Memorandum

Buckman Direct Diversic

Date: October 3, 2019

To: Buckman Direct Diversion Board

From: Randy Sugrue, BDD Operations Superintendent

Subject: Update on BDD Operations for the Month of September 2019

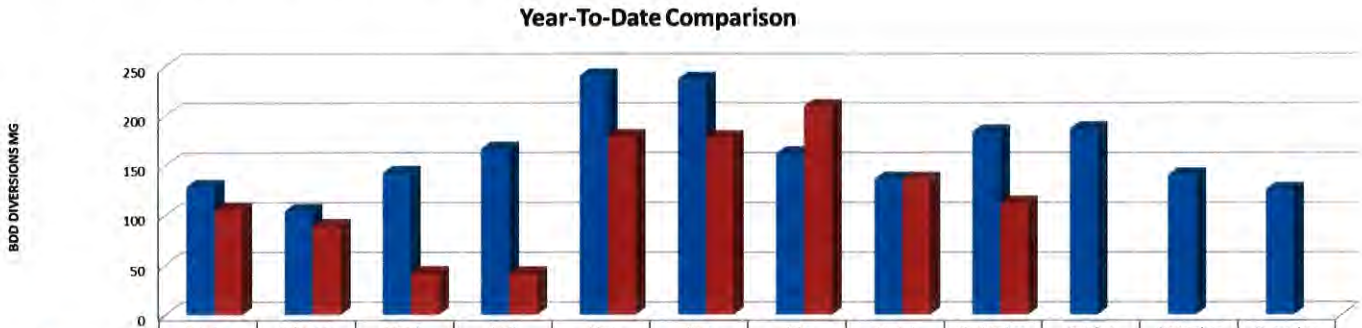
ITEM:

1. This memorandum is to update the Buckman Direct Diversion Board (BDDB) on BDD operations during the month of September 2019. The BDD diversions and deliveries have averaged, in Million Gallons Per Day (MGD) as follows:
    a. Raw water diversions: 3.732 MGD.
    b. Drinking water deliveries through Booster Station 4A/5A: 2.724 MGD.
    c. Raw water delivery to Las Campanas at BS2A: 0.947 MGD.
    d. Onsite treated and non-treated water storage: 0.061 MGD Average.

2. The BDD is providing approximately 24.8% percent of the water supply to the City and County for the month.

3. Drought Summary.

4. The BDD year-to-date diversions are depicted below:



	January	February	March	April	May	June	July	August	September	October	November	December
Average Monthly	128.56	104.00	142.41	166.56	240.68	236.96	161.75	136.35	183.66	186.82	140.20	125.59
This month	105.43	89.10	41.68	41.27	179.08	177.81	209.18	136.14	111.96			

Drought/Monsoon, Storage, and ESA Update

NOAA has recently updated ENSO (El Nino/La Niña) status to:

A **ENSO-neutral is favored during the Northern Hemisphere fall 2019 (~75% chance), continuing through spring 2020 (55-60% chance).**

Heron, Abiquiu, and El Vado reservoir levels on the Chama River are still experiencing runoff, although it is slowing due to lack of monsoonal flow. Abiquiu Reservoir is out of "flood ops," which means that not only native water but also SJCP flows can be called for from the reservoir. Local Upper Santa Fe River reservoir storage volume is at high capacity but the CRWTP is pulling high amounts of water from the reservoirs as the watershed heads into Fall. The City has received normal delivery from BoR of full firm-yield of San Juan-Chama Project (SJCP) thus far in 2019 and is projected to be 100% full firm yield by the year end. Updates on ESA issues will be made as needed. Rio Grande Compact Article VII storage restrictions are not in effect (restrictions on storage were lifted in early May). This means the City is now allowed to impound "native" runoff into Nichols and McClure Reservoirs above the pre-Compact pool of 1,061 acre-feet (AF). Updates to this condition will be made as needed. The current absence of Article VII storage restrictions are expected to stay in effect for the foreseeable future.

Most current City of Santa Fe SJCP Reservoir Storage:

Heron:
9,283 AF.

El Vado:
0 AF.

Buckman Direct Diversion Monthly SJC and Native Diversions

Sep-19 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	All Partners Conveyance Losses
JAN	**327.677**	**56.671**	**0.000**	271.007	**271.007**	**0.000**	2.483
FEB	**278.357**	**71.266**	**0.000**	207.090	**207.090**	**0.000**	1.908
MAR	**134.335**	**88.610**	**0.000**	45.725	**45.725**	**0.000**	3.498
APR	**126.924**	**114.750**	**0.000**	12.175	**12.175**	**0.000**	0.110
MAY	**550.285**	**550.285**	**0.000**	0.000	**0.000**	**0.000**	0.000
JUN	**546.222**	**546.222**	**0.000**	0.000	**0.000**	**0.000**	0.000
JUL	**649.014**	**23.285**	**0.000**	625.729	**519.383**	**106.345**	2.907
AUG	**422.340**	**17.075**	**0.000**	405.265	**318.606**	**86.659**	1.912
SEP	**430.936**	**67.417**	**0.000**	363.519	**276.300**	**87.219**	0.900
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	**3,466.089**	**1,535.581**	**0.000**	**1,930.509**	**1,650.286**	**280.223**	**13.717**

In Million Gallons

Month	Native COUNTY	Native Las Campanas	SJC TOTAL	SJC CITY	SJC Las Campanas	All Partners Diversions
JAN	18.460	0.000	87.342	87.342	0.000	105.802
FEB	23.214	0.000	66.739	66.739	0.000	89.953
MAR	28.863	0.000	13.735	13.735	0.000	42.598
APR	37.378	0.000	3.924	3.924	0.000	41.302
MAY	179.246	0.000	0.000	0.000	0.000	179.246
JUN	177.923	0.000	0.000	0.000	0.000	177.923
JUL	7.585	0.000	201.598	167.635	34.262	209.183
AUG	5.562	0.000	130.586	102.846	27.974	136.148
SEP	21.960	0.000	118.410	90.000	28.410	140.370
OCT	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
DEC	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	**500.189**	**0.000**	**622.336**	**532.223**	**90.646**	**1,122.525**

