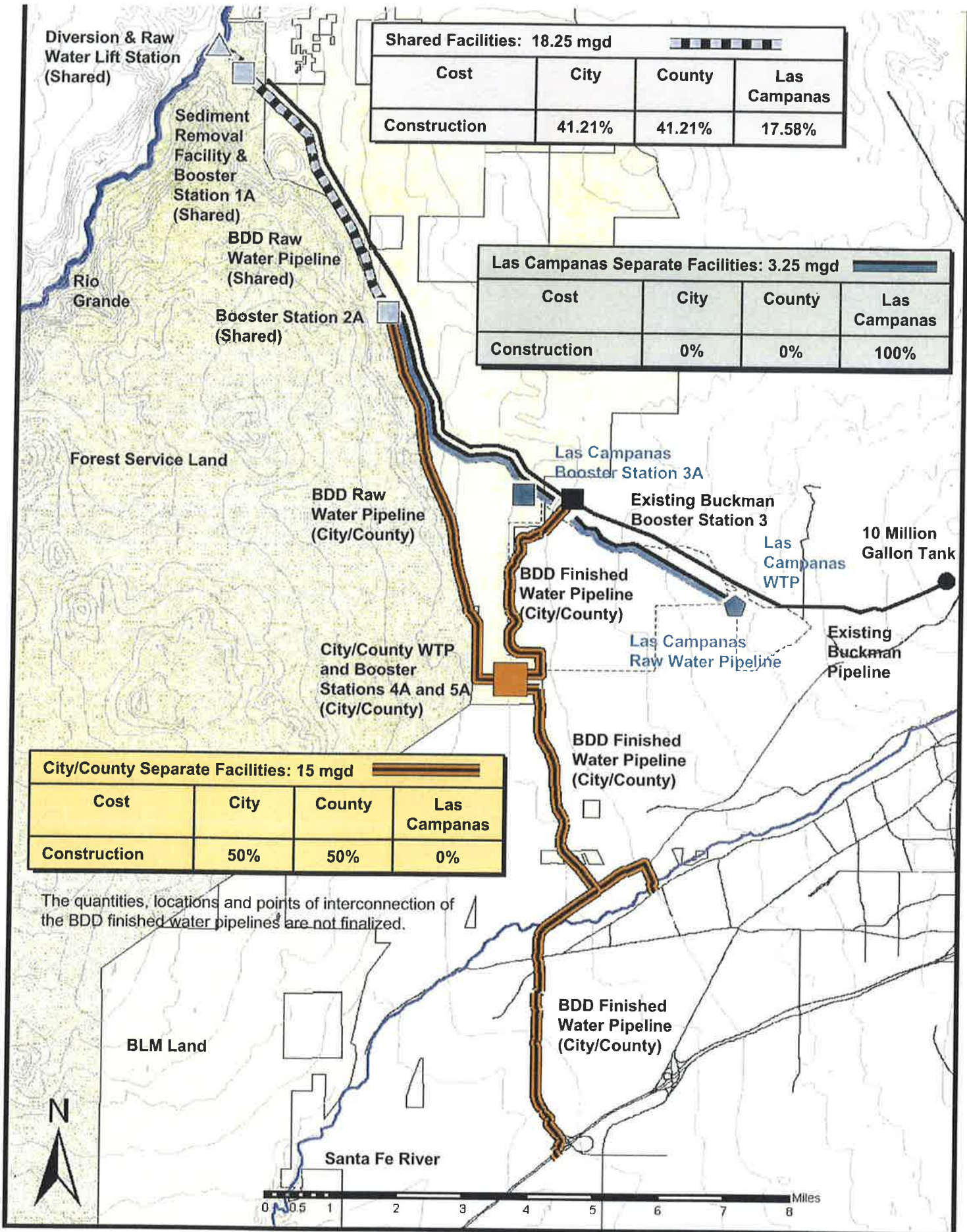
Buckman Direct Diversion

The Buckman Regional Water Treatment Plant includes a series of conventional and advanced water treatment processes. The conventional processes remove the vast majority of contaminants. The advanced processes provide additional treatment and polishing of the finished drinking water.

Conventional treatment processes include coagulation, flocculation, sedimentation and disinfection. Raw water ozonation improves the effectiveness of conventional treatment. Advanced treatment is provided by membrane filters, ozone and granular activated carbon contactors. Disinfection is accomplished with lower amounts of chlorine because the high-quality water does not need as much chlorine.







Appendix B

**City of Santa Fe
Consumer Confidence
Reports**

Why are there Contaminants in my Drinking Water?

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances from animals and human activity.

Contaminants in drinking water may include:

Microbial contaminants, such as viruses and bacteria that can cause illness, septic systems, and agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals can be added to drinking water from natural sources or from industrial or domestic wastewater discharges, oil and gas production, mining or farming.

Pesticides and herbicides, may come from a variety of sources, such as agriculture, urban storm-water runoff, and residential uses.

Organic chemical contaminants, including synthetic and naturally occurring pesticides, herbicides, and insecticides, can be added to drinking water from industrial processes and petroleum production, and can also come from gas stations, urban storm-water runoff, and septic systems.

Radioactive contaminants, which may be naturally occurring or added, can be found in water from natural deposits from former above ground testing, or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Nitrates
City of Santa Fe drinking water meets the federal drinking water standard of 10 ppm for nitrates (10 mg/L as N). Nitrates have been detected in some of the City Wells up to 7.16 ppm. For infants of less than one year of age, nitrates in drinking water can cause blue baby syndrome. Nitrates levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask your doctor from your health care provider.

Arsenic

The drinking water standard for arsenic is 10 µg/L. The CN's drinking water continued to meet this standard throughout 2016. Arsenic occurs naturally in the earth's crust. When these arsenic-containing rocks, minerals, and soil erode, they release arsenic into ground water. While our drinking water meets EPA's EPA standard, it does contain low levels of arsenic. The EPA standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Microbial and Disinfection Byproducts Rule

The Microbial and Disinfection Byproducts (M/DBP) Rules are a set of interrelated regulations that address risks to public health from disinfection byproducts (DBPs) in drinking water. Disinfection Byproducts Rule (DBPR) focuses on public health protection by limiting exposure to DBPs (known carcinogens) specifically total trihalomethanes (TTHM) and five haloacetic acids (HAAs) which can form in water through disinfectants used to control microbial pathogens.

The City of Santa Fe system has eight compliance sampling locations for TTHM and HAAs. Each location is sampled once per quarter. The average of analytical results for DBPs is a compliance value. The highest analytical result for a quarter is called the local maximum running annual average (LRMA). The LRMA at each location must be below the MCL (0.060 mg/L for HAAs and 0.080 mg/L for TTHM). Results shown in the Table below indicate that the individual quarterly values during 2016 ranged from 0.001 to 0.026 mg/L for HAAs and 0.0069 to 0.014 mg/L for TTHM. The highest LRMA was 0.0263 mg/L for HAAs and 0.0142 mg/L for TTHM, indicating that the system is in compliance.

DBP	MCL (µg/L)	Sample Year	Sample Location	Sample Date	Typical Source	
Trihalomethanes (TTHM)	0.060	NA	2016	0.0263	0.0142	0.0069
Haloacetic Acids (HAAs)	0.080	NA	2016	0.0263	0.0142	0.0069

1 = value in ppm (µg/L)
2 = highest number of violations

The Stage 2 DBPR also regulates the maximum residual for disinfectants chlorine dioxide, free chlorine, and chloramines. The maximum residual disinfectant level (MRDL) is 5.0 mg/L for chlorine, 4.0 mg/L for chlorine dioxide, and 4.0 mg/L for chloramines, particularly as a residual disinfectant in distribution system pipes.

The City of Santa Fe water system uses free chlorine as a disinfectant. For the year 2016, the highest MRDL was 4.0 mg/L at monitoring locations each month. The results are summarized in the table below:

DBP	MCL (mg/L)	Sample Year	Sample Location	Sample Date	Typical Source	
Chlorine	4.0	NA	2016	2.20	0.00	2.20
Chlorine Dioxide	4.0	NA	2016	0.00	0.00	0.00

1 = value in ppm (mg/L)

Cryptosporidium

Cryptosporidium is a protozoan parasite that is common in surface waters. The oocyst is the transmission stage of the organism. *Cryptosporidium* is introduced into our source water from agricultural operations, wildlife, and domestic animals. It is readily removed by the conventional treatment processes utilized at the Canyon Road Water Treatment facility, the oocyst is resistant to chemical disinfectants like chlorine and the primary reason to determine if additional treatment is required. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection.

In April 2007 the City began a two-year study to determine the average *Cryptosporidium* concentration in source water entering the Canyon Road Water Treatment facility. The sampling portion of the study was completed in March of 2006 (SEPA). As part of the study, components contained in the Stage 2 DBPR were required in a single untreated sample in each of the following months: December of 2007, September 2008 and October 2008. The highest 12-month consecutive mean for this study was 0.08 oocysts/L. Since the concentration is <0.075 oocysts/L, no additional treatment at the Canyon Road Water Treatment Facility was required. The results of the study are summarized in the table below, starting in October 2005 and scheduled to end in October 2017. No *Cryptosporidium* oocysts have been detected since monitoring began in October 2005 (through December 2016). As with *Cryptosporidium* oocysts, no *Giardia Lamblia* oocysts have been detected in the same time period.

Any new water system treating surface water such as BDD is required to monitor *Cryptosporidium* for 24 consecutive months. At the BDD the untreated raw Rio Grande water samples ranged from 0 to 0.4 oocysts/L. The City of Santa Fe BDD began a second round of sampling in October 2015 and scheduled to end in September 2017. *Cryptosporidium* oocysts were only detected in one of twelve monthly raw water samples at BRWTF, and the only detection was 0.1 oocysts/L.

Unregulated Contaminant Monitoring Rule (UCMR)

EPA uses the Unregulated Contaminant Monitoring Rule (UCMR) to collect data for contaminants that are suspected to be present in drinking water and do not have health-based standards set under the Safe Drinking Water Act (SDWA). Unregulated contaminant monitoring helps EPA determine whether certain contaminants occur and, whether the Agency should establish health-based standards for these contaminants. UCMR sampling for the Santa Fe water system between March and December 2015.

The average of all of the monitoring results and the range of detections for any detected unregulated contaminants for which state or federal rules require monitoring are presented in the table. Other contaminants were collected and analyzed, as required by SDWA, but they were not found above detection limits. The UCMR sampling locations are shown in the table. UCMR samples, and therefore are not included in the above table.

Name	Unregulated Contaminant Monitoring—		
	Units	Report Limit*	Range 2016
1,4-Dioxane	ppb	0.040	0.019
Chloroform	ppb	127	21
Chromium	ppb	0.75	0.21
Hexachlorocyclopentadiene (HxCPCD)	ppb	0.45	0.00
Hexachlorobenzene (HxCBz)	ppb	3.7	2.1
Styrene	ppb	166	35
Trihalomethanes (TTHM)	ppb	2.0	0.3

* Average of all 2015 UCMR results

Conserved Water... every drop counts

Lead and Copper Rule

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Santa Fe is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. You can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking, cooking, or baby formula. If you have lead service lines or you may wish to have your water tested, information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at <http://www.epa.gov/lead/>.

Tests for lead and copper are taken from customer taps located throughout the City once every three years. The most recent round of lead and copper testing took place in August 2015. The most recent will be performed in 2018. If you own a lead service line, you can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing.

Contaminant	MCL (µg/L)	City Water Lead (ppb)	City Water Copper (ppb)	Sample Date	Example Date	Typical Source
Copper (ppm)	1.3	1.3	0.40	July 20 2015	August 2015	No
Lead (ppm)	0	0.015	0.0023	July 20 2015	August 2015	No

*MCLs of monitoring are used to determine the concentration in the tap water. If MCLs are exceeded, the concentration in the tap water is based on the number of samples analyzed in 2015. The MCLs are based on the 90th percentile of the 270 samples for copper and lead. (EPA 90th Percentile)

Monitoring for LANI-derived contaminants

In cooperation with Los Alamos National Laboratory (LANL) and the New Mexico Environment Department, the City currently monitors Buckman Wells 1, 6 and 8 for LANI-derived contamination on a quarterly basis. Samples are analyzed for radionuclides, general inorganic chemicals, metals, high explosives and organics. This report sampling that occurred during the years 2001 - 2016 and has indicated that Laboratory-derived radionuclides are not present in the Buckman Wells 1, 6 and 8. The results do indicate detectable levels of radionuclides associated with natural sources. These wells are part of the B3 wells that make-up the Buckman Wellfield. When these wells are used, water from these wells is delivered to the Buckman Tank prior to distribution into the system.

2016 City of Santa Fe Water Quality Table

The table on the following page lists contaminants which: 1) have associated primary Maximum Contaminant Levels (MCLs) that are regulated and 2) were detected in testing conducted by the City and New Mexico Environment Department. The table includes only those contaminants found above detection limits during this testing, or during sampling in previous years if not analyzed during 2016. The EPA requires monitoring for certain contaminants less than once per year because the concentration of these contaminants were not found above detection limits. Drinking water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800) 426-9999, or visiting www.epa.gov/lead/.

Please refer separate City of Santa Fe 2016 Water Quality Table

Why are there Contaminants in my Drinking Water?



Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, reservoirs, wells, and springs. Contaminants can enter the surface of the land or through the ground. It dissolves naturally occurring minerals and, in some cases, man-made materials, and can pick up substances from human activity. Contaminants in drinking water may include:

Microbial contaminants, such as viruses and bacteria that can cause disease, are common in agricultural livestock operations and wildlife.

Inorganic contaminants, such as salts and metals, can be naturally-occurring or result from urban storm-water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

Pesticides and herbicides, may come from a variety of sources, including agricultural, urban storm-water runoff, and residential lawns.

Organic chemical contaminants, including synthetic and volatile organic compounds, are commonly used in a wide range of products and processes, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring, man-made from nuclear facilities and atmospheric testing, can be found in water, and may be the result of oil and gas production and mining activities.

In order to assure that the water is safe to drink, EPA prescribes regulations that limit the amount of contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Nitrates

City of Santa Fe drinking water meets the federal drinking water standard for nitrate (10 mg/L). Nitrates have been detected in some of the wells used to supply the City of Santa Fe. High nitrate levels in drinking water can be harmful to infants under six months of age. High nitrate levels in drinking water can also be harmful to pregnant women. Nitrate levels may rise quickly during heavy rain events. If you are caring for an infant, you should ask advice from your health care provider.

Arsenic

The drinking water standard for arsenic is 10 mg/L. The City of Santa Fe continues to monitor the arsenic levels in its drinking water. Arsenic occurs naturally in the earth's crust. When these arsenic-containing rocks weather, they release arsenic into ground water. While our drinking water is treated to remove arsenic, it does contain low levels of arsenic. The EPA has set a maximum contaminant level goal (MCLG) for arsenic in drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer and other health effects such as skin damage and circulatory problems.



Cryptosporidium

Cryptosporidium is a protozoan parasite that is common in surface water. It is a common cause of waterborne illness in humans and animals. The parasite is resistant to chlorine disinfection and can survive in water for up to 14 months. The City of Santa Fe has implemented a number of measures to reduce the risk of *Cryptosporidium* in its drinking water, including the use of membrane filtration and the installation of a new distribution system. The City also monitors for *Cryptosporidium* in its drinking water and has implemented a number of measures to reduce the risk of *Cryptosporidium* in its drinking water, including the use of membrane filtration and the installation of a new distribution system. The City also monitors for *Cryptosporidium* in its drinking water and has implemented a number of measures to reduce the risk of *Cryptosporidium* in its drinking water, including the use of membrane filtration and the installation of a new distribution system.

Voluntary Monitoring

The City of Santa Fe has established a voluntary monitoring program for the Canyon Road Water Treatment Plant (CRWTP) and the Backman Drive Water Treatment Plant (BDWTP). The program is designed to monitor the quality of the water supplied to the City of Santa Fe. The program includes the following:

- Monitoring of the water quality at the CRWTP and BDWTP.
- Monitoring of the water quality at the distribution system.
- Monitoring of the water quality at the residential water supply.

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- Monitoring of the water quality at the CRWTP and BDWTP.
- Monitoring of the water quality at the distribution system.
- Monitoring of the water quality at the residential water supply.

Monitoring for LAMP Derived Contaminants

In cooperation with the Arizona National Laboratory (ANL) and the City of Santa Fe, the City of Santa Fe is monitoring for LAMP derived contaminants in its drinking water. LAMP derived contaminants include a wide range of chemicals, metals, high explosives and organics. This monitoring program is designed to detect and identify these contaminants in the Backman Drive Water Treatment Plant (BDWTP) and the Canyon Road Water Treatment Plant (CRWTP). The program includes the following:

- Monitoring of the water quality at the BDWTP and CRWTP.
- Monitoring of the water quality at the distribution system.
- Monitoring of the water quality at the residential water supply.

Microbial and Disinfection Byproducts Rule

The City of Santa Fe is in compliance with the Microbial and Disinfection Byproducts Rule (MDBPR). The rule requires public water systems to monitor and control the levels of disinfection byproducts (DBPs) in their drinking water. The City of Santa Fe has implemented a number of measures to reduce the risk of DBPs in its drinking water, including the use of membrane filtration and the installation of a new distribution system. The City also monitors for DBPs in its drinking water and has implemented a number of measures to reduce the risk of DBPs in its drinking water, including the use of membrane filtration and the installation of a new distribution system.

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Contaminant	2017 MCLG	2017 MCL	2017 MCLD	2017 MCLD	2017 MCLD	2017 MCLD
Microbiocidal Acids (MCLG)	0.05	NA	2017	0.038	0.084	0.031
Total trihalomethanes (TTHM)	0.10	NA	2017	0.057	0.023	0.049

Note: MCLG is in ppm (mg/L). MCL is in individual samples at all locations. MCLD is in ppm (mg/L). MCLD is in individual samples at all locations.

Contaminant	2017 MCLG	2017 MCL	2017 MCLD	2017 MCLD	2017 MCLD	2017 MCLD
Chlorine	4.00	4	2017	0.5	0.01	1.52

Note: MCLG is in ppm (mg/L). MCL is in individual samples at all locations. MCLD is in ppm (mg/L). MCLD is in individual samples at all locations.

Lead and Copper Rule

The City of Santa Fe is in compliance with the Lead and Copper Rule (LCR). The rule requires public water systems to monitor and control the levels of lead and copper in their drinking water. The City of Santa Fe has implemented a number of measures to reduce the risk of lead and copper in its drinking water, including the use of lead-free pipes and the installation of a new distribution system. The City also monitors for lead and copper in its drinking water and has implemented a number of measures to reduce the risk of lead and copper in its drinking water, including the use of lead-free pipes and the installation of a new distribution system.

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Contaminant	2017 MCLG	2017 MCL	2017 MCLD	2017 MCLD	2017 MCLD	2017 MCLD
Lead	0.01	0.01	0.022	0.01	0.01	0.01
Copper	1.3	1.3	0.40	0.30	0.30	0.30

Note: MCLG is in ppm (mg/L). MCL is in individual samples at all locations. MCLD is in ppm (mg/L). MCLD is in individual samples at all locations.

2017 City of Santa Fe Water Quality Table

The table on the following page lists contaminants which:

- have associated primary Maximum Contaminant Levels (MCLs) that are established and
- were detected in only those constituents found above detection limits during 2017 sampling, or during sampling in previous years if not analyzed during 2017. The EPA requires monitoring for certain contaminants less than once per year because the vast majority of these contaminants were not found above detection limits. Drinking water with these contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be found at www.epa.gov/safewater.

Please refer to the following page for more information.

Unregulated Contaminant Monitoring Rule (UCMR)

The City of Santa Fe is in compliance with the Unregulated Contaminant Monitoring Rule (UCMR). The rule requires public water systems to monitor and control the levels of unregulated contaminants in their drinking water. The City of Santa Fe has implemented a number of measures to reduce the risk of unregulated contaminants in its drinking water, including the use of membrane filtration and the installation of a new distribution system. The City also monitors for unregulated contaminants in its drinking water and has implemented a number of measures to reduce the risk of unregulated contaminants in its drinking water, including the use of membrane filtration and the installation of a new distribution system.

Contaminant	2017 MCLG	2017 MCL	2017 MCLD	2017 MCLD	2017 MCLD	2017 MCLD
Lead	0.01	0.01	0.022	0.01	0.01	0.01
Copper	1.3	1.3	0.40	0.30	0.30	0.30

Note: MCLG is in ppm (mg/L). MCL is in individual samples at all locations. MCLD is in ppm (mg/L). MCLD is in individual samples at all locations.

The City of Santa Fe is in compliance with the Unregulated Contaminant Monitoring Rule (UCMR). The rule requires public water systems to monitor and control the levels of unregulated contaminants in their drinking water. The City of Santa Fe has implemented a number of measures to reduce the risk of unregulated contaminants in its drinking water, including the use of membrane filtration and the installation of a new distribution system. The City also monitors for unregulated contaminants in its drinking water and has implemented a number of measures to reduce the risk of unregulated contaminants in its drinking water, including the use of membrane filtration and the installation of a new distribution system.

Unregulated Contaminant Monitoring Rule (UCMR)

The City of Santa Fe is in compliance with the Unregulated Contaminant Monitoring Rule (UCMR). The rule requires public water systems to monitor and control the levels of unregulated contaminants in their drinking water. The City of Santa Fe has implemented a number of measures to reduce the risk of unregulated contaminants in its drinking water, including the use of membrane filtration and the installation of a new distribution system. The City also monitors for unregulated contaminants in its drinking water and has implemented a number of measures to reduce the risk of unregulated contaminants in its drinking water, including the use of membrane filtration and the installation of a new distribution system.

City of Santa Fe 2017 Water Quality Monitoring Regulated Compliance Table

Contaminant	Units	MCL	MCLD	City Well "Hot" Value	Sample Date	Backflow Tank	Sample Date	Compliance Ratio	Sample Date	Validation	Typical Source
Inorganic Contaminants											
Asate	ppm	10	0	ND-1.5	2017	NO	2017	NO	2017	No	From natural deposits, runoff from streets, and from gas and electrical production facilities
Iron	ppm	3	3	ND-0.15	2017	0.0	2017	0.0	2017	No	Discharge from spring water, discharge from metal refineries, erosion of natural deposits
Selenium	ppm	50	50	?	2017	NO	2017	NO	2017	No	Discharge from petroleum and metal refineries, erosion of natural deposits, discharge from metal refineries
Fluoride	ppm	4	4	ND-1.1	2017	0.4	2017	0.5	2017	No	Erosion of natural deposits, water activities which permeate spring water, discharge from fertilizer and phosphate facilities
Nitrate (as N)	ppm	10	10	?	2017	NO	2017	NO	2017	No	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion from natural deposits
Inorganic Organic Contaminants											
6:2 Ethylhexyl Phthalate	ppm	0.26	0	0.01	2017	NO	2017	NO	2017	No	Discharge from rubber and dental facilities
Radon Contaminants											
Great Appliance	pCi/L	15	0	0.2-1.9	2017	1.6	2017	NA	2017	No	Erosion of natural deposits
Great Appliance	pCi/L	50	0	NA	2017	3.5	2017	NA	2017	No	Discharge from natural and man-made deposits
Radon 222/220	pCi/L	5	0	0.75 (0.38-1.75)	2017	0.0	2017	NA	2017	No	Erosion of natural deposits
Radon	ppm	30	0	1	2017	2	2017	NA	2017	No	Erosion of natural deposits
Surface Water Contaminants											
Turbidity (Nephelometric turbidity units)	NTU	TT+1.0	0	NA	NA	NA	2017	0.22	2017	No	Soil runoff
Turbidity (Nephelometric turbidity units)	NTU	TT+0.3	0	NA	NA	NA	2017	100%	2017	No	Soil runoff
Total Organic Carbon (Total Organic Carbon)	mg/L	TT+0.1	0	NA	NA	NA	2017	1.27 (1.2-1.3)	2017	No	Naturally present in the environment

NOTE:

- EPA considers 50 pCi/L to be the level of concern for beta particles.
- The range represents the highest and low values within the Compliance Period (annual average of TDC removal ratio must be > 0.91 removal).
- Turbidity is measured in nephelometric turbidity units (NTU). We monitor because it is a good indicator of the effectiveness of our filtration system.
- City Well #1, #2, #3, #4, #5, #6, #7, #8, #9, #10, #11, #12, #13, #14, #15, #16, #17, #18, #19, #20, #21, #22, #23, #24, #25, #26, #27, #28, #29, #30, #31, #32, #33, #34, #35, #36, #37, #38, #39, #40, #41, #42, #43, #44, #45, #46, #47, #48, #49, #50, #51, #52, #53, #54, #55, #56, #57, #58, #59, #60, #61, #62, #63, #64, #65, #66, #67, #68, #69, #70, #71, #72, #73, #74, #75, #76, #77, #78, #79, #80, #81, #82, #83, #84, #85, #86, #87, #88, #89, #90, #91, #92, #93, #94, #95, #96, #97, #98, #99, #100, #101, #102, #103, #104, #105, #106, #107, #108, #109, #110, #111, #112, #113, #114, #115, #116, #117, #118, #119, #120, #121, #122, #123, #124, #125, #126, #127, #128, #129, #130, #131, #132, #133, #134, #135, #136, #137, #138, #139, #140, #141, #142, #143, #144, #145, #146, #147, #148, #149, #150, #151, #152, #153, #154, #155, #156, #157, #158, #159, #160, #161, #162, #163, #164, #165, #166, #167, #168, #169, #170, #171, #172, #173, #174, #175, #176, #177, #178, #179, #180, #181, #182, 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#1869, #1870, #1871, #1872, #1873, #1874, #1875, #1876, #1877, #1878, #18

Why are there Contaminants in my Drinking Water?

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground (bedrock and soil), it picks up substances resulting from the presence of animals or from human activities. These substances in drinking water may include:

Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, can be naturally-occurring or result from urban storm-water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

Pesticides and herbicides, may come from a variety of residential uses.

Organic chemical contaminants, including synthetic and volatile organic compounds, are produced by natural processes and petroleum production, and can also come from gas stations, urban storm-water runoff, and septic systems.

Radionuclides, which can be naturally occurring, are produced from nuclear fuel-cycle and atmospheric deposition processes and mining activities, or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA promulgates regulations that govern the drinking water systems in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Nitrates

City of Santa Fe drinking water meets the federal drinking water standard of 10 mg/L. Nitrates have been detected in some of the City's wells. Nitrates in drinking water above 10 mg/L is a health risk for infants of less than six months of age. High nitrate levels in drinking water can also cause a condition called methemoglobinemia, also known as "blue baby syndrome," in which the blood's ability to carry oxygen is reduced. If you are caring for an infant, you should ask whether your local water provider

The drinking water standard for nitrate is 10 mg/L. The City's drinking water continues to meet this standard throughout 2018. Averse occurs naturally in the earth's crust. When these naturally-occurring nitrates, nitrites, and soil nitrate, they release nitrate into the water supply. EPA established the current understanding of nitrate's drinking water. EPA continues to research the potential health effects in humans as well as other animals and birds. Nitrate is not known to cause cancer or other health effects such as skin damage and circulatory problems.



Cryptosporidium

Cryptosporidium is a protozoan parasite that is common in surface waters. The oocyst is the transmission stage of the organism. It is resistant to chlorine disinfection and can survive in municipal water treatment processes. Although the oocyst is not infectious, it can survive in municipal water treatment processes. However, the oocyst is resistant to chemical disinfection. The oocyst is resistant to chemical disinfection. The oocyst is resistant to chemical disinfection.

In April 2007 the City began a two-year study to determine the average *Cryptosporidium* concentration in source water entering the City. The study was completed in March of 2008. The study was part of the requirements contained in the 2008 USEPA Long-Term Enhanced Surface Water Treatment Rule. *Cryptosporidium* was detected in a sample from the City's water supply, to additional treatment at the Canyon Road WTP. The City's water supply, to additional treatment at the Canyon Road WTP. The City's water supply, to additional treatment at the Canyon Road WTP.

Any new water system treating surface water such as BOD is required to monitor *Cryptosporidium* at 24 concentrations annually. At the BOD the monitoring is required to be done at least once a month. The City's water supply, to additional treatment at the Canyon Road WTP. The City's water supply, to additional treatment at the Canyon Road WTP.

For the results of additional voluntary monitoring for the Canyon Road WTP, Buckman Wells and City Wells, please see the City's Water Quality page at www.santafe.org/water-quality. The City's Water Quality page at www.santafe.org/water-quality. The City's Water Quality page at www.santafe.org/water-quality.