Buckman Direct Diversion Monthly SJC and Native Diversions

Dec-18 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	All Partners Conveyance Losses
JAN	**383.578**	**77.954**	**0.000**	305.624	**305.624**	**0.000**	2.708
FEB	**343.467**	**75.227**	**0.000**	268.240	**268.240**	**0.000**	2.415
MAR	**363.780**	**267.512**	**0.000**	96.268	**96.268**	**0.000**	4.036
APR	**662.407**	**569.253**	**0.000**	93.154	**93.154**	**0.000**	3.898
MAY	**941.240**	**209.538**	**0.000**	731.702	**615.366**	**116.336**	8.171
JUN	**912.903**	**30.894**	**0.000**	882.009	**740.070**	**141.939**	8.707
JUL	**905.897**	**0.000**	**0.000**	905.897	**816.188**	**89.709**	4.255
AUG	**678.383**	**1.466**	**0.000**	676.917	**676.917**	**0.000**	6.087
SEP	**694.411**	**0.000**	**0.000**	694.411	**694.411**	**0.000**	6.404
OCT	**608.789**	**0.000**	**0.000**	608.789	**599.228**	**9.560**	5.805
NOV	**404.616**	**82.390**	**0.000**	322.226	**316.641**	**5.585**	3.196
DEC	**369.186**	**2.966**	**0.000**	366.220	**366.220**	**0.000**	3.392
TOTAL	**7,268.656**	**1,317.200**	**0.000**	**5,951.456**	**5,588.327**	**363.129**	**59.073**

In Acre-Feet

Month	**Native** COUNTY	**Native** Las Campanas	**SJC** TOTAL	**SJC** CITY	**SJC** Las Campanas	**All Partners Diversions**
JAN	77.954	0.000	302.916	302.916	0.000	380.870
FEB	75.227	0.000	265.825	265.825	0.000	341.052
MAR	267.512	0.000	92.231	92.231	0.000	359.744
APR	569.253	0.000	89.256	89.256	0.000	658.509
MAY	209.538	0.000	723.531	608.494	115.037	933.069
JUN	30.894	0.000	873.302	732.764	140.538	904.196
JUL	0.000	0.000	900.737	811.539	89.198	900.737
AUG	1.466	0.000	670.830	670.830	0.000	672.295
SEP	0.000	0.000	688.007	688.007	0.000	688.007
OCT	0.000	0.000	602.984	593.515	9.469	602.984
NOV	82.390	0.000	319.030	313.500	5.530	401.420
DEC	2.966	0.000	362.829	362.829	0.000	365.794
TOTAL	**1,317.200**	**0.000**	**5,891.477**	**5,531.706**	**359.772**	**7,208.677**

Dec-17 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	All Partners Conveyance Losses
JAN	**395.248**	**84.736**	**0.000**	310.512	**310.512**	**0.000**	2.717
FEB	**383.179**	**26.107**	**3.426**	353.646	**353.646**	**0.000**	3.087
MAR	**547.849**	**17.804**	**11.643**	518.402	**518.402**	**0.000**	4.564
APR	**592.385**	**381.170**	**0.000**	211.216	**211.216**	**0.000**	1.821
MAY	**488.240**	**478.925**	**0.000**	9.315	**9.315**	**0.000**	0.072
JUN	**616.871**	**12.970**	**0.000**	603.900	**477.780**	**126.121**	5.517
JUL	**626.113**	**23.719**	**0.000**	602.394	**484.406**	**117.988**	5.429
AUG	**557.303**	**17.073**	**0.000**	540.230	**540.230**	**0.000**	4.871
SEP	**637.339**	**230.584**	**0.000**	406.755	**395.200**	**11.555**	3.873
OCT	**444.333**	**127.611**	**0.000**	316.723	**316.723**	**0.000**	2.938
NOV	**356.536**	**107.143**	**0.000**	249.394	**203.128**	**46.266**	1.658
DEC	**360.218**	**73.071**	**0.000**	287.147	**287.147**	**0.000**	2.321
TOTAL	**6,005.614**	**1,580.910**	**15.069**	**4,409.635**	**4,107.705**	**301.930**	**38.868**

In Acre-Feet

Month	**Native** COUNTY	**Native** Las Campanas	**SJC** TOTAL	**SJC** CITY	**SJC** Las Campanas	**All Partners Diversions**
JAN	84.736	0.000	307.795	307.795	0.000	392.531
FEB	26.107	3.426	350.559	350.559	0.000	380.091
MAR	17.804	11.643	513.838	513.838	0.000	543.285
APR	381.170	0.000	209.395	209.395	0.000	590.565
MAY	478.925	0.000	9.243	9.243	0.000	488.168
JUN	12.970	0.000	598.383	473.415	124.969	611.354
JUL	23.719	0.000	596.965	480.040	116.925	620.684
AUG	17.073	0.000	535.359	535.359	0.000	552.431
SEP	230.584	0.000	402.883	391.437	11.445	633.466
OCT	127.611	0.000	313.785	313.785	0.000	441.396
NOV	107.143	0.000	247.736	201.777	45.958	354.878
DEC	73.071	0.000	284.826	284.826	0.000	357.898
TOTAL	**1,580.910**	**15.069**	**4,370.767**	**4,071.470**	**299.297**	**5,966.747**

Memorandum

Buckman Direct Diversion

Date: October 3, 2019

To: Buckman Direct Diversion Board

From: Mackie Romero, BDD Financial Manager

Subject: 4th Quarter Financial Statements

Information Item:

This report is to update the BDD Board and its partners on the 4th Quarter financial position as of June 30, 2019.