Voluntary Monitoring

EPA has established secondary maximum contaminant levels (SMCL) for certain contaminants. Secondary contaminants are non-enforceable standards that serve as their drinking water. The presence of these contaminants typically results from the erosion of natural deposits, and is not a health concern. The presence of these contaminants is not a health concern.

The results of additional voluntary monitoring for the Canyon Road WTP, Buckman Wells and City Wells, please see the City's Water Quality page at www.santafe.org/water-quality. The City's Water Quality page at www.santafe.org/water-quality.

Monitoring for Lead and Copper. The City's water supply, to additional treatment at the Canyon Road WTP. The City's water supply, to additional treatment at the Canyon Road WTP.

The City of Santa Fe has implemented a comprehensive monitoring program for lead and copper in drinking water. The program includes regular testing of public water supply system pipes and service lines. The City's water supply, to additional treatment at the Canyon Road WTP. The City's water supply, to additional treatment at the Canyon Road WTP.

Location	Year	Lead (ppb)	Copper (ppb)
City Wells	2018	0.01	0.01
Buckman Wells	2018	0.01	0.01
Canyon Road WTP	2018	0.01	0.01

The City's water supply, to additional treatment at the Canyon Road WTP. The City's water supply, to additional treatment at the Canyon Road WTP.

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If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and pipes used in the water supply. The City of Santa Fe is responsible for providing high quality drinking water, but cannot control the variety of materials used in your home. You can minimize the potential for lead entering your home by flushing your tap for 30 seconds to 2 minutes before using water for drinking, cooking, or baby formula. You are concerned about lead in your water or copper in your water, please contact the City's Water Quality Department at (505) 426-9179 for an appointment to test your water.

Contaminant	City Water Level (ppm)	Exceeds AL
Lead	0.01	No
Copper	0.01	No

The City's water supply, to additional treatment at the Canyon Road WTP. The City's water supply, to additional treatment at the Canyon Road WTP.

The City's water supply, to additional treatment at the Canyon Road WTP. The City's water supply, to additional treatment at the Canyon Road WTP.

The City's water supply, to additional treatment at the Canyon Road WTP. The City's water supply, to additional treatment at the Canyon Road WTP.

The table on the following page lists contaminants which have associated primary Maximum Contaminant Levels (MCLs) that are regulated and 2) were detected in testing conducted by the City and New Mexico Environment Department.

Contaminant	City Water Level (ppm)	Exceeds AL
Lead	0.01	No
Copper	0.01	No

The table includes only those constituents found above the MCL. The City's water supply, to additional treatment at the Canyon Road WTP. The City's water supply, to additional treatment at the Canyon Road WTP.

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City of Santa Fe drinking water meets the federal drinking water standard of 10 mg/L. Nitrates have been detected in some of the City's wells. Nitrates in drinking water above 10 mg/L is a health risk for infants of less than six months of age. High nitrate levels in drinking water can also cause a condition called methemoglobinemia, also known as "blue baby syndrome," in which the blood's ability to carry oxygen is reduced. If you are caring for an infant, you should ask whether your local water provider

The drinking water standard for nitrate is 10 mg/L. The City's drinking water continues to meet this standard throughout 2018. Averse occurs naturally in the earth's crust. When these naturally-occurring nitrates, nitrites, and soil nitrate, they release nitrate into the water supply. EPA established the current understanding of nitrate's drinking water. EPA continues to research the potential health effects in humans as well as other animals and birds. Nitrate is not known to cause cancer or other health effects such as skin damage and circulatory problems.

For the results of additional voluntary monitoring for the Canyon Road WTP, Buckman Wells and City Wells, please see the City's Water Quality page at www.santafe.org/water-quality. The City's Water Quality page at www.santafe.org/water-quality.

The City of Santa Fe has implemented a comprehensive monitoring program for lead and copper in drinking water. The program includes regular testing of public water supply system pipes and service lines. The City's water supply, to additional treatment at the Canyon Road WTP. The City's water supply, to additional treatment at the Canyon Road WTP.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and pipes used in the water supply. The City of Santa Fe is responsible for providing high quality drinking water, but cannot control the variety of materials used in your home. You can minimize the potential for lead entering your home by flushing your tap for 30 seconds to 2 minutes before using water for drinking, cooking, or baby formula. You are concerned about lead in your water or copper in your water, please contact the City's Water Quality Department at (505) 426-9179 for an appointment to test your water.

The table on the following page lists contaminants which have associated primary Maximum Contaminant Levels (MCLs) that are regulated and 2) were detected in testing conducted by the City and New Mexico Environment Department.

City of Santa Fe
Water Quality
2018

Why are there Contaminants in my Drinking Water?



Sources of drinking water, from tap water to bottled water, are not free of contaminants. Some contaminants are naturally occurring, while others are introduced into the water supply through human activities. Contaminants can be introduced into the water supply through various sources, including:

- **Microbial contaminants**, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic chemicals**, such as salts and metals can be naturally occurring or result from mining and industrial processes, and also come from gas stations, urban storm water runoff, and septic systems.
- **Organic chemical contaminants**, including synthetic pesticides, herbicides, and insecticides, are by-products of industrial processes and petroleum products. They also come from gas stations, urban storm water runoff, and septic systems.
- **Radon**, a naturally occurring radioactive gas that can be found in groundwater and may enter the water supply through natural processes.
- **Drugs**, which can be naturally occurring or man-made, can be found in water through atmospheric deposition from "farm" above ground storage tanks, or as a result of oil and gas production and mining activities.

In order to protect the tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and drug administration sets standards for many of the contaminants in bottled water, which must provide the same protection for public health.

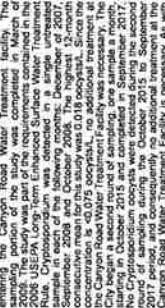


Nitrates
City of Santa Fe drinking water meets the federal drinking water standard of 10 mg/L for nitrate-nitrogen (as N). Nitrate-nitrogen in drinking water is a health risk for infants 2 years of age and younger. Drinking water with nitrate-nitrogen levels above 10 mg/L is a health risk for infants 2 years of age and younger. If you are caring for an infant 2 years of age and younger, you should consult your health care provider.

Voluntary Monitoring

The City of Santa Fe has a long history of monitoring the quality of its drinking water. In 2015, the City of Santa Fe began a voluntary monitoring program to track the quality of its drinking water. The program is designed to provide the public with information about the quality of their drinking water. The program includes monitoring for a variety of contaminants, including:

- **Microbial contaminants**, such as bacteria and viruses.
- **Inorganic chemicals**, such as nitrate-nitrogen and nitrite-nitrogen.
- **Organic chemicals**, such as atrazine and glyphosate.
- **Radon**.



Monitoring for Lead- and Copper-Derived Contaminants
In cooperation with Los Alamos National Laboratory (LANL) and the New Mexico Environmental Department, the City of Santa Fe is conducting a study to monitor the quality of its drinking water. The study is designed to provide the public with information about the quality of their drinking water. The study includes monitoring for a variety of contaminants, including:

- **Lead**.
- **Copper**.
- **Microbial contaminants**, such as bacteria and viruses.

Microbial and Disinfection Byproducts Rule

The Microbial and Disinfection Byproducts Rule (MDBPR) is a federal regulation that requires public water systems to monitor and control the levels of disinfection byproducts (DBPs) in their drinking water. DBPs are chemicals that are formed when disinfectants react with natural organic matter in water. The rule requires public water systems to monitor the levels of DBPs in their drinking water and to take steps to reduce the levels of DBPs if they are found to be above the maximum contaminant level (MCL).

Contaminant	2015	2016	2017	2018	2019	2020	2021	2022
Chloroform	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Bromoform	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total THMs	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8

The City of Santa Fe has been monitoring the quality of its drinking water for a number of years. The results of the monitoring program are summarized in the table below.

Lead and Copper Rule

The Lead and Copper Rule (LCR) is a federal regulation that requires public water systems to monitor and control the levels of lead and copper in their drinking water. The rule requires public water systems to monitor the levels of lead and copper in their drinking water and to take steps to reduce the levels of lead and copper if they are found to be above the maximum contaminant level (MCL).

Contaminant	2015	2016	2017	2018	2019	2020	2021	2022
Copper	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Lead	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15

The City of Santa Fe has been monitoring the quality of its drinking water for a number of years. The results of the monitoring program are summarized in the table below.

2019 City of Santa Fe Water Quality Table

The table on this page lists contaminants which (MCL) that are regulated and (MCL) that are not regulated. The table includes only those contaminants found above the MCL in previous years. The table also includes information about the source of the contaminant and the steps that are being taken to reduce the level of the contaminant.

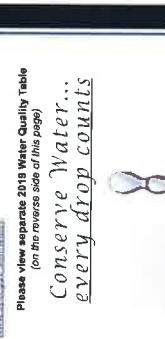
Contaminant	MCL	2019	2020	2021	2022	2023	2024	2025
Copper (PPM)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Lead (PPB)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15

The table includes only those contaminants found above the MCL in previous years. The table also includes information about the source of the contaminant and the steps that are being taken to reduce the level of the contaminant.

Conserving Water... Every Drop Counts

Conserving water is one of the best ways to protect the environment and save money. There are many simple steps you can take to conserve water in your home, including:

- Taking shorter showers.
- Turning off the tap when brushing your teeth.
- Fixing leaks.
- Using water-saving devices.



For information regarding the City's water conservation program, please call the City's Water Conservation Hotline at (505) 955-4225.

Why are there Contaminants in my Drinking Water?



Species of drinking water from the water and boiler water) inside every, case, showers, pots, reservoirs, the surface of the tank or through the ground. It dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or other waste in the water. Contaminants in drinking water may include:

- Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, can be found in natural deposits and can also be added to the water through mining and other industrial processes.
- Organic chemical contaminants, including synthetic and natural pesticides, herbicides, and insecticides, can be found in natural deposits and can also be added to the water through mining and other industrial processes.
- Radionuclides, which can be naturally occurring or man-made from nuclear fuel cycle activities, can be found in natural deposits and can also be added to the water through mining and other industrial processes.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water supplies. Public drinking water systems are required to follow EPA (FDA) regulations, establish limits for contaminants in bottled water, which must provide the same protection for public health.

Nitrates

City of Santa Fe is currently monitoring nitrates in drinking water. Nitrates are found in water from agricultural runoff and can be found in water from septic tanks. Nitrates can be found in water from septic tanks. Nitrates can be found in water from septic tanks. Nitrates can be found in water from septic tanks.

Arsenic

Arsenic is a mineral that occurs naturally in the earth's crust. It is found in rocks and soil. Arsenic is found in rocks and soil. Arsenic is found in rocks and soil. Arsenic is found in rocks and soil. Arsenic is found in rocks and soil.

Cryptosporidium

Cryptosporidium is a protozoan parasite that is common in the environment. It is found in the feces of many animals, including cows, pigs, and chickens. It is found in the feces of many animals, including cows, pigs, and chickens. It is found in the feces of many animals, including cows, pigs, and chickens.

In April 2007, the City began a two-year study to determine the average Cryptosporidium concentration in source water. The study was completed in March of 2009. The study was completed in March of 2009. The study was completed in March of 2009.

Monitoring for LANL Derived Contaminants

In cooperation with the Santa Fe National Laboratory (LANL), the City of Santa Fe is monitoring for derived contaminants in drinking water. The City of Santa Fe is monitoring for derived contaminants in drinking water. The City of Santa Fe is monitoring for derived contaminants in drinking water.

Voluntary Monitoring

The City of Santa Fe is offering voluntary monitoring for lead, copper, and iron in drinking water. The City of Santa Fe is offering voluntary monitoring for lead, copper, and iron in drinking water. The City of Santa Fe is offering voluntary monitoring for lead, copper, and iron in drinking water.

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Microbial and Disinfection Byproducts Rule

The Microbial and Disinfection Byproducts (MDBPR) Rules are a set of federal regulations that address risks from disinfection byproducts (DBPs) in drinking water. The City of Santa Fe is offering voluntary monitoring for lead, copper, and iron in drinking water.

Contaminant	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Lead (ppb)	0	15	0.93	26	20	20	20	20	20	20
Copper (ppb)	1.3	1.3	0.16	30	30	30	30	30	30	30

The City of Santa Fe is offering voluntary monitoring for lead, copper, and iron in drinking water. The City of Santa Fe is offering voluntary monitoring for lead, copper, and iron in drinking water. The City of Santa Fe is offering voluntary monitoring for lead, copper, and iron in drinking water.

Lead and Copper Rule

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The City of Santa Fe is offering voluntary monitoring for lead, copper, and iron in drinking water.

Contaminant	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Lead (ppb)	0	15	0.93	26	20	20	20	20	20	20
Copper (ppb)	1.3	1.3	0.16	30	30	30	30	30	30	30

The City of Santa Fe is offering voluntary monitoring for lead, copper, and iron in drinking water. The City of Santa Fe is offering voluntary monitoring for lead, copper, and iron in drinking water. The City of Santa Fe is offering voluntary monitoring for lead, copper, and iron in drinking water.

2021 City of Santa Fe Water Quality Table

The table on the following page lists contaminants which have exceeded primary Maximum Contaminant Levels (MCLs) and are regulated by the City of Santa Fe. The table on the following page lists contaminants which have exceeded primary Maximum Contaminant Levels (MCLs) and are regulated by the City of Santa Fe.

Contaminant	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Lead (ppb)	0	15	0.93	26	20	20	20	20	20	20
Copper (ppb)	1.3	1.3	0.16	30	30	30	30	30	30	30



Conserve Water... every drop counts

Please view separate 2021 Water Quality Table (on the reverse side of this page)

For information regarding the City's water conservation program, ways to conserve, and rebates, please contact the City's Water Conservation Hotline at (505) 955-4223.