Budget Overview – A financial plan that quantifies our current and future operations.

- Beginning Budget – FY18/19 Adopted Budget includes any budget adjustments.
- Expended – Expenditures for services and/or goods received as of 6/30/2019.
- Available Balance – Represents vacancy savings and uncommitted budget balance as of 6/30/2019.
- Percentage – Represents percentage of expended budget balance.

Fixed & Variable Costs – All expenses including project wide, billed to our partners for services and/or goods received as of June 30, 2019.

Other Funds - Major Repair & Replacement and Emergency Reserve Fund monthly contributions, cash balances and budget overview for budgeted funds authorized by the BDDB for expenditure.

This presentation of financial information for fiscal year ended June 30, 2019, certifies the Buckman Direct Diversion's accounting transactions are reconciled in preparation for the annual audit.

BDD will continue to provide quarterly updates with financial information, to provide the highest level of transparency to the partners and the BDD Board.

If you require any additional information to be included in this report, please contact me.

4th Quarter Financial Statement – Operations
(07/01/2018-6/30/2019)

Budget Overview

CATEGORY	BEGINNING BUDGET	EXPENDED 1st Quarter	EXPENDED 2nd Quarter	EXPENDED 3rd Quarter	EXPENDED 4th Quarter	TOTAL	BALANCE AVAILABLE	EXP BDGT %
Employee Salaries &	2,372,849	495,662	477,082	578,457	443,724	1,994,925	377,924	84%
Benefits	1,198,824	253,053	232,979	276,047	225,865	987,945	210,879	82%
Electricity	1,200,000	353,660	234,315	180,554	258,047	1,026,576	173,424	86%
Chemicals	336,000	116,709	64,160	41,177	90,645	312,691	23,309	93%
Solids	120,000	16,730	30,151	732	13,596	61,209	58,791	51%
Materials & Supplies	851,239	60,015	101,817	130,440	411,783	704,055	147,184	83%
Other Operating Costs	950,952	286,035	193,843	150,312	257,307	887,498	63,454	93%
Litigation Costs	1,690,000	148,928	200,952	326,241	758,667	1,434,788	255,212	85%
Fiscal Agent Fees	318,760	-	-	-	312,463	312,463	6,297	98%
TOTAL	9,038,624	1,730,793	1,535,299	1,683,961	2,772,097	7,722,150	1,316,474	85%
DOE Federal Grant	96,000	1,895	1,780	57,574	33,775	95,024	976	99%

Total Expenses thru 6/30/2019 — 7,817,174

Fixed & Variable Cost – Operations

July - December	Total	Fixed	Variable	Project Wide
Partner Revenue				
City of Santa Fe	5,178,590	1,540,951	794,746	2,842,892
Santa Fe County	2,191,313	546,275	390,267	1,254,771
LC - Club	145,073	43,624	16,543	84,906
LC - Coop	56,293	56,293	-	-
Total	7,571,268	2,187,143	1,201,556	4,182,569
Other Revenue				
PNM Solar Rebate	150,882			
DOE Federal Grant	95,024			
Total	245,906			
Grand Total	7,817,174			

4th Quarter Financial Statement – Other Funds
(07/01/2018-6/30/2019)

Pre-Bills – Major Repair & Replacement Fund (Yearly Contribution)

	Total	City of SF	SF County	Las Campanas Club	Las Campanas Coop
Major Repair Fund	626,706	445,545	156,494	10,769	13,898
	626,706	445,545	156,494	10,769	13,898

Financial Position - Cash

	*Emergency Reserve	Major Repair
Balance at 06/30/2018	2,063,495	1,570,854
18/19 Yearly Contributions - Billed	-	626,706
Interest Earned (Pending)	-	-
Total	2,063,495	2,197,560
Less Expenses at 06/30/2019		(402,065)
Projected Cash Balance at 6/30/2019		1,795,495

*** Emergency Reserve Fund has reached the funding target, per the established policy.**

Budget Overview – Major Repair and Replacement Fund

CATEGORY	FY18/19 BUDGET	EXPENDED 1st Quarter	EXPENDED 2nd Quarter	EXPENDED 3rd Quarter	EXPENDED 4th Quarter	TOTAL EXPENSES	CARRYOVEI BALANCE
Engineering Services	43,923	3,923	-	-	-	3,923	40,000
System Equipment	384,102	-	40,600	27,751	147,258	215,608	168,494
Rep & Maint System Equip	480,690	88,865	14,315	8,480	1,351	113,012	367,678
Vehicles < 1.5 Ton	69,522	-	-	-	69,522	69,522	-
TOTAL	978,237	92,788	54,915	36,231	218,131	402,065	576,172

Budget Overview – Capital Carve-out Budget

CATEGORY	FY18/19 BUDGET	EXPENDED 1st Quarter	EXPENDED 2nd Quarter	EXPENDED 3rd Quarter	EXPENDED 4th Quarter	TOTAL
Legal Services	50,000	692	8,051	3,668	5,632	18,043
Professional Services	284,811	-	-	-	-	-
Consulting Services	10,000	1,249	4,569	-	-	5,818
TOTAL	344,811	1,940	12,620	3,668	5,632	23,861

For immediate release
September 16, 2019

Contacts:
Rachel Conn, Amigos Bravos, 575-770-8327, rconn@amigosbravos.org
Andrew Hawley, Western Environmental Law Center, 206-487-7250, hawley@westernlaw.org

Groups Sue EPA Over Los Alamos Pollution

Los Alamos, NM – Late yesterday, clean water advocates filed a lawsuit against the Environmental Protection Agency (EPA) to force it to address extremely high urban storm water pollution in Los Alamos County, downstream from Los Alamos National Laboratory (LANL).

Urban storm water pollution from PCBs, copper, zinc, nickel, and gross alpha radiation in Los Alamos County is threatening public health – some pollutants are more than 10,000 times public safety limits. This pollution should have triggered federal action to reduce or eliminate these discharges in the form of a National Pollutant Discharge Elimination System (NPDES) permit, but the EPA has failed to act. In 2014 Amigos Bravos petitioned the agency to address this threat, but it did not respond. In June of this year Amigos Bravos and Western Environmental Law Center sent a letter notifying the EPA of the organizations' intent to sue due to the agency's inaction on the 2014 petition. EPA did not respond substantively to this letter.

As required by the Clean Water Act, New Mexico set standards to ensure the state's rivers, streams and lakes are clean enough to allow the public to use these waters for drinking, swimming, boating, and other activities, and to support healthy populations of fish and wildlife. To ensure these standards are met, the Clean Water Act requires the EPA to regulate stormwater runoff when that runoff is making the water unsafe.

The New Mexico Environment Department's (NMED) data show dramatic exceedances of the state's PCB human health water quality limits. PCB levels in Los Alamos Canyon are more than 11,000 times greater than the New Mexico Human Health water quality criteria and 51 times greater than the New Mexico Wildlife Habitat water quality criteria. Sandia Canyon shows PCB contamination more than 14,000 times greater than the New Mexico Human Health water quality criteria and 66 times greater than the New Mexico Wildlife Habitat water quality criteria. PCBs levels in Pueblo Canyon are more than 3,500 times greater than the New Mexico Human Health water quality criteria and 16 times greater than the New Mexico Wildlife Habitat water quality criteria. These three drainages are all heavily influenced by urban stormwater runoff.

The state's 303d/305b report documents many more exceedances of standards – for a variety of pollutants and locations. Mortandad Canyon is high in PCBs, mercury, silver, cyanide, copper, and gross alpha radiation pollution. Pajarito Canyon is impaired for gross alpha radiation, aluminum, PCBs, and copper. LANL's own documents confirm these findings and identify urban runoff as the culprit for many of these pollutants.

In 2015 EPA published a preliminary designation finding that Amigos Bravos' 2014 petition should be granted, but has since failed to take any action. In June 2019 Amigos Bravos and Western Environmental Law Center sent EPA a letter to notify the agency of the groups' intent to sue them for this failure to take action. EPA has not responded to the June letter, forcing the groups to take further action by filing the lawsuit today.

We are disappointed that for years EPA has failed to take action to protect New Mexicans' public health and environment and require that these toxic discharges be controlled and monitored," said Rachel Conn, projects director with Amigos Bravos. "Meanwhile toxic pollution continues to flow down into the Rio Grande above the drinking water diversions for both Albuquerque and Santa Fe."

"Under the Clean Water Act, the rubber hits the road when the standards and goals for waterways are turned into permit requirements," said Andrew Hawley, attorney with the Western Environmental Law Center. "EPA must act now to protect the people and environment in Los Alamos County. We hope the EPA decides to do the right thing."

###

LOS ALAMOS COUNTY PRELIMINARY DESIGNATION DOCUMENT

Designation Analysis in Response to Petition by Amigos Bravos for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit

I. SUMMARY OF PETITION AND REGION 6 DETERMINATION

On June 30, 2014, Amigos Bravos, a river conservation organization in New Mexico, petitioned the Regional Administrator of EPA Region 6 (EPA) for a "determination, pursuant to 40 CFR. 122.26(a)(9)(i)(D) that non-de minimis, currently non NPDES permitted storm water discharges in Los Alamos County are contributing to violations of water quality standards in certain impaired waters throughout the area, and therefore require a National Pollutant Discharge Elimination System (NPDES) permit pursuant to section 402(p) of the Clean Water act and/or designation as a municipal separate storm sewer system " *A Petition by Amigos Bravos for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit* ("the Petition").

The Petition alleges that urban storm water pollution from Los Alamos County sites, particularly urban storm water runoff from developed areas at Los Alamos National Laboratory (LANL), the Los Alamos Townsite, and the community of White Rock Canyon is contributing to violations of New Mexico state water quality standards (WQS), including state WQS for PCBs, copper, zinc and nickel, and that as a result, these sites should be covered by an NPDES permit. 40 CFR 122.26(a)(9)(i)(D) provides that the EPA Regional Administrator may designate storm water discharges as requiring NPDES permit coverage if he determines that the discharge, or category of discharges within a geographic area, contributes to a violation of a WQS or is a significant contributor of pollutants to waters of the U.S. In response to the Petition, Los Alamos County and LANL submitted additional information and data related to storm water discharges in Los Alamos County on November 4, 2014 and November 24, 2014, respectively. A summary breakdown of Petition allegations for which LANL and/or Los Alamos County provided additional information, along with EPA's preliminary response, is attached as Appendix 3 to this document.

After careful review of the Petition and the additional information provided by LANL and Los Alamos County, as well as review of the State of New Mexico's assessment of water quality in the area, EPA Region 6 has determined that discharges of storm water from municipal separate storm sewer systems (MS4s) on LANL property and urban portions of Los Alamos County has the potential to cause or contribute to violations of one or more New Mexico water quality standards. Runoff from urban areas in Los Alamos County and from developed areas of LANL contain pollutants for which the state of New Mexico has listed receiving waters as impaired in the State's CWA §303(d) list of impaired waters not fully supporting their designated beneficial uses. Under an NPDES permit, dischargers would be required to reduce pollutants in such discharges to the Maximum Extent Practicable and to address water quality impacts, thereby addressing EPA's concern that theses discharges are at least contributing to the associated water quality impairments, if not causing the impairments, and that they may also be causing or

contributing to exceedances of instream water quality standards for other pollutants for which the receiving waters are not yet listed as impaired. As a result, EPA has made a preliminary determination to designate the MS4s on LANL property and urban portions of Los Alamos County as storm water discharges requiring NPDES permit coverage pursuant to 40 CFR § 122.26(a)(9)(i)(A), 40 CFR 122.26(a)(9)(i)(D), and 122.32(a)(2).