Appendix C

**NMED List of
Potential Sources of
Contamination**

APPENDIX C: POTENTIAL SOURCES OF CONTAMINATION

Map Code	Land Use	Description	Contaminants of Concern*
<i>AGRICULTURAL LAND USE</i>			
AAP	Animal Processing or Rendering Plants	Commercial Operations/Waste Storage/Disposal Facility	Nitrates, Pathogens, Organic/Inorganic Chemicals
ACS	Farm/Ranch Agrochemical Storage Facilities or Sites	Farm/Ranch Storage Site	Pesticides, Herbicides, Fertilizers
ADC	Drainage Canals, Ditches or Acequias-Unlined, Wells (Private, Stock wells, and Irrigation)	Runoff and Infiltration	Pesticides, Herbicides, Fertilizers, Nitrate, Pathogens
ADF	Livestock Production-Dairies	Livestock Wastes, Runoff and Infiltration	Nitrate, Phosphate, Chloride, Pathogens, Pharmaceuticals
AFL	Farming-Irrigated Croplands	Runoff and Infiltration	Nitrate, Ammonia, Chloride, Fertilizers, Pesticides, Herbicides
AFL	Confined Animal Feeding Operations	Runoff and Infiltration of Livestock Wastes	Nitrate, Phosphate, Chloride, Pathogens, Pharmaceuticals
AFM	Farm Machinery Storage or Maintenance Areas	Farm Machinery Maintenance Areas	Automotive Wastes, Welding Wastes, Fuels, Oils, Lubricants
AFN	Farming-Non-irrigated Croplands	Runoff and Infiltration Operations	Nitrate, Ammonia, Chloride, Fertilizers, Pesticides, Herbicides
AHC	Horticultural/Gardens/Nurseries/Greenhouses	Operations Storage	Pesticides, Herbicides, Fertilizers
AHF	Hay/Feed and Veterinary Product Storage Sites	Farm/Ranch Storage Site	Fungicides, Pesticides, Nitrates, Pharmaceuticals
AMA	Manure or Livestock Waste-Land Application Areas	Land Application of Manure	Nitrate, Ammonia, Phosphate, Chloride, Pathogens, Pharmaceuticals
AMS	Manure or Livestock Waste-Storage Facilities or Sites	Lined and Unlined Manure Storage Facilities	Nitrate, Ammonia, Phosphate, Chloride, Pathogens, Pharmaceuticals
AOA	Livestock Production-Other Animal	Livestock Wastes	Nitrate, Ammonia, Phosphate, Chloride, Pathogens, Pharmaceuticals
APF	Livestock Production -Poultry	Poultry Sewage Wastes	Nitrate, Ammonia, Phosphate, Chloride, Pathogens, Pharmaceuticals
APP	Processing Plants or Mills- Hay, Grain, or Produce	Operations, Waste Storage and Disposal	Organic/Inorganic Chemicals, Lubricants, Machinery Wastes
ARL	Animal Rangeland	Rangeland and Pasturage	Nitrate, Ammonia, Phosphate, Chloride, Pesticides, Pathogens
ASC	Bulk Agrochemical Storage-Petroleum/Chemicals	Storage-500 gallons or more	Petroleum Products, Inorganic/Organic Chemicals
ASF	Bulk Agrochemical Storage-Fertilizers	Feed Mill, Agricultural Co-op	Fertilizers
ASG	Bulk Agricultural Product Storage-Grain or Produce	Grain Elevator, Warehouse or Storage Site	Fungicides, Oils, Lubricants, Machinery Wastes
ASH	Livestock Production -Sheep	Livestock Sewage Wastes	Nitrate, Ammonia, Phosphate, Chloride, Pathogens, Pharmaceuticals

APPENDIX C: POTENTIAL SOURCES OF CONTAMINATION

Map Code	Land Use	Description	Contaminants of Concern*
ASP	Bulk Agrochemical Storage-Pesticides	Feed Mill, Agricultural Co-op	Pesticides
ASW	Livestock Production -Swine	Livestock Sewage Wastes	Nitrate, Ammonia, Phosphate, Chloride, Pathogens, Pharmaceuticals
COMMERCIAL LAND USE			
CAI	Airports (Active/Inactive)	Operations/Maintenance/Construction	Aircraft Fuels, Deicers, Batteries, Diesel Fuel, Chlorinated Solvents, Automobile Wastes, Heating Oil, Building Wastes, Sewage, Septage, Pathogens, Pesticides, Fertilizers
CAR	Automotive Repair Shops	Operations/Maintenance/Storage	Solvents, Metals, Automotive Waste, Oils, Gasoline
CAW	Abandoned/Improperly Closed Wells	Storage/Disposal	Organic/Inorganic Chemicals, Brines, Waste Oil, Treated Sewage Effluent, Storm Water Runoff, Process Waste Water, Metals, Pathogens, Nitrate
CBS	Automotive Body Shops	Operations/Maintenance	Paints, Solvents
CBY	Boat Yards/Marinas	Operations/Maintenance	Gasoline, Diesel Fuels, Septage, Wood Treatment Chemicals, Paints, Varnishes, Automotive Wastes, Solvents, Building Wastes
CCG	Camp Grounds - Unsewered	Untreated Domestic Wastewater	Septage, Gasoline, Pesticides, Organic/Inorganic Chemicals
CCE	Cemeteries	Operations/Maintenance	Leachate, Arsenic, Pesticides, Fertilizers
CCW	Car Washes	Unsewered, Without Total Recycling System	Soaps, Detergents, Waxes, Organic/Inorganic Chemicals
CCY	Construction/Demolition Yard/Staging Areas	Storage/Maintenance	Gasoline, Diesel Fuels, Wood Treatment Chemicals, Paints, Varnishes, Automotive Wastes, Solvents, Building Wastes, Explosives, Oil
CDC	Dry Cleaning Shops	Operations/Maintenance	Chlorinated Solvents, Organic/Inorganic Chemicals
CFA	Fuel Storage Tanks-Above Ground	Non-Service Station Tanks	Gasoline, Diesel Fuel, Organic/Inorganic Chemicals
CFB	Fuel Storage Tanks-Below Ground	Non-Service Station Tanks	Gasoline, Diesel Fuel, Organic/Inorganic Chemicals
CFC	Funeral Homes/Crematories	Operations	Biohazard Waste, Organic/Inorganic Chemicals, Septage
CFR	Furniture Repair/Refinishing	Operations	Paints, Solvents, Organic Chemicals
CGC	Golf Courses	Operations/Maintenance	Fertilizers, Pesticides, Gasoline, Automotive Wastes, Batteries, Septage
CHG	Historic Gasoline Service Stations	Above/Below Ground Storage Tanks/Operations	Gasoline, Oils, Solvents, Automotive Wastes, Septage
CHM	Home Manufacturing	Operations/Maintenance/Storage	Paints, Solvents, Organic/Inorganic Chemicals

APPENDIX C: POTENTIAL SOURCES OF CONTAMINATION

Map Code	Land Use	Description	Contaminants of Concern*
CHN	Hospitals/Nursing Homes - Unsewered	Wastewater Discharge to Septic Tank/Leach Field	Biohazard Waste, Organic/Inorganic Chemicals, Septage, Radiological Waste
CHW	Hardware/Lumber/Parts Stores	Operations/Storage	Pesticides, Fertilizers, Organic/Inorganic Chemicals
CLD	Laundromats - Unsewered	Wastewater Discharge	Detergents, Soaps, Septage
CPP	Photo Processing Laboratories	Operations/Storage	Organic/Inorganic Chemicals
CPR	Printing Shops	Operations/Storage	Solvents, Inks, Dyes, Organic/Inorganic Chemicals
CPS	Paint Stores	Storage	Paint, Solvents
CRL	Research Laboratories	Operations/Maintenance/Storage	Biohazard Waste, Radiological Materials and Waste, Metals, Organic/Inorganic Chemicals
CRY	Railroad Yards and Tracks	Operations/Maintenance/Storage	Diesel Fuel, Pesticides, Organic/Inorganic Chemicals
CSS	Gasoline Service Stations	Above/Below Ground Storage Tanks/Operations	Gasoline, Oils, Solvents, Automotive Wastes, Septage
CST	Commercial Septic Tanks/Leachfields/Leachpits/Cesspools	Storage/Disposal	Septage, Septic Effluent, Pathogens, Nitrate, Ammonia, Chloride
CVS	Veterinary Facilities	Operations/Maintenance	Biohazard Waste, Organic/Inorganic Chemicals, Septage, Radiological Waste
INDUSTRIAL LAND USE			
IAS	Asphalt Plants	Production/Storage	Petroleum Derivatives
ICC	Cement/Concrete Plants	Operations/Maintenance/Storage	Organic/Inorganic Chemicals, Oils, Natural Gas, Propane,
ICE	Communications Equipment Manufacturers	Production/Maintenance/Storage	Solvents, Organic/Inorganic Chemicals, Oils, Waste Oils, Metals
ICL	Chemical Landfills	Storage/Disposal	Leachate of Organic/Inorganic Chemicals, Acids, Bases, Metals, Solvents, Gasoline, Diesel Fuel, Pesticides, PCB's
ICP	Chemical Production Plants	Production/Maintenance/Storage	Organic/Inorganic Chemicals, Solvents, Oils, Metals
IEE	Electronic/Electrical Equipment Manufacturers	Production/Maintenance/Storage	Solvents, Organic/Inorganic Chemicals, Oils, Waste Oils, Metals, Acids, Bases
IFM	Furniture and Fixture Manufacturers	Production/Maintenance/Storage	Paints, Solvents, Organic/Inorganic Chemicals
IFW	Foundry/Smelting Plants	Production/Maintenance/Storage	Organic/Inorganic Chemicals, Metals, Solvents, Acids, Bases, Oils

APPENDIX C: POTENTIAL SOURCES OF CONTAMINATION

Map Code	Land Use	Description	Contaminants of Concern*
IGO	Gas/Oil Wells-Active/Abandoned/Test, Wells Geothermal and Industrial	Production	Oil, Natural Gas, Organic/Inorganic Chemicals, Acids, Bases, Drilling Wastes
IHD	Historic Dumps/Landfills	Storage/Disposal	Leachate of Organic/Inorganic Chemicals, Acids, Bases, Metals, Solvents, Gasoline, Diesel Fuel, Pesticides, PCB's, Automotive Wastes
IHM	Historic Mining Operations	Production Waste/Storage	Metals, Inorganic Chemicals, Acids, Bases, Radiological Materials
IMI	Primary Metal Industries	Steel/Metal Works, Rolling/Wire Mills	Metals, Inorganic Chemicals, Acids, Bases
IMO	Mining Operations (Surface And Subsurface)	Production Waste/Storage	Metals, Inorganic Chemicals, Acids, Bases, Radiological Materials
IMP	Metal Plating/Processing Facilities	Operations/Maintenance/Storage	Organic/Inorganic Chemicals, Acids, Bases, Metals
IMW	Machine/Metal Working Shops	Operations/Maintenance/Storage	Cutting Oils, Metals, Solvents, Organic/Inorganic Chemicals, Detergents
IOG	Oil/Gas Pipelines	Transport	Oils, Gasoline, Volatile Organic Chemicals, Natural Gas, Propane
IPL	Plastics Manufacturing/Molder	Operations/Maintenance/Storage	Solvents, Oils, Organic/Inorganic Chemicals, Acids, Bases
IPM	Paper Mills	Operations/Maintenance/Storage	Acids, Metals, Organic/Inorganic Chemicals
IPP	Petroleum Production/Refining/ Bulk Plants	Operations/Maintenance/Storage	Oils, Gasoline, Diesel Fuels, Organic Chemicals, Oil Drilling/Refining Wastes
IPU	Public Utilities	Power Generating Stations	PCB's, Solvents, Diesel Fuel, Propane, Natural Gas, Oil, Acids, Bases, Organic/Inorganic Chemicals, Metals
IRG	RCRA Waste Generators - Other	Storage/Disposal	Organic/Inorganic Chemicals, Solvents, Metals, PCB's, Acids, Bases, Radiological Materials
IRW	Radioactive Waste Disposal Sites	Storage/Disposal	High and Low Level Radiological Wastes
ISD	Sumps/Dry Wells	Storage/Disposal	Storm Water Runoff, Organic/Inorganic Chemicals, Solvents, Process Wastewater, Pesticides, Oils
ISF	Superfund Sites	Storage/Disposal	Organic/Inorganic Chemicals, Solvents, Metals, PCB's, Acids, Bases, Radiological Materials
ISM	Primary Wood Industries	Saw Mills, Planers, Wood Treatment	Organic/Inorganic Chemicals, Metals, Solvents
IST	Stone, Tile, Glass Manufacturing	Operations/Maintenance/Storage	Solvents, Oils, Metals, Organic/Inorganic Chemicals
ITS	Treatment/Storage/Disposal Ponds/Lagoons	Treatment/Storage	Organic/Inorganic Chemicals, Metals, Acids, Bases, Sewage
ITT	Transport/Distribution, Warehouses, Truck Terminals	Operations/Maintenance/Storage	Gasoline, Diesel Fuels, Automotive Wastes, Metals, Organic/Inorganic Chemicals, Acids, Bases
IUD	Unregulated Dumps/Excavated Sites, Snow Dumps	Storage/Collection/Disposal	Organic/Inorganic Chemicals, Automotive Wastes, Oil, Gasoline, Runoff from Adjacent Sites

APPENDIX C: POTENTIAL SOURCES OF CONTAMINATION

Map Code	Land Use	Description	Contaminants of Concern*
IUI	Underground Injection (UIC) Wells	Storage/Disposal	Organic/Inorganic Chemicals, Brines, Waste Oil, Treated Sewage Effluent, Storm Water Runoff, Process Wastewater, Metals, Pathogens, Nitrate
IUR	Utility/Transportation Right of Ways, major transportation corridor	Power Lines, Gas/Oil Pipelines	Pesticides, Gasoline, Diesel Fuels, Automotive Wastes, Organic/Inorganic Chemicals, PCB's, Sewage, Metals, Storm water Runoff, Pathogens
MUNICIPAL/RESIDENTIAL LAND USE			
MHM	Highway/Road Maintenance Yards	Operations/Maintenance/Storage	Gasoline, Diesel Fuels, Solvents, Road Salt, Asphalt, Pesticides, Automotive Wastes,
MHR	Highway Rest Areas	Operations/Maintenance/Storage/Disposal	Automotive Wastes, Septage, Gasoline, Diesel Fuels, Pesticides
MIN	Incinerators - Commercial or Municipal	Operations/Disposal	Metals, Organic/Inorganic Chemicals
MLF	Municipal Waste Landfills	Storage/Disposal	Leachate, Organic/Inorganic Chemicals, Pesticides, Metals, Oils
MMF	Military Facilities	Operations/Maintenance/Storage/Disposal	Gasoline, Aircraft Fuels, Diesel Fuels, Automotive Wastes, Metals, Organic/Inorganic Chemicals, Explosives, Radiological Materials, Pesticides, Sewage/Septage, Oils, Solvents, Fertilizers, Batteries, Deicers
MMP	Motor Pools	Operations/Maintenance/Storage/Disposal	Gasoline, Diesel Fuel, Oils, Waste Oils, Automotive Waste, Batteries, Metals
MPS	Sewage Pump Stations	Operations/Storage	Sewage, Pathogens, Nitrate, Metals, Organic/Inorganic Chemicals
MPW	Polluted Surface Water Sources	Naturally Occurring/Anthropogenic	Sewage, Pathogens, Nitrate, Metals, Acids, Bases, Organic/Inorganic Chemicals
MRF	Recycling Facilities	Operations/Storage/Disposal	Metals, Organic/Inorganic Chemicals, Pesticides, Automotive Wastes, Oils
MSC	Schools - Unsewered	Wastewater Discharge to Septic Tank/Leach Field	Septage, Septic Effluent, Pathogens, Nitrate, Ammonia, Chloride
MSD	Storm Drainage Collection Areas or Outlets- Unlined	Storage/Disposal	Runoff, Pesticides, Fertilizer, Pathogens, Nitrate, Phosphate, Oil
MSL	Sewer Lines	Transport	Sewage, Pathogens, Nitrate, Metals, Organic/Inorganic Chemicals
MSP	Wastewater Septage/Retention Ponds (Unlined/Lined)	Storage/Disposal	Sewage Effluent, Nitrate, Ammonia, Pathogens, Organic/Inorganic Chemicals, Pesticides
MSS	Sewage Effluent/Sludge Land Application Areas	Storage/Disposal	Sewage/Sewage Sludge, Nitrate, Pathogens, Organic/Inorganic Chemicals, Metals
MST	Sewage Treatment Plants	Operations/Maintenance/Storage/Disposal	Sewage, Sewage Sludge, Metals, Pathogens, Organic/Inorganic Chemicals
MSW	Solid Waste Transfer Stations	Storage/Disposal	Metals, Organic/Inorganic Chemicals, Pesticides, Automotive Wastes, Oils
MWP	Water Treatment Plants and Water Supply Wells	Operations/Maintenance/Storage/Disposal	Organic/Inorganic Chemicals, Chlorine