This designation of regulated small MS4s requiring NPDES permit coverage applies to municipal separate storm sewer systems owned or operated by:

1. LANL including the Department of Energy (DOE) and Los Alamos National Security, LLC (LANS) located within Los Alamos County
2. Los Alamos County located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census
3. New Mexico Department of Transportation (NMDOT) located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census
4. NMDOT located within and interconnected with regulated LANL (DOE and LANS) storm sewer systems.

II. BACKGROUND

As part of the Water Quality Act of 1987 (WQA), P.L. 100-4 (Feb. 4, 1987), Congress required EPA to establish permitting requirements for certain storm water discharges, including discharges from large and medium MS4s. (WQA § 405, codified as CWA § 402(p), 33 U.S.C. § 1342(p)). Congress also gave EPA authority to designate additional storm water discharges for permitting on a case-by-case basis. EPA Region 6, reacting to a petition under 40 CFR §122.26(f)(2) and (4), has made a preliminary determination to designate certain MS4s in Los Alamos County pursuant to 40 CFR § 122.26(a)(9)(i)(A), 40 CFR 122.26(a)(9)(i)(D), and 122.32(a)(2).

A. Current Status of MS4s on Los Alamos County under the NPDES Stormwater Regulations

There are currently no regulated MS4s[1] in Los Alamos County. EPA's Phase I storm water

[1] "Small MS4" is defined as all separate storm sewers that are:
(i) Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.
(ii) Not defined as "large" or "medium" municipal separate storm sewer systems pursuant to paragraphs (b)(4) and (b)(7) of this section, or designated under paragraph (a)(1)(v) of this section.
(iii) This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

regulations (55 FR 47990, November 16, 1990) required NPDES permits for large and medium MS4s, as defined at 40 § CFR 122.26(b)(4) and (7). The regulations included a list of incorporated places (cities) and counties which qualified as large or medium MS4s and required an NPDES permit. (40 CFR § 122, Appendices F through I). No areas of Los Alamos County are qualified as medium or large MS4s under the Phase I regulations. Phase I also regulated discharges of storm water associated with industrial activity and Los Alamos National Laboratory individual storm water permit NM0030759 covers certain storm water discharges falling under the definition of "industrial activity" (40 CFR§ 122.26(b)(14)). However, the majority of LANL is not considered "industrial activity."

EPA's Phase II storm water regulations (64 FR 68722, December 8, 1999) added a requirement for permitting of small MS4s that are either located in an "urbanized area" under the latest Decennial Census or otherwise designated by the NPDES permitting authority. 40 CFR § 122.32(a). Los Alamos County does not include any urbanized areas and thus was not automatically designated by rule as a small municipal separate storm sewer system requiring an NPDES storm water permit.

Los Alamos County has two designated "urban clusters," based on the results of the 2010 census.[2] According to the 2010 Census, the county has a population of 17,950. A Census-designated urban cluster is similar to an urbanized area, but contains less than 50,000 population and is not automatically designated as needing an NPDES permit. The main population center for Los Alamos County is called the Los Alamos Townsite. The Townsite is a Census Designated Place (CDP) and according to the 2010 Census the population of the CDP was 12,019.[3] According to the 2010 Census, the density of the Los Alamos Townsite CDP is 1,078.7 persons per square mile. The other densely inhabited place in the County is the community of White Rock, which is also a CDP. According to the 2010 Census the population of White Rock Canyon is 5,725 and the density is 811.8 persons per square mile. White Rock has been designated as an 'urban cluster," based on the results of the 2010 census.[4]

B. Standard for Designation

Statutory authority for case-by-case designations of discharges composed of storm water is provided by Clean Water Act §402(p)(2)(E) and §402(p)(6). Small MS4s may be designated for

---

40 CFR 122.26(b)(16).

[2] http://www.census.gov/geo/reference/ua/urban-rural-2010.html, For Census 2000, the definition of an "urban cluster" is identical to that of an "urbanized area" except that the population of a cluster is at least 2,500 people, but fewer than 50,000 people."
.html

[3] http://quickfacts.census.gov/qfd/states/35/3542320.html

[4] http://quickfacts.census.gov/qfd/states/35/3584740.html

NPDES permits pursuant to the following provisions of the storm water regulations:

- 40 CFR § 122.26(a)(9)(i)(C) -The EPA Regional Administrator determines that storm water controls are needed for the discharge based on wasteload allocations that are part of "total maximum daily loads" (TMDLs) that address the pollutant(s) of concern.

- 40 CFR § 122.26(a)(9)(i)(D) – The EPA Regional Administrator, determines that the discharge, or category of discharges within a geographic area, contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

- Pursuant to 40 CFR §§ 122.26(a)(9)(i)(A), 122.32(a)(2) and 123.35(b)(1)(i), small MS4s may be designated based upon a determination that a stormwater discharge from the small MS4 "results in or has the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts."

- Pursuant to 40 CFR §122.26(f)(2) and (4), any person may petition the Director (in this case the Regional Administrator) to require a NPDES permit for any discharge composed entirely of storm water not statutorily exempt or to designate a MS4 to be regulated.

Note that unlike the Phase I and II automatic designations by rule, neither population nor population density is a mandatory criteria under any of the designation provisions.

In this case, EPA Region 6, reacting to a petition under 40 CFR §122.26(f)(2) and (4), has made a preliminary determination to designate certain MS4s in Los Alamos County pursuant to 40 CFR § 122.26(a)(9)(i)(A), 40 CFR 122.26(a)(9)(i)(D), and 122.32(a)(2).

C. General Characteristics of Stormwater Discharges from MS4s

Discharges from MS4s are comprised primarily of urban storm water. Such discharges typically contain elevated concentrations of pollutants that collect on impervious surfaces, such as city streets, driveways, parking lots, and sidewalks. The first national assessment of urban runoff quality was undertaken for the *Nationwide Urban Runoff Program (NURP)* study in the late 1970s and early 1980s. Overall, data from the NURP study indicated that discharges from separate storm sewer systems draining runoff from residential, commercial, and light industrial areas carried more than 10 times the annual loadings of total suspended solids (TSS) than discharges from municipal sewage treatment plants that provide secondary treatment. The NURP study also indicated that runoff from residential and commercial areas carried somewhat higher annual loadings of chemical oxygen demand (COD), total lead, and total copper than effluent from secondary treatment plants, as well as high levels of bacteria during warm weather conditions. 65 Fed. Reg. at 68725. More recently, discharge monitoring data from medium and large MS4s has been compiled in the National Stormwater Quality Database (NSQD) (Pitt, et al. 2008). Although the NQSD data indicate significant variations in pollutant loadings among different land uses, the data affirm the significance of discharges from MS4s as contributors of

pollutants to waters of the United States. For example, the median TSS concentration for all samples was 62.0 mg/L, more than double the 30-day average limit of 30 mg/L for discharges from municipal sewage treatment plants that provide secondary treatment. The median fecal coliform concentration was 4300 mpn/100 mL, which exceeds the former National Recommended Water Quality Criteria (NRWQC) for bathing waters by an order of magnitude.

III. THE PETITION

A. Los Alamos County

The Petition alleges that urban storm water pollution from Los Alamos County sites, particularly urban storm water runoff from developed areas at LANL, the Los Alamos Townsite, and the community of White Rock Canyon is contributing to violations of New Mexico state WQS, including state WQS for PCBs, copper, zinc and nickel, and that as a result, these sites should be covered by an NPDES permit. In support, the Petition cites the following factual information, which EPA has verified and accepts as undisputed.

Los Alamos County is located in north-central New Mexico, approximately 60 miles northeast of Albuquerque and 25 miles northwest of Santa Fe. The main population center is called the Los Alamos Townsite. The other densely inhabited place in the County is the community of White Rock. Los Alamos County is the governing body for both Los Alamos Townsite and White Rock. Los Alamos County is also home to the 36 square mile Los Alamos National Laboratory (LANL or the Laboratory).[5,6]

The Los Alamos Townsite and the urbanized areas of LANL sit on the Pajarito Plateau. The Pajarito Plateau consists of a series of finger-like mesas separated by deep east-to-west-oriented canyons cut by streams. Most Laboratory and community developments are confined to the mesa tops. Urban landscapes at the Townsite and at include parking lots, roads, and structures

White Rock is located in eastern Los Alamos County, above and within approximately 0.75 miles of the Rio Grande River. Pajarito Canyon goes through White Rock on its way towards the Rio Grande. Canada del Buey goes along the northern part of White Rock.

LANL property contains all or parts of seven primary watersheds that drain directly into the Rio Grande. Listed from north to south, these watersheds are: Los Alamos, Sandia, Mortandad, Pajarito, Water, Ancho, and Chaquehui Canyons. The Los Alamos Townsite and the urbanized areas of LANL drain into five canyons: Los Alamos, Pueblo, Sandia, Bayo and Mortandad

---

[5] A Petition by Amigos Bravos for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit

[6] Los Alamos National Laboratory, *Los Alamos National Laboratory Environmental Report 2012*, 1-1 and 1-2 (2012) (LA-UR-13-27065) (2012 Environmental Report).

Canyons. White Rock drains into Rio Grande.

B. Water Quality Impaiments

The Petition also provides a discussion of urban-related surface water pollution as it relates to the various Canyons draining to the Rio Grande. After checking this information against the Water Quality impairment information contained in the 2012-2014 State of New Mexico Clean Water Act 303(d)/305(b) 2014 Integrated Report [hereinafter "2012-2014 303d/305b Report"], with updates from the 2014-2016 State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report [hereinafter "2014-2016 303d/305b Report"] and considering the additional information provided by LANL and Los Alamos County, EP finds the following.

Based on the 2012-2014 303d/305b Report, Los Alamos Canyon within LANL property is impaired for gross alpha, adjusted (a measurement of overall radioactivity and hereinafter referred to simply as "gross alpha"), PCBs, aluminum, copper.[7] However, based on the 2014-2016 303d/305b Report, copper has been removed from the probable causes of impairment list.[8] In addition, as stated in the Petition, New Mexico Environment Department (NMED) data show levels of PCBs in Los Alamos Canyon downgradient from most of the urbanized areas at LANL to be over 11,000 times greater than the New Mexico Human Health water quality criteria and 51 times greater than the New Mexico Wildlife Habitat water quality criteria.[9]Based on the 2012-2014 303d/305b Report, Sandia Canyon is impaired for PCBs, aluminum, copper, gross alpha, and mercury. However, based on the 2014-2016 303d/305b Report, Thallium has been added as a new impairment to the probable causes of impairment list. In addition, NMED data show levels of PCBs in Sandia Canyon below much of the urbanized areas at LANL to be over 14,000 times greater than the New Mexico Human Health water quality criteria and 66 times greater than the New Mexico Wildlife Habitat water quality criteria

Based on the 2012-2014 303d/305b Report, Mortandad Canyon is impaired for aluminum, copper, gross alpha. However, based on the 2014-2016 303d/305b Report, PCBs have been added as a new impairment to the probable causes of impairment list.