APPENDIX C: POTENTIAL SOURCES OF CONTAMINATION

Map Code	Land Use	Description	Contaminants of Concern*
RSF	Single Family Residences - Unsewered	Wastewater Discharge to Septic Tank/Leach Field or Cesspool	Septage, Pathogens, Nitrate, Ammonia, Chloride, Heavy Metals, Household Pesticides, Herbicides, Cleaning Agents and Solvents, Fuels

* Contaminants of Concern include substances that are commonly, but not always, associated with the Contaminant Source listed in column 2

Appendix D
Sampling Schedule from
Drinking Water Watch

New Mexico Environment Department		UOCP Operator Lookup		Drinking Water Program	
County Map of NM		Water System Search		Help	
Water System Detail Information					
Water System No.:	NM3502826	Federal Type:	C		
Water System Name:	BUCKMAN REGIONAL WATER TREATMENT PLANT	Federal Source:	SW		
Principal County Served:	SANTA FE	System Status:	A		
Principal City Served:	SANTA FE	Activity Date:	01-01-2011		

[Expanded Sample Schedules / FANLs / Plans](#)

Routine TCR Sample Schedules		
Begin/End Date	Seasonal Period	Requirements

RP TCR Schedules From  To  

Repeat TCR Sample Schedules			
Begin Date	End Date	Requirements	Original Sample ID/Date

GWR Triggered Source Sample Schedules (Last 6 Months)				
Facility	Schedule	Begin Date	End Date	Initial MP Begin Date

GWR Follow-up Triggered Source Sample Schedules (Last 6 Months)			
Facility	Schedule	Begin Date	End Date

Group Non-TCR Sample Schedules					
Facility	Begin End Date	Seas.	Init. MP Begin Dt	Req's	Analyte Group
02826005	01-01-2011 Continuous		01-01-2011	1 RT/YR	HM - HEAVY METALS
02826005	01-01-2014 Continuous		01-01-2014	1 RT/3Y	NRAD - NEW RAD RULE
02826005	01-01-2014 Continuous		01-01-2014	2 RT/3Y	RSOC - REGULATED SOCS
02826005	01-01-2012 Continuous		01-01-2012	1 RT/YR	VOCL - VOLATILE ORGANICS

Individual Non-TCR Sample Schedules					
Facility	Begin End Date	Seas	Init MP Begin Dt	Req.	Analyte

New Mexico Drinking Water Watch

02826005	01-01-2011 Continuous		01-01-2011	1 RT/YR	1024-CYANIDE
02826005	01-01-2011 Continuous		01-01-2011	1 RT/YR	1025-FLUORIDE
02826005	01-01-2012 Continuous		01-01-2012	1 RT/YR	1038-NITRATE-NITRITE
02826005	01-01-2014 Continuous		01-01-2014	1 RT/3Y	4100-GROSS BETA PARTICLE ACTIVITY
02826005	01-01-2012 Continuous		01-01-2012	1 RT/YR	4102-TRITIUM
02826005	01-01-2012 Continuous		01-01-2012	1 RT/YR	4174-38-STRONTIUM-90

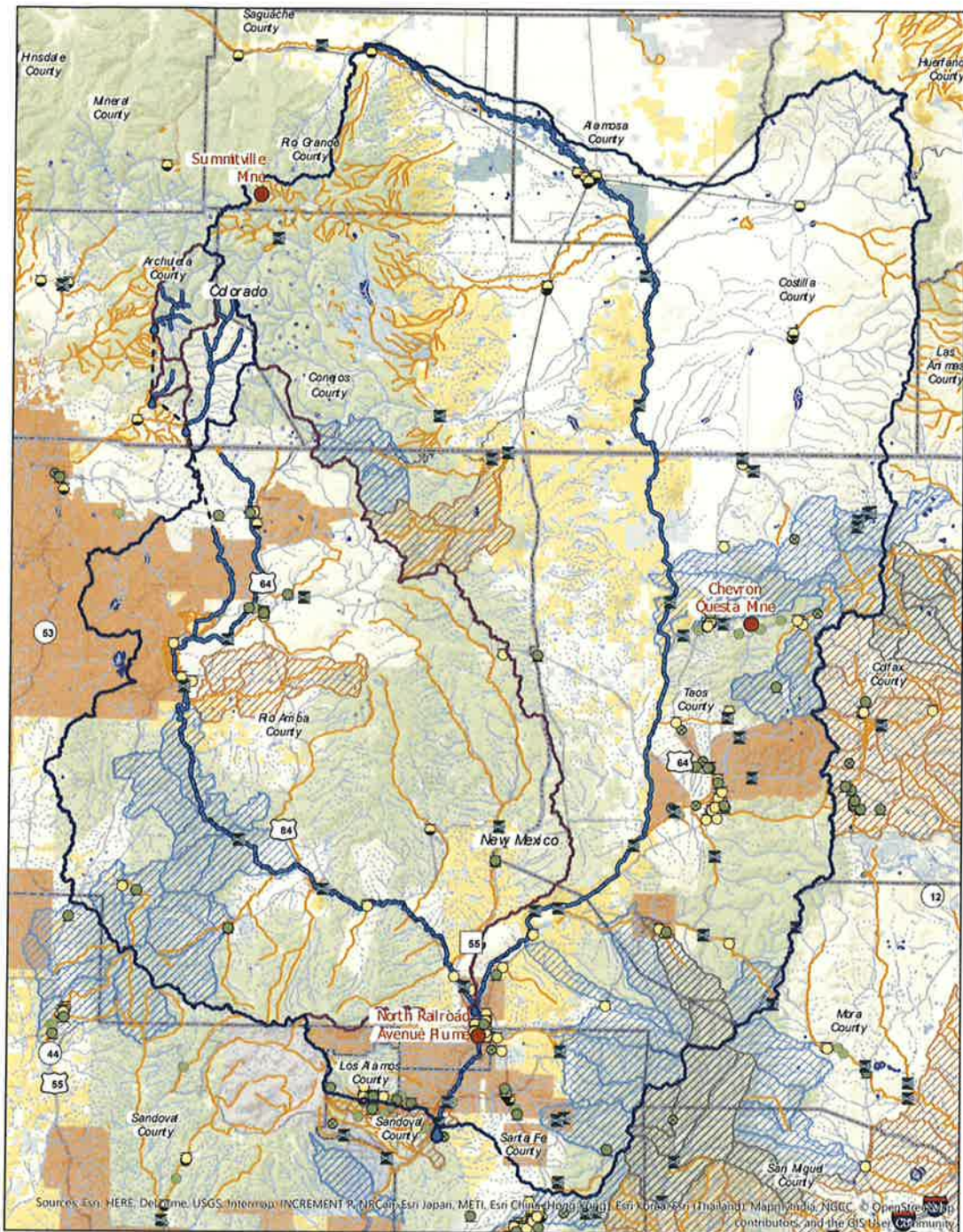
Facility Analyte Levels(FANLS)

Site	Analyte	Level Type	Value	Units	Days/Month	Samples/Day	Begin Date	End Date	MDBP Type
02826002	0100	MAX	1	NTU	31	6	01-01-2011	Continuous	MAXT
02826002	0100	95P	0.3	NTU	31	6	01-01-2011	Continuous	95PT
02826002	0999	MIN	0.2	MG/L	31	24	01-01-2011	Continuous	EPRD

Sample Plans

Rule	Analyte/Analyte Group	Eff. Begin	Eff. End	App. Date	For Comp.
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Appendix E
BDD Basin PSOCs Map



Buckman Direct Diversion Project Basin and Potential Sources of Contamination

Publication date: Augst 21st, 2017. Data sources: USEPA, NMENV, CO DNR, CP DPHE, USGS, BLM. Cartographer: Zachary L. Stauber.

Scale 1:800,000 0 5 10 20 Miles

<p>Legend</p> <ul style="list-style-type: none"> Buckman Direct Diversion Project San Juan Chama Diversion Points Superfund Sites Basin for Buckman Direct Diversion Project Basin for San Juan Chama Diversion Project USGS Gages Petroleum Storage Tank Facilities Aboveground Storage Tank Facilities Underground Storage Tank Facilities Leaking Underground Storage Tank Sites NM NPDES Permits Active NPDES Permits Nonactive NPDES Permits Rio Grande 	<p>San Juan Chama</p> <ul style="list-style-type: none"> Pipeline Stream <p>Impaired Waters 2016</p> <ul style="list-style-type: none"> Impaired Streams 2016 Impaired Lakes 2016 <p>NM Nonpoint Source Program</p> <ul style="list-style-type: none"> Priority Watersheds - Implementation Priority Watersheds - Protection <p>National Hydrography Dataset Lines</p> <ul style="list-style-type: none"> Connector Canal/Ditch 	<p>Waterbodies</p> <ul style="list-style-type: none"> Intermittent Lake Perennial Lake High Water Stage Intermittent Lake Average Water Stage Intermittent Lake Normal Pool Stage Perennial Lake Aquaculture Reservoir Disposal Reservoir Evaporator Reservoir <p>Waterbodies Feature Code</p> <ul style="list-style-type: none"> Intermittent Stream Perennial Stream Intermittent Siphon Artificial Path 	<p>Treatment Reservoir</p> <ul style="list-style-type: none"> Treatment Reservoir Wetland <p>BLM Surface Ownership</p> <ul style="list-style-type: none"> Bureau of Land Management Bureau of Reclamation Department of Agriculture Department of Defense Department of Energy Fish and Wildlife Service Forest Service National Park Service Other Federal Agency Private State State Game and Fish State Park Tribal
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Alternate Presentation



Date: March 31, 2023
To: Buckman Direct Diversion Board
From: Monique Maes, Contracts Administrator
Via: Rick Carpenter, Facilities Manager
Subject: Request to Award RFP # 23/28/P, PSA, and to Utilize Settlement Funds

ITEM:

Request for approval to award RFP # 23/28/P, Engineering Services for Redesign and Rehabilitation for BDD to the recommended Proposer, Wright Water Engineers, Inc.

1. Approval request for Professional Service Agreement ("PSA") for a total amount of \$250,000.00 plus NMGRT, for the remainder of FY 2023 and for FY 2024 to Wright Water Engineers, Inc. to provide engineering services for the Buckman Direct Diversion and
2. Request for authorization to utilize Settlement Funds for this expense.

BACKGROUND:

On March 10, 2023 the Evaluation Committee met and evaluated proposal submissions from three (3) engineering service Offerors, responding to RFP # 23/28/P, titled, Re-design and Rehabilitation Plan for BDD. The Evaluation Report is attached providing a recommendation.

In compliance with the evaluation criteria set forth in the RFP, it was determined that the proposal from Wright Water Engineers, Inc. received the highest score. Upon Board approval, the award term will be a four-year contract and will be extended in annual increments at the start of each fiscal year, based on budget projections and project development. The contract will begin once the contract is fully executed, and the budget will be expensed as we are billed for the duration of the project. Currently, we estimate that the total four-year contract amount is not to exceed \$250,000.00 plus NMGRT, however this is only an estimate of initial completion in the first year.

In the coming year, we will assess the budget and progress of the development in this Redesign and Rehabilitation Plan and amend the second year of the contract if needed. We are also requesting to access the Settlement Funds to cover this expense in full as this is the first step related to the repairs that are needed.



The RFP can be found in the city of Santa Fe Procurement Library at:

<https://santafenm.gov/solicitations/engineer-for-redesign-and-rehabilitation-plan-for-bdd-23-28-p?category=request-for-proposal>

Action Requested:

Approve recommendation for RFP # 23/28/P, PSA with WWE in the amount of \$250,000.00, and authorize the use of the Settlement Funds to cover this expense in full.

Approval:

Approved by BDDDB April 6, 2023

BDD Chair



City of Santa Fe, New Mexico

200 Lincoln Avenue, P.O. Box 909, Santa Fe, N.M. 87504-0909
www.santafenm.gov

Alan Webber, Mayor

Councilors:

Signe I. Lindell, Mayor Pro Tem, District 1
Renee Villarreal, District 1
Michael J. Garcia, District 2
Carol Romero-Wirth, District 2
Lee Garcia, District 3
Chris Rivera, District 3
Jamie Cassutt, District 4
Amanda Chavez, District 4

DATE: March 23, 2023

TO: Travis Dutton-Leyda, Chief Procurement Officer
City of Santa Fe

FROM: Monique M. Maes – Procurement Manager for BDD, Contracts Administrator

SUBJECT: Evaluation Committee Report, RFP # 23/28/P
-Engineer for Redesign and Rehabilitation Plan for BDD

SUMMARY

In accordance with the Buckman Direct Diversion's ("BDD's") Request for Proposals for Engineer for Redesign and Rehabilitation Plan, RFP # 23/28/P, issued 01/24/23, as amended, this report relates the designation of the preferred proposer. Proposals in response to the RFP, were received on time, February 28, 2023, from three (3) Offerors: Advanced Engineering and Environmental Services, LLC ("AE2S"); AECOM Technical Services, Inc. ("AECOM"); and Wright Water Engineering, Inc ("WWE").

An evaluation of the three proposals has been conducted by the Evaluation Committee in accordance with the evaluation criteria set forth in the RFP, 23/28/P. The Evaluation Committee Members consisted of the following individuals:

- Maya Martinez, Public Utilities Fiscal Administrator, City of Santa Fe
- Rick Carpenter, BDD Facilities Manager
- Nancy Long, President, at Long Komer and Associates P.A.

It is the Evaluation Committee's recommendation that Wright Water Engineering, Inc. ("WWE") be the designated preferred proposer as their proposal was the most advantageous to the Buckman Direct Diversion based on the requirements of the RFP.

Summary of Evaluation, Committee Activity

- January 24, 2023: RFP was issued
 - January 25, 2023: Amendment # 1 was issued,
 - February 1, 2023; Amendment #2, was issued,
 - February 9, 2023: Pre-proposal conference was held
 - February 10, 2023: Amendment #3 was issued
 - February 16, 2023: Site visit was conducted
 - February 17, 2023: Written questions were posted
 - February 21, 2023: Site visit questions were Posted
 - March 1, 2023: RFP # 23/28/P, -Instruction Forms and Confidentiality Agreements were signed and submitted to the Purchasing Office.
 - March 2, 2023: Via Zoom, the selection committee met with representation from the Central Purchasing Office, Representative; Raymond ‘Scott’ Gunter, for a pre-evaluation meeting and the committee was provided with an instruction overview.
 - March 3, 2023: Central Purchasing Office sent out technical proposals, and Procurement Manager forwarded that to the Evaluation Committee members for their review.
 - March 3, 2023: Procurement Manager sent out the submitted references and scoresheets for Responder #1 AE2S, Responder, #2 AECOM, and Responder #3 WWE, to the Evaluation Committee Members, and advised them to review each proposal individually and to complete the three (3) separate scoresheets for each proposal.
 - March 10, 2023: Procurement Manager, Purchasing Representative, and Selection Committee met to discuss the technical proposal for AE2S, AECOM, and WWE at the location site of:
 - Buckman Direct Diversion
 - 341 Caja Del Rio Rd
 - Santa Fe, NM 87506.
 - On March 10, 2023, the Selection Committee concluded its decisions.
 - March 10, 2023: All scoresheets and notes were submitted and incorporated into a draft proposal evaluation report, then final report (this report) was created.
-

IV. SPECIFICATIONS

A. DETAILED SCOPE OF WORK

1. The selected engineer will review existing as-built design and construction plans for the BDD Facility. Review existing operations and performance of the BDD Facility. Conduct detailed inspections of the BDD Facility. Conduct in-depth interviews with BDDDB operations and maintenance staff.
2. The selected engineer will review and provide a comprehensive preliminary report of existing conditions of the Rio Grande River. This report will include but not be limited to:
 - A. Analysis and calculation of sediment fluctuation.
 - i. Calculation of mass balance on sediment removal from the BDD Facility since inception of the BDD project which began in 2011.
 - ii. Quantification of the sediment that entered the raw water diversion structure at the river.
 - iii. Quantification of the amount of sediment that was removed by the BDDDB Facility sediment removal system and the amount of sediment that eventually made its way into the pumps at Booster Stations 1A and 2A, and then to the water treatment plant. Evaluation of whether that sediment load changed through time, if so, the quantity.
 - iv. Evaluation of the quantity of river-derived sediment taken to the landfill, and whether the amount changed overtime, and if so, the quantity.
3. The report will identify and provide analysis of the current challenges to reach successful, optimal, performance and operation of the BDD Facility, with special emphasis on Rio Grande River conditions and their impacts on the BDD Facility.
4. The report will identify the root problems that prevent optimal performance and operations of the BDD Facility.
5. Develop a conceptual redesign plan to optimize performance and operation of the BDD Facility.
6. Develop preliminary budgets and schedules for redesign and reconstruction of the BDDDB Facility. Recommend planning and scheduling methods to minimize shutdowns to the BDD Facility.
7. Recommend redesign and reconstruction priorities.
8. Identify, analyze and recommend project delivery methods.
9. Assist with development of a redesign and reconstruction procurement plan, including but not limited to a draft construction procurement based on result findings. The procurement plan will include, but will not be limited to, a detailed scope of work for the redesign and reconstruction and a project implementation plan from certified licensed engineer specializing in water diversion projects. Assist with BDDDB procurement efforts.
10. Provide ongoing redesign and reconstruction oversight and inspection services as needed and requested for review by the BDD Facilities Manager.
11. Assist with future procurement efforts of design and/or construction contracts for example, based on re-design recommendations and specified manufacturing conditions.
12. The engineer will continue to provide recommendations and guidance to the BDD Facility's Manager as tasks are completed and invoiced based on the below cost response, Appendix C, that will be submitted with the RFP.

TECHNICAL SPECIFICATIONS

B.1. Organizational Experience (400 Total Points)

Organizational Experience

Offeror must:

a. Provide at least three (3) detailed descriptions of similar scopes of work (SOW) as listed in the RFP. The description should highlight experience with local government bodies, municipalities, state and or private sector. The narrative must thoroughly describe how the Offeror has supplied expertise for similar completed SOW's and must include the extent of their experience, expertise and knowledge as a provider of development of analysis, design and construction of water diversion projects, including experience as an engineer in a redesign and rehabilitation plans and with design and construction oversight. Any detailed descriptions in analysis of design and construction provided to the private sector will also be considered.

b. Provide a detailed resume/bio of all key personnel Offeror proposes to use in performance of the resulting contract, should Offeror be awarded. Key personnel is identified as Subject Matter Experts or personnel as listed in the Cost Response (Appendix C) or other staff involved in the field of water analysis and design. Offeror must include key personnel education, work experience, relevant/applicable certifications/licenses.

B. EVALUATION FACTORS

1. B.1 Organizational Experience (as amended, maximum possible points awarded 400)

Points will be awarded based on the thoroughness and clarity of Offeror's response in this Section. The Evaluation Committee will also weigh the relevancy and extent of Offeror's experience, expertise and knowledge; and of personnel education, experience and certifications/licenses. In addition, points will be awarded based on Offeror's candid and well-thought-out response to successes and failures, as well as the ability of the Offeror to learn from its failures and grow from its successes.

B.1 Evaluation of Organizational Experience Point Summary:

Offeror	AE2S	AECOM	WWE
Experience Total	250	333.33	376.66

Offeror #1 AE2S

Of maximum score rating of 400 points, Offeror #1, AE2S, received an average score rating of **250** points. AE2S proposed a team of 8 people, and in addition has identified the following significant subcontractors and their roles:

Significant Subcontractors:

Layne (Collector wells)

West Consultants (Water Resources)

The Offeror's experience with the Pojoaque Basin appears directly relevant as to Rio Grande knowledge but not relatable in the design build and construction as to the facility itself. The experience cited appears more as a "prime consultant" installing collector wells with Layne hydrogeologists.

West Consultants, a partnership of AE2S, illustrated their role in the development of sediment transport models that were provided to the Cochiti Baseline Study. Although it appears as applicable to sedimentation analysis, it does not clearly demonstrate actualized results at a water treatment facility.

The most directly relevant experience was for the city of Bismarck in which they describe, "a successful implementation of horizontal collector well technology," however, this is for a different type of river sediment types, and sediment levels (Missouri) as well as other factors.

The Majority of AE2S's organizational experience lacked clarity in how the Offeror has supplied expertise for similar completed SOW's. As stated above their experience related to the scope of work was not clearly found on their project descriptions.

Offeror #2 AECOM

Of a maximum score rating of 400 points, Offeror #2, AECOM, received an average score rating of **333.33** points. AECOM proposed a team of 10 individuals, and has identified the following significant Subcontractors and their roles:

Significant Subcontractors/Peer Review Team:

Mueller Construction Services (Construction, Scheduling, Cost Estimating)

Robert Ettema, PhD, PE (Hydraulics)

Steve Higinbotham, PE (Hydraulic Structures)

Shelby Eckols, PE (Water Treatment)

Completed in 2006, Project 1: Albuquerque Diversion Dam, was the most relevant to experience with Rio Grande river conditions. "As a part of the design AECOM conducted numerical flows and sediment transport modeling to evaluate the flow and sediment issues in association with the construction and operation of the proposed diversion structure," stated in their proposal.

Project 2: Albuquerque Bernalillo County Water Utility Authority (ABCWUA) On-Call Engineering Services, is an on-call contract and not directly related to the SOW. As they describe their

project, "designing new automated debris screens on the existing structure and dewatering plan for silvery minnow bypass."

Project 6: Program Construction Manager for San Francisco Public Utilities Commission did demonstrate construction oversight experience. The listed Project Manager is also listed as managing a project for the "City of Santa Fe Utilities, Nichols and McClure Dam Rehabilitation, Santa Fe, NM." "Nichols Dam is designed for a pressurized conduit to allow for the installation of a hydropower turbine." -stated from the resume.

Project 5: was a rehabilitation project but it's not directly relevant to scope of work. Like this project and others, the relevancy to the sediment removal and diversion water treatment plant experience was lacking.

Offeror #3 WWE

Of a maximum score rating of 400 points, Offeror #3, Wright Water Engineering INC. ("WWE") received an average rating of **376.66** points. Wright Water Engineers, INC. (an employee-owned and operated civil engineering firm) proposed a team of 10 individuals and has not identified any significant subcontractors.

The relevancy of Wright Water Engineer's experience is unique through the work produced in evaluating the hydrology, hydraulics and geomorphology, as expert witnesses in litigation against the design builders of BDD. From their experience listed as Buckman Direct Diversion Investigation and Conceptual Design in their proposal they state "WWE developed a hydraulic model and evaluated tractive forces and sediment transport over a range of flows from low flows to large floods. Mr. Lorenz and Jeffrey Nelson evaluated issues with the diversion and treatment system caused by excessive sediment and helped develop conceptual designs that addressed the sediment load from the Rio Grande." WWE holds a significant level of knowledge related to the scope of work. They have conducted a high level of investigation and conceptual design.

The Offeror provided more than 3 detailed descriptions of similar scopes of work and facilities. As an example from their experience cited as "Rio Grande and Tributaries Hydrology, Hydraulics, and Sediment Transport Analysis," WWE provided expertise on hydrology and hydraulics and worked closely with scientist from the United States Department of Agricultural Research Service on sediment transport modeling." As a part of a team, WWE has experience in evaluating wildfire impacts on hydrology and sediment transport in the Los Alamos, NM area canyons.

TECHNICAL SPECIFICATIONS

Experience

B.1.C Rio Grande Experience (200 Total Points)

c. Describe any experience or direct knowledge of river diversion projects from the Rio Grande River that the organization has acquired over time. If Engineer has no experience or direct knowledge of the Rio Grande River please note.

Evaluation Factors:

B.1.c Points will be awarded based on the Offeror's experience and direct knowledge of Rio Grande River conditions.

B.1.c Evaluation of Rio Grande River Experience Point Summary:

Offeror	AE2S	AECOM	WWE
Rio Grand River Experience Total	66.66	125	200

Offeror #1 AE2S

66.66 The Subcontractor Layne in the proposal has experience with the Rio Grande in regard to the Pojoaque Basin, but this experience was not at the time for a water treatment facility. Also, the experience noted in the Alameda project is limited. Their proposal states, "The site is located adjacent to the Rio Grande constructed as a riverbank filtration system to utilize surface water." Other than the location of the project, their experience and direct knowledge to the Rio Grande was not clearly detailed. AE2S relation of the Rio Grande is limited to a contractor installing well systems, such as the Alameda Reuse Diversion.

Offeror #2 AECOM

125 One project, initiated in 2003, gave a good description of the design of an Albuquerque project, describing the gates and intake structure. Their proposal states they, "conducted numerical flows and sediment transport modeling to evaluate the flow and sediment issues." But their role or the results of their role in the project is not fully detailed.

Offeror #3 WWE

200 Wright Water Engineers, Inc. has extensive knowledge of the Rio Grande River and its sediment issues from its expert work for the BDD litigation. From their proposal, "the team evaluated the hydrology, hydraulics, and geomorphology of the Rio Grande in the vicinity of the diversion." Not only this but WWE has worked on the geomorphology, hydrology, of the Rio Grande and conducted sediment transport studies of the Rio Grande since the early 2000's, as sited from their Rio Grande and Tributaries Hydrology, Hydraulics, and Sediment Transport Analysis.

B.2. Organizational References (300 Total Points)

Offeror must provide a list of a minimum of three (3) references from similar projects/programs performed for private, city, state, or large local government clients within the last three (3) years.

Offeror shall include the following Business Reference information as part of its proposals:

- a) Client name;
- b) Project description;
- c) Project dates (starting and ending);
- d) Staff assigned to reference engagement that will be designated for work per this RFP; and
- e) Client project manager name, telephone number, fax number and e-mail address.

Offeror is required to submit APPENDIX E, Organizational Reference Questionnaire (“Questionnaire”), to the business references it lists. **The business references must submit the Questionnaire directly to the designee identified in APPENDIX E. The business references must not return the completed Questionnaire to the Offeror.** It is the Offeror’s responsibility to ensure the completed forms are submitted on or before the date indicated in Section II. A, Sequence of Events, for inclusion in the evaluation process.

Organizational References that are not received or are not complete, may adversely affect the Offeror’s score in the evaluation process. Offerors are encouraged to specifically request that their Organizational References provide detailed comments.

Evaluation Factors:

Points will be awarded based upon an evaluation of the responses to a series of questions on the Organizational Reference Questionnaire (Appendix E). Offeror will be evaluated on references that show positive service history, successful execution of services and evidence of satisfaction by each reference. References indicating significantly similar services/scopes of work and comments provided by a submitted reference will add weight and value to a recommendation during the evaluation process. Points will be awarded for each individual response up to 1/3 of the total points for this category. Lack of a response will receive zero (0) points.

The Evaluation Committee may contact any or all business references for validation of information submitted. If this step is taken, the Procurement Manager and the Evaluation Committee must all be together on a conference call with the submitted reference so that the Procurement Manager and all members of the Evaluation Committee receive the same information. Additionally, the City reserves the right to consider any and all information available to it (outside of the Organizational Reference information required herein), in its evaluation of Offeror/Respondent/Respondent responsibility per Section II.C.18.