Based on the 2012-2014 303d/305b Report, Pajarito Canyon is impaired for gross alpha, aluminum, PCBs, and copper. However, based on the 2014-2016 303d/305b Report, copper has been removed and arsenic, and selenium have been added as the new impairments to the

---

[7] State of New Mexico Water Quality Control Commission, *2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report,* Appendix A (303d/305b Report).

[8] State of New Mexico Water Quality Control Commission, *2014-2016 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report,* Appendix A (303d/305b Report).

[9] NMED, *Pajarito Plateau Assessment for the 2010-2012 Integrated Report* data set with PCBs and map of sampling stations http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/Pajarito/index.html (Pajarito Plateau Study).

probable causes of impairment list. Note that the portion of Pajarito Canyon from the Rio Grande to the LANL boundary (which goes through White Rock) is not listed as impaired by NMED.

Based on the 2012-2014 303d/305b Report, Canada del Buey is impaired for PCBs, aluminum, and gross alpha for at least the portion within LANL. However, based on the 2014-2016 303d/305b Report, aluminum has been removed from the probable causes of impairment list. Note that the section from the LANL boundary to San Ildefonso Pueblo has not been assessed.

Based on both the 2012-2014 303d/305b and 2014-2016 303d/305b Report, Pueblo Canyon (Acid Canyon to headwaters) is impaired for gross alpha, PCBs, aluminum. NMED data show levels of PCBs in Pueblo Canyon right in the middle of the Los Alamos urbanized areas to be over 3,500 times greater than the New Mexico Human Health water quality criteria and 16 times greater than the New Mexico Wildlife Habitat water quality criteria.[8]

The Rio Grande (Cochiti Reservoir to San Ildefonso boundary) is listed as impaired for PCBs, turbidity, E.coli, and gross alpha. This is the downstream segment of the Rio Grande receiving most of the flows from the canyons in Los Alamos County.

Atmospheric deposition – toxics, inappropriate waste disposal, natural sources, watershed runoff following forest fire, post-development erosion and sedimentation and source unknown were listed as sources of impairment in the 2012-2014 303d/305b Report. However, in the 2014-2016 303d/305b Report, the NMED Surface Water Quality Bureau (SWQB) removed previously-reported probable source lists from the 2014-2016 303d/305bReport and they are replaced with "Source Unknown".

C. **Cause of Water Quality Impairments**

The Petition alleges that available data and studies link the water quality impairment downgradient from the Pajarito Plateau to storm water runoff from urban areas. In support, the Petition states as follows:

> LANL conducted two detailed studies of storm water runoff from the Pajarito Plateau. One study was on PCB contamination and the second was on metals contamination. In these studies, LANL collected samples from non-urban, non-laboratory influenced reference sites as well as from sites representing runoff from the urbanized areas of the Los Alamos Townsite. Neither the reference nor the urban sites were influenced by point source discharges from LANL's individual storm water permit. These studies show a significant contribution of both PCBs and metals from urban runoff on the Pajarito Plateau.[4]
>
> The LANL PCB study found 40 of the 41 Los Alamos urban storm water samples were above the New Mexico human health water quality criteria for PCBs and 19 of the 41 Los Alamos urban storm water samples were above the New Mexico wildlife habitat water

quality criteria for PCBs. (PCB Report[10] at 62). The LANL report concluded that suspended PCBs carried by urban runoff from the Los Alamos Townsite were 10 to 200 times more enriched with PCBs than at non-urban influenced Pajarito Plateau sites. (PCB Report at 62).

In 2007, the NMED collected storm water samples from the county's municipal annex into a tributary that leads into Los Alamos Canyon containing PCBs as high as 255 times the state's PCB human health water quality criteria.[11] NMED sampling data in 2006 and 2007 show levels of PCBs in storm water draining off of urban areas in Los Alamos Townsite to be more than 34,000 times greater than the NM Human Health water quality criteria.[4,6]

A Laboratory study of metals contamination in storm water runoff from urban areas at LANL and the Los Alamos Townsite found exceedances of New Mexico water quality criteria for cadmium, copper, and zinc. (Metal Report [12]at page 31, 32 and 33). In addition, the LANL metals report demonstrated that values for copper, zinc and nickel in urban storm water runoff in Los Alamos County substantially exceeded non-urban influenced Pajarito Plateau storm water concentrations. (Metal Report at p 17, 37).[4]

As noted above, 2012-2014 303d/305b Report the State of New Mexico found that water quality in Sandia, Mortandad, Pajarito, and Pueblo Canyons is impaired because of urban-related causes such as impervious surfaces, parking lots, construction and development.[5] NMED data also shows substantial water quality impairment in Los Alamos Canyon downgradient from most of the urbanized areas at LANL.[8] Note that the 2014-2016 Report now lists the probable sources as "unknown."

The LANL studies of PCB and metal contaminated runoff tie these contaminants to the urban areas of the Pajarito Plateau. In LANL's 2013 request to EPA for alternative compliance with its Clean Water Act discharge permit for industrial storm water, the Laboratory argues that the cause of its exceedances of New Mexico water quality criteria for zinc and copper is urban runoff from sources such as motor oil accumulation on parking lots, brake pad and tire material released on pavement, galvanized fencing, culverts and other building materials.[13]

In their responses to the Petition, LANL and Los Alamos County dispute certain aspects of Petitioners 'characterization of the information from the various LANL reports and the possible

---

[10] Los Alamos National Laboratory, Polychlorinated Biphenyls in Precipitation and Stormwater within the Upper Rio Grande Watershed 2 (May 2012) (LA-UR-12-1081) (PCB Report).
[11] New Mexico Environment Department, Press Release: Environment Department Issues Notice of Violation and Penalty to Los Alamos County for Allowing Discharge of PCBs into Canyon from County's Annex (December 15, 2009) (Press Release LA County Violations).
[12] Los Alamos National Laboratory, Background Metals Concentrations and Radioactivity in Storm Water on the Pajarito Plateau Northern New Mexico 2 (April 2013) (LA-UR-13-22841) (Metals Report).
[13] Alternative Compliance Request 2 at 31-2; Los Alamos National Laboratory, *Alternative Compliance Request for S-SMA-.25* 28 (April 2013) (Alternative Compliance Request .25).

sources of pollutants. For instance, both LANL and Los Alamo County state that although the PCB report identifies baseline values, it does not state that urban development in Los Alamos County is contributing large amounts of PCBs to receiving waters. Further, both LANL and Los Alamos County point out, as noted by EPA in Section III.B above, that in the 2014-2016 303d/305b Report NMED has removed the probable source lists and replaced them with "Source Unknown."

A more detailed explanation of Petition allegations, additional information provided by LANL and Los Alamos County, and EPA's preliminary response, is attached as Exhibit 3 to this document. Based on the agency's independent review of all available information, EPA finds that available information indicates the presence of pollutants associated with impairment in storm water discharges from MS4s on LANL property and urban portions of Los Alamos County. EPA further concludes these discharges may be causing or contributing to the impairments listed by the state.

III. SCOPE OF PRELIMINARY DESIGNATION

In accordance with 40 CFR §122.26(a)(9)(i)(A) and (D) and §122.32(a)(2), small MS4s may be designated based upon a determination that a storm water discharge from the small MS4 results in or has the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts. 40 CFR §122.26(a)(9)(i)(D) allows for designation of a category of discharges within a geographic area, based upon a determination that the category "contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States."

This designation of regulated small municipal separate storm sewer systems requiring NPDES permit coverage applies to municipal separate storm sewer systems owned or operated by:

1. LANL including the Department of Energy (DOE) and Los Alamos National Security, LLC (LANS) located within Los Alamos County
2. Los Alamos County located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census
3. New Mexico Department of Transportation (NMDOT) located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census
4. NMDOT located within and interconnected with regulated LANL (DOE and LANS) storm sewer systems.

Alternatives considered, but rejected, were:

- Designation of <u>all</u> MS4s in the entire Los Alamos County – rejected due to the unintended consequence of including of municipal storm sewers operated by the National Park Service (Bandolier National Monument), Los Alamos County, and NMDOT in rural areas of the county without information to evaluate contribution to water quality impairments above background levels.

- Designation of MS4s in Los Alamos Urban Cluster and LANL only – rejected since receiving waters associated with White Rock Urban Cluster are also on the NMED CWA §303(d) list as impaired for pollutants associated with urban runoff. EPA does note that while Pajarito Canyon and Canada del Buey, are listed as impaired above White Rock, the portions immediately within White Rock are not. Canada del Buey within White Rock has not been assessed. The Rio Grande below White Rock is impaired. It appears that current growth is more likely to occur in the White Rock Urban Cluster, so post development controls would likely have more effect in preventing future impacts in this area. EPA also notes that Los Alamos County is the operator of the MS4s serving both Los Alamos and White Rock and the programs Los Alamos County established for one part of the county could simply be applied (modified as necessary) in both Urban Clusters.

IV. EPA's PRELIMINARY DETERMINATION

After analysis of the Petition, the additional information provided by LANL and Los Alamos County and of the State of New Mexico's assessment of water quality in the area, EPA Region 6 has determined the available data indicates that storm water discharges from MS4s on LANL property and urban portions of Los Alamos County contribute to violations of water quality standards or have the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts. As a result, Region 6 has made a preliminary determination to designate these storm water discharges as needing NPDES permit coverage pursuant to 40 CFR § 122.26(a)(9)(i)(A), 40 CFR 122.26(a)(9)(i)(D), and 122.32(a)(2).

A. The Discharges Contribute to or have the Potential to Result in Exceedences of Water Quality Standards

As noted in the Petition, the NMED's 2006 and 2007 data shows significant exceedances of the state's human health water quality criteria for PCBs. Additional exceedances of various state water quality standards – are identified in the state's 303d/305b 2012/2014 Report, which also cites storm water runoff as a major cause for the impairment to several water courses discharging into the Rio Grande. Though the state's 2014-2016 303d/305b Report documents the possible source of impairments as "unknown", there are many more exceedances of standards in the above referenced canyons adjacent to the Los Alamos County and LANL.

Further, as discussed above the LANL PCB and metals reports, as well as its requests for alternative compliance under its individual NPDES storm water permit, indicate that many exceedances of water quality standards at the Laboratory are likely caused or contributed to by urban storm water discharges from Los Alamos County.

B. Other Considerations

EPA guidance at 40 C.F.R. § 123.35(b)(1)(ii) recommends consideration of various factors in

determining other significant water quality impacts with regard to a decision whether to designate an MS4 discharge for permitting, including discharge to sensitive waters, high growth or growth potential, high population density, contiguity to an urbanized area, significant contributor of pollutants to waters of the United States and ineffective protection of water quality by other programs. After careful consideration, EPA believes several of these factors weigh in favor of designation of storm water discharges from MS4s on LANL property and urban portions of Los Alamos County. The overall significance of the discharges from the Los Alamos County MS4s under discussion here as a contributor of pollutants to waters of the United States is discussed in section IV.A above. The remaining factors recommended for consideration under § 123.35(b)(1)(ii) are addressed below.

1. **High Population Density/ High Growth