B.2 Evaluation of References Point Summary:

Offeror	AE2S	AECOM	WWE
Reference Points Total	241.66	191.66	300

Offeror #1 AE2S

241.66 There were two References received for AE2S, one from Provo River Water Users Association and the other from Chippewa Cree Construction. Comments were detailed and scored AE2S well. The third reference for West subcontractor, did not provide many comments.

Offeror #2 AECOM

191.66 Excellent references from (ABCWUA) but the principal representatives listed in the reference are not listed in the team organization chart for this project. The same is true for the city of Austin's Reference. Company policy did not allow Northern Water to complete the form therefore the maximum allowable points was 200.

Offeror #3 WWE

300 The offeror provided 4 organizational references. Wayne F. Lorenz, P.E. is specifically listed as a representative who was evaluated, and he would be a principal in this project. He received excellent scores. One comment states, "WWE was recognized as a fair trustworthy partner -Not only by Sun- But also by the town of Granby."

Technical Specifications per Amendment 2;

B.2.d Additional criteria for evaluation of Technical Specifications (100 Total Maximum points)

This Amendment is issued to add the following based on Engineering requirements from NMSA 13-1-120 (B, 1-7). The evaluation committee will re-distribute 100 points from Organization Reference points (originally 400 points) to the scoring to reflect how well the proposal addresses the below 7 factors.

B. The appropriate selection committee shall select, ranked in the order of their qualifications, no less than three businesses deemed to be the most highly qualified to perform the required services, after considering the following criteria together with any criteria, except price, established by the using agency authorizing the project: (1-7)

- 1) specialized design and technical competence of the business, including a joint venture or association, regarding the type of services required;
- 2) capacity and capability of the business, including any consultants, their representatives, qualifications and locations, to perform the work, including any specialized services, within the time limitations;
- 3) past record of performance on contracts with government agencies or private industry with respect to such factors as control of costs, quality of work and ability to meet schedules;
- 4) proximity to or familiarity with the area in which the project is located;
- 5) the amount of design work that will be produced by a New Mexico business within this state;
- 6) the volume of work previously done for the entity requesting proposals which is not seventy-five percent complete with respect to basic professional design services, with the objective of effecting an equitable distribution of contracts among qualified businesses and of assuring that the interest of the public in having available a substantial number of qualified businesses is protected; provided, however, that the principle of selection of the most highly qualified businesses is not violated; and

(7) notwithstanding any other provisions of this subsection, price may be considered in connection with construction management contracts, unless the services are those of an architect, engineer, landscape architect or surveyor.

Evaluation of Engineering Requirements Point Summary:

Offeror	AE2S	AECOM	WWE
Reference Points Total	36.66	75	85

Offeror #1 AE2S

36.66 The experience of the offeror and several of its personnel as describing their past record for BDD as the opposite expert in the litigation settlement was not adequately explained. The Offeror states that they worked as experts on the opposite side in the litigation against the design build firms. Then they claim to have found fault with the design firm's work. "Dr. Sabol determined that the river intake did not perform its purpose to restrict the intake of sediment larger than 1.75mm at the screened-side channel diversion weir." This raises multiple questions of ethics, knowledge of this project and similar issues. Their Response is inconsistent.

Offeror #2 AECOM

75 The management office is in Colorado, but the Proposal indicates that offeror has engineers in New Mexico. The offeror is very familiar with Santa Fe, taking into consideration their continued project experience with Nichols and McClure Dam Rehabilitation, with the city. From this experience, the offeror appears capable of performing the requirements, but it is unclear how much design work will be completed in New Mexico.

Offeror #3 WW E

85 "In 2018 (WWE) was retained to provide expert engineering evaluation services for the lawsuit brought about by the BDDD regarding the engineering and construction of the BDD Project." Stated from their proposal. "In 2019 and 2020, WWE prepared schematic concepts to fix the problems of the existing BDD Project. These fixes were prepared for technical documentation of the cost of damages for use in the lawsuit. WWE staff spent many hours on detailed analysis of the BDD Project and Planning of rehabilitation."

The firm appears to have the capacity to complete and undertake the work as the Offeror has complete familiarity with the BDD project having evaluated the entire facility in the course of its expert work from the litigation. The design work will likely be performed out of the state however, the lead Engineer, Wayne Lorenz, P.E. is a registered engineer in the state of New Mexico (#25371)

C.3. Letter of Transmittal Form (Pass/Fail)

Business Specifications:

The Offeror/Respondent/Respondent's proposal **must** be accompanied by the Letter of Transmittal Form located in APPENDIX D. The form **must** be completed and must be signed by the person authorized to obligate the company. **Failure to respond to ALL items, as indicated in Section**

II.C.30 and APPENDIX D, and to return a signed, unaltered form will result in Offeror/Respondent/Respondent’s disqualification.

Evaluation Factors:

Pass/Fail only. No points assigned.

Evaluation of Letter of Transmittal Form (Pass/Fail):

Offeror	AE2S	AECOM	WWE
Pass/Fail	Pass	Pass	Pass

Offeror #1

AE2S submitted a completed Letter of Transmittal Form as required by the RFP. AE2S received a “Pass.”

Offeror #2

AECOM submitted a completed Letter of Transmittal Form as required by the RFP. AECOM received a “Pass.”

Offeror #3

AECOM submitted a completed Letter of Transmittal Form as required by the RFP. WWE received a “Pass.”

C.4. Signed Campaign Contribution Disclosure Form (Pass/Fail)

Specifications:

The Offeror/Respondent/Respondent must complete an unaltered Campaign Contribution Disclosure Form and submit a signed copy with the Offeror/Respondent/Respondent’s proposal. This must be accomplished whether or not an applicable contribution has been made. (See APPENDIX B). **Failure to complete and return the signed, unaltered form will result in Offeror/Respondent/Respondent’s disqualification.**

Evaluation Factors:

Pass/Fail only. No points Assigned.

Committee Evaluation of Signed Campaign Contribution Disclosure Form (Pass/Fail):

Offeror	AE2S	AECOM	WWE
Pass/Fail	Pass	Pass	Pass

Offeror #1

AE2S submitted a signed Campaign Contribution Form as required by the RFP. AE2S received a “Pass.”

Offeror #2

AECOM submitted a signed Campaign Contribution Form as required by the RFP. AECOM received a “Pass.”

Offeror #3

WWE submitted a signed Campaign Contribution Form as required by the RFP. WWE received a “Pass.”

Pass/Fail Criteria added per Amendment 2

C.5.a Current NM A&E License

Evaluation Factors C.5.a, point summary line is added as follows: Pass/Fail only. No points assigned. Must submit current NM A&E License to be considered.

C.5.a Current NM A&E License Pass/Fail

Offeror	AE2S	AECOM	WWE
Pass/Fail	Pass	Pass	Pass

Offeror #1

AE2S submitted a signed Campaign Contribution Form as required by the RFP. AE2S received a “Pass.”

Offeror #2

AECOM submitted a signed Campaign Contribution Form as required by the RFP. AECOM received a “Pass.”

Offeror #3

WWE submitted a signed Campaign Contribution Form as required by the RFP. WWE received a “Pass.”

Section C.C.4, NM Preferences Preference Points 30/60

To qualify for a local preference, a vendor must attach a state of New Mexico Taxation and Revenue Department-issued, Resident Business certification of eligibility to its bid or proposal, showing that the business is located within the Santa Fe municipal limits. If an offer is received without a copy of the appropriate State of New Mexico Taxation and Revenue Department issued Business Registration Certificate, the preference will not be applied. A valid resident business certificate is issued by the Taxation and Revenue Department pursuant to NMSA 1978 §13-1-22.

- A. The City shall award additional 3% of the total weight of all the factors used in evaluating the proposal to a local resident business. The City shall award an additional 3% of the total weight of all the factors used in evaluating the proposal to a non-local resident business who has hired all local resident business subcontractors.
- B. When the City makes a purchase using a formal request for proposal process and the contract is awarded based on a point-based system, the City shall award additional points equivalent to 3% of the total possible points to a local resident business. The City shall award an additional 3% of the total possible points to a business who has hired all local resident business subcontractors.

The maximum available local preference shall be 6%.

Evaluation Committee Local Preference Summary:

Offeror	AE2S	AECOM	WWE
30/60 Points	0	60	0

Offeror #1 AE2S

Did not provide a state of New Mexico preference certificate.

Offeror #2 AECOM

Of a Maximum score rating of 60 points AECOM received 60 points. They provided a valid state of New Mexico resident Business certificate.

Offeror #3 WWE

Did not provide a state of New Mexico preference certificate.

Evaluation Points Summary:

Proposers	AE2S	AECOM	WWE
B.1. Organizational Experience	250	333.33	376.66
B.1.c Rio Grande Experience	66.66	125	200
B.B 2 Organizational References	241.66	191.66	300
B.2.d Engineering Requirements	36.66	75	85
C.3. Letter of Transmittal (Pass/Fail)	Pass	Pass	Pass
C.4. Campaign Disclosure Form (Pass/Fail)	Pass	Pass	Pass
C.5.a Current NM A&E License	Pass	Pass	Pass
C.5. BDD Local Preference per Section IV C. 2	0	0	0
C.6. BDD Local Preference using Local Subcontractors Section IV C.2	0	60	0
TOTAL POINTS AWARDED	594.98	784.99	961.66


Evaluation Committee Recommendations:

After a thorough review of proposals and evaluation process, with the results provided in the Evaluation Point Summary show that Offeror #3, Wright Water Engineering, Inc. with the highest score.


Based on the evaluation of proposals submitted, as detailed above, the committee recommends awarding one (1) Professional Service contract with, Wright, Water Engineers, Inc. which had the highest cumulative score from the Evaluation Point Summary.

In the event mutually agreeable terms cannot be reached with the apparent most advantageous Offeror in the timeframe specified, the BDD reserves the right to finalize a contractual agreement with the next most advantageous Offeror(s) without undertaking a new procurement process.


Committee Signature Approval


Maya Martinez (Mar 24, 2023 15:30 MDT)
Maya Martinez
Evaluation Committee Member

Mar 24, 2023
Date


Rick Carpenter (Mar 24, 2023 08:55 MDT)
Rick Carpenter
Evaluation Committee Member

Mar 24, 2023
Date


Nancy Long (Mar 24, 2023 10:03 MDT)
Nancy Long
Evaluation Committee Member

Mar 24, 2023
Date

Monique Maes
Monique Maes (Mar 24, 2023 08:40 MDT)
Monique Maes
Procurement Manager/BDD

Mar 24, 2023
Date

Chief Procurement Officer Signature Approval

Travis Dutton-Leyda
Travis Dutton-Leyda
Travis Dutton-Leyda
Procurement Officer
City of Santa Fe

Mar 24, 2023
Date

**BUCKMAN DIRECT DIVERSION BOARD
PROFESSIONAL SERVICES AGREEMENT
WITH
WRIGHT WATER ENGINEERS, INC.**

THIS PROFESSIONAL SERVICES AGREEMENT ("Agreement") is made and entered into by and between the Buckman Direct Diversion Board ("BDDDB") and Wright Water Engineers, Inc. ("Contractor"). The effective date of this Agreement shall be the date when it is executed by the BDD Chair.

1. SCOPE OF SERVICES

Contractor shall provide services for the BDDDB as fully described in the attached Exhibit A.

2. STANDARD OF PERFORMANCE; LICENSES

A. Contractor represents that Contractor possesses the personnel, experience and knowledge necessary to perform the Scope of Services described in this Agreement. Contractor shall perform its services in accordance with generally accepted standards and practices customarily utilized by competent consulting firms in effect at the time Contractor's services are rendered.

B. Contractor agrees to obtain and maintain throughout the term of this Agreement, all applicable professional and business licenses required by law, for itself, its employees, agents, representatives and subcontractors.

3. COMPENSATION

A. Compensation under this Agreement shall be, Two Hundred and Fifty-Thousand Dollars, (\$250,000.00) plus applicable New Mexico gross receipts tax.

B. Contractor shall be responsible for payment of New Mexico gross receipts taxes levied by the State of New Mexico on the sums paid under this Agreement.

C. Payment shall be made upon receipt and approval by the BDDDB of detailed statements containing a report of services completed. Compensation shall be paid only for services performed.

4. APPROPRIATIONS

The terms of this Agreement are contingent upon sufficient appropriations and authorization being made by the BDDDB for the performance of this Agreement. If sufficient appropriations and authorization are not made, this Agreement shall terminate upon written notice being given by the BDDDB to Contractor. The BDDDB's decision as to whether sufficient appropriations are available shall be accepted by Contractor and shall be final.

5. TERM AND EFFECTIVE DATE

This Agreement shall be effective when signed by the BDDDB and terminate June 30, 2024.

6. TERMINATION

A. This Agreement may be terminated by the BDDDB upon 30 days written notice to Contractor. In the event of such termination:

(1) Contractor shall render a final report of the services performed up to the date of termination and shall turn over to the BDDDB original copies of all work product, research or papers prepared under this Agreement.

(2) If payment has not already been made, Contractor shall be paid for services rendered and expenses incurred through the date Contractor receives notice of such termination. If full payment has been made, Contractor agrees to prorate for work accomplished and refund all amounts earned.

7. STATUS OF CONTRACTOR; RESPONSIBILITY FOR PAYMENT OF EMPLOYEES AND SUBCONTRACTORS

A. Contractor and its agents and employees are independent contractors performing professional services for the BDDDB and are not employees of the BDDDB. Contractor, and its agents

and employees, shall not accrue leave, retirement, insurance, bonding, use of BDDDB vehicles, or any other benefits afforded to employees of the BDDDB as a result of this Agreement.

B. Contractor shall be solely responsible for payment of wages, salaries and benefits to any and all employees or contractors retained by Contractor in the performance of the services under this Agreement.

C. Contractor shall comply with City of Santa Fe Minimum Wage, Article 28-1-SFCC 1987, as well as any subsequent changes to such article throughout the term of this Agreement.

8. CONFIDENTIALITY

Any confidential information provided to or developed by Contractor in the performance of this Agreement shall be kept confidential and shall not be made available to any individual or organization by Contractor without the prior written approval of the BDDDB.

9. CONFLICT OF INTEREST

Contractor warrants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required under this Agreement. Contractor further agrees that in the performance of this Agreement no persons having any such interests shall be employed.

10. ASSIGNMENT; SUBCONTRACTING

Contractor shall not assign or transfer any rights, privileges, obligations or other interest under this Agreement, including any claims for money due, without the prior written consent of the BDDDB. Contractor shall not subcontract any portion of the services to be performed under this Agreement without the prior written approval of the BDDDB.

11. RELEASE

Contractor, upon acceptance of final payment of the amount due under this Agreement, releases the BDDDB, City of Santa Fe, Santa Fe County, Las Campanas Water and Sewer Cooperative and The Club at Las Campanas; their officers, officials and employees, from all liabilities, claims and obligations whatsoever arising from or under this Agreement. If not completed at the time of final payment, Contractor shall remain obligated to complete the Scope of Services and other obligations of this Agreement. Contractor agrees not to purport to bind the BDDDB to any obligation not assumed herein by the BDDDB unless Contractor has express written authority to do so, and then only within the strict limits of that authority.

12. INSURANCE

A. Contractor shall not begin the Professional Services required under this Agreement until it has: (i) obtained, and upon the BDDDB's request provided to the BDDDB, insurance certificates reflecting evidence of all insurance required herein; however, the BDDDB reserves the right to request, and Contractor shall submit, copies of any policy upon reasonable request by the BDDDB; (ii) obtained BDDDB approval of each company or companies as required below; and (iii) confirmed that all policies contain the specific provisions required. Contractor's liabilities, including but not limited to Contractor's indemnity obligations, under this Agreement, shall not be deemed limited in any way to the insurance coverage required herein. Maintenance of specified insurance coverage is a material element of this Agreement and Contractor's failure to maintain or renew coverage or to provide evidence of renewal during the term of this Agreement may be treated as a material breach of Agreement by the BDDDB.

B. Further, Contractor shall not modify any policy or endorsement thereto which increases the BDDDB's exposure to loss for the duration of this Agreement.

C. **Types of Insurance.** At all times during the term of this Agreement, Contractor shall maintain insurance coverage as follows:

(1) **Commercial General Liability.** Commercial General Liability (CGL) Insurance must be written on an ISO Occurrence form or an equivalent form providing coverage at least as broad which shall cover liability arising from any and all bodily injury, personal injury or property damage providing the following minimum limits of liability.

General Annual Aggregate (other than Products/Completed Operation)	\$1,000,000
Products/Completed Operations Aggregate Limit	\$1,000,000
Personal Injury Limit	\$1,000,000
Each Occurrence	\$1,000,000

(2) **Automobile Liability.** For all of Contractor's automobiles including owned, hired and non-owned automobiles, Contractor shall keep in full force and effect, automobile liability insurance providing coverage at least as broad for bodily injury and property damage with a combined single limit of not less than \$1 million per accident. An insurance certificate shall be submitted to the BDDDB that reflects coverage for any automobile [any auto].

(3) **Professional Liability.** For Contractor and all of Contractor's employees who are to perform professional services under this Agreement, Contractor shall keep in full force and effect, Professional Liability insurance for any professional acts, errors or omissions. Such policy shall provide a limit of not less than \$1,000,000 per claim and \$1,000,000 annual aggregate. Contractor shall ensure both that: (i) the policy retroactive date is on or before the date of commencement of the first work performed under this

Agreement; and (ii) the policy will be maintained in force for a period of three years after substantial completion of the project or termination of this Agreement whichever occurs last. If professional services rendered under this Agreement include work relating to environmental or pollution hazards, Contractor’s policy shall not contain exclusions for those activities.

(4) **Workers’ Compensation.** For all of Contractor's employees who are subject to this Agreement and to the extent required by any applicable state or federal law, Contractor shall keep in full force and effect, a Workers’ Compensation policy & Employers Liability policy. That policy shall provide Employers Liability Limits as follows:

Bodily Injury by Accident	\$500,000	Each Accident
Bodily Injury by Disease	\$500,000	Each Employee
Bodily Injury by Disease	\$500,000	Policy Limit

Contractor shall provide an endorsement that the insurer waives the right of subrogation against the BDDDB, City of Santa Fe, Santa Fe County, Las Campanas Water and Sewer Cooperative and The Club at Las Campanas; their respective elected officials, officers, employees, agents, volunteers and representatives.

D. **Cancellation.** Except as provided for under New Mexico law, all policies of insurance required hereunder must provide that the BDDDB is entitled to thirty (30) days prior written notice (10 days for cancellation due to non-payment of premium) of cancellation or non-renewal of the policy or policies as evidence by an endorsement to the policies which shall be attached to the certificates of insurance. Cancellation provisions in insurance certificates shall not contain the qualifying words “endeavor to” and “but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives.” In the event

Contractor's insurance carriers will not agree to this notice requirement, Contractor will provide written notice to the BDDDB within four working days of Contractor's receipt of notice from its insurance carrier(s) of any cancellation, nonrenewal or material reduction of the required insurance.

E. **Insurer Requirements.** All insurance required by express provision of this Agreement shall be carried only by responsible insurance companies that have rated "A-" and "V" or better by the A.M. Best Key Rating Guide, that are authorized to do business in the State of New Mexico, and that have been approved by the BDDDB. The BDDDB will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the State of New Mexico.

F. **Deductibles.** All deductibles or co-payments on any policy shall be the responsibility of Contractor.

G. **Specific Provisions Required.**

(1) Each policy shall expressly provide, and an endorsement shall be submitted to the BDDDB, that the policy or policies providing coverage for Commercial General Liability must be endorsed to include as an Additional Insured, the BDDDB, City of Santa Fe, Santa Fe County, Las Campanas Water and Sewer Cooperative and The Club at Las Campanas; their respective elected officials, officers, employees, agents, volunteers and representatives.

(2) All policies required herein are primary and non-contributory to any insurance that may be carried by the BDDDB, City of Santa Fe, Santa Fe County, Las Campanas Water and Sewer Cooperative and The Club at Las Campanas; their respective

elected officials, officers, employees, agents, volunteers and representatives, as reflected in an endorsement which shall be submitted to the BDDDB.

(a) Contractor agrees that for the time period defined above, there will be no changes or endorsements to the policy that increase the BDDDB's exposure to loss.

(b) Before performing any Professional Services, Contractor shall provide the BDDDB with all Certificates of Insurance accompanied with all endorsements.

(c) The BDDDB reserves the right, from time to time, to review Contractor's insurance coverage, limits, and deductible and self-insured retentions to determine if they are acceptable to the BDDDB. The BDDDB will reimburse Contractor for the cost of the additional premium for any coverage requested by the BDDDB in excess of that required by this Agreement without overhead, profit, or any other markup.

(d) Contractor may obtain additional insurance not required by this Agreement.

13. INDEMNIFICATION

General Indemnification. To the greatest extent permitted by law, Contractor shall indemnify, hold harmless the BDDDB, City of Santa Fe, Santa Fe County, Las Campanas Water and Sewer Cooperative and The Club at Las Campanas; their respective elected officials, officers, employees, agents, volunteers and representatives from all losses, damages, claims or judgments, including payments of all attorneys' fees and costs on account of any suit, judgment, execution, claim, action or demand whatsoever arising from Contractors performance or non-performance

under this Agreement as well as the performance or non-performance of Contractor’s employees, agents, representatives and subcontractors or any tier.

Indemnification for Professional Acts, Errors or Omissions. Except for professional acts, error or omissions that are the result of established gross negligence or willful misconduct on the part of Contractor, or its employees, agents, representatives or sub-consultants, the General Indemnification shall not apply to professional acts, errors or omissions unless covered by Professional Liability insurance required in this Agreement.

14. NEW MEXICO TORT CLAIMS ACT

Any liability incurred by the BDDDB in connection with this Agreement is subject to the immunities and limitations of the New Mexico Tort Claims Act, NMSA 1978, § 41-4-1, *et seq.*, as amended. The BDDDB and their “public employees” as defined in the New Mexico Tort Claims Act, do not waive sovereign immunity, do not waive any defense and do not waive any limitation of liability pursuant to law. No provision in this Agreement modifies or waives any provision of the New Mexico Tort Claims Act.

15. THIRD-PARTY BENEFICIARIES

By entering into this Agreement, the parties do not intend to create any right, title or interest in or for the benefit of any person other than the BDDDB and Contractor. No person shall claim any right, title or interest under this Agreement or seek to enforce this Agreement as a third-party beneficiary of this Agreement.

16. RECORDS, DOCUMENT CONTROL AND AUDIT

A. Contractor shall conform with and participate in the Document Control policies of the BDDDB or City of Santa Fe. Contractor shall maintain, throughout the term of this Agreement and for a period of three years thereafter, all records that relate to the scope of services provided

under this Agreement.

B. Detailed records that indicate the date, time and nature of services rendered shall also be retained for a period of three years after the term of this agreement expires. These records shall be subject to inspection by City of Santa Fe, the Department of Finance and Administration, the State Auditor. The BDDDB and City of Santa Fe shall have the right to audit the billing both before and after payment to Contractor. Payment under this Agreement shall not foreclose the right of the BDDDB or City of Santa Fe to recover excessive or illegal payments.

17. APPLICABLE LAW; CHOICE OF LAW; VENUE

Contractor shall abide by all applicable federal and state laws and regulations, and all ordinances, rules and regulations of the BDDDB. In any action, suit or legal dispute arising from this Agreement, Contractor agrees that the laws of the State of New Mexico shall govern. Any action or suit commenced in the courts of the State of New Mexico shall be brought in the First Judicial District Court.

18. AMENDMENT

This Agreement shall not be altered, changed or modified except by an amendment in writing executed by the parties hereto.

19. SCOPE OF AGREEMENT

This Agreement incorporates all the agreements, covenants, and understandings between the parties hereto concerning the services to be performed hereunder, and all such agreements, covenants and understandings have been merged into this Agreement. This Agreement expresses the entire Agreement and understanding between the parties with respect to said services. No prior agreement or understanding, verbal or otherwise, of the parties or their agents shall be valid or enforceable unless embodied in this Agreement.

20. NON-DISCRIMINATION

During the term of this Agreement, Contractor shall not discriminate against any employee or applicant for an employment position to be used in the performance of services by Contractor hereunder, on the basis of ethnicity, race, age, religion, creed, color, national origin, ancestry, sex, gender, sexual orientation, physical or mental disability, medical condition, or citizenship status.

21. SEVERABILITY

In case any one or more of the provisions contained in this Agreement or any application thereof shall be invalid, illegal or unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions contained herein, and any other application thereof shall not in any way be affected or impaired thereby.

22. NOTICES

Any notices requests, demands, waivers and other communications given as provided in this Agreement will be in writing and will be deemed to have been given if delivered in person (including by Federal Express or other personal delivery service), or mailed by certified or registered mail, postage prepaid, and addressed to Seller or Buyer at the following addresses:

BDDB: Rick Carpenter
Facilities Manager
Buckman Direct Diversion
341 Caja Del Rio Road
Santa Fe, NM 87506
Email: rrcarpenter@ci.santa-fe.nm.us

With a copy to: Nancy R. Long, Esq.
BDDB Independent Counsel
Long, Komer & Associates, P.A.
P.O. Box 5098
Santa Fe, NM 87502
Email: nancy@longkomer.com

CONTRACTOR: Wayne Lorenz, P.E
Wright Water Engineers, Inc.
2490 W. 26th Ave. Ste. 100A
Denver, CO 80211
Email: wlorenz@wrightwater.com

Any such notice sent by registered or certified mail, return receipt, shall be deemed to have been duly given and received seventy-two (72) hours after the same is so addressed and mailed with postage prepaid. Notice sent by recognized overnight delivery service shall be effective only upon actual receipt thereof at the office of the addressee set forth above, and any such notice delivered at a time outside of normal business hours shall be deemed effective at the opening of business on the next business day. Any party may change its address for purposes of this paragraph by giving notice to the other party as herein provided. Delivery of any copies as provided herein shall not constitute delivery of notice hereunder.

IN WITNESS WHEREOF, the parties have executed this Agreement on the date set forth below.

***[BALANCE OF PAGE INTENTIONALLY LEFT BLANK;
SIGNATURE PAGE FOLLOWS]***

BUCKMAN DIRECT DIVERSION BOARD

**CONTRACTOR:
WRIGHT WATER ENGINEERS, INC.**

By: _____
Anna Hamilton, BDDDB Chair,

Signature: _____

Printed Name: _____

Date: _____

Title: _____

Date: _____

APPROVED AS TO FORM

NM Taxation & Revenue
CRS # _____

Nancy R. Long

BDDDB Counsel, Nancy R. Long, Esq.

City of Santa Fe Business
Registration # _____

ATTEST

County Clerk, Katharine Clark

Date _____

APPROVED

City Finance Director

ATTEST

City Clerk, Kristine Bustos-Mihelcic

File Date: _____

EXHIBIT A

Scope of Work

Contractor shall:

1. Plan and attend a kick-off meeting with BDD management and operation staff.
2. Prepare an executive summary of the previous work performed by WWE that addresses the remedies that were proposed for the BDD Facility in the legal proceedings.
3. Conduct interviews with key BDD staff (initially and as-needed thereafter) to analyze operational and system failures and issues.
4. Analyze existing conditions of the Rio Grande River and provide analysis of the current challenges with the objectives of successful, optimal performance and operation of the BDD Facility. WWE may include sub-consultants in this effort for peer review and professional opinion.
5. Develop a Work Plan to include: a conceptual redesign plan to optimize performance and operation of the BDD Facility; prioritization and sequencing of the necessary reconstruction, including estimated costs; and an estimated draft schedule of the overall work to be accomplished by design/construction professionals.
6. Prepare a permitting plan for the reasonably anticipated permits that will be needed and an estimated schedule for permit acquisition. Actual permit acquisition would be the responsibility of the design/construction professionals.
7. Analyze and recommend the most appropriate project delivery method for the redesign and reconstruction of the BDD Facility.
8. Develop preliminary budgets and schedules for the redesign and reconstruction of the BDD Facility and recommend planning and scheduling methods to minimize shutdowns to the BDD Facility.
9. Assist with development of a redesign and reconstruction procurement plan. The procurement plan will include, but will not be limited to, a detailed scope of work for the redesign and reconstruction and a project implementation plan.
10. Assist with preparation of procurement documents and subsequent contract(s) negotiations, which may also include an “engineer’s estimate.”
11. Consult with the BDDB's Technical Committee and report to the Committee on work progress and analyses.
12. Other tasks as assigned by the BDD Facilities Manager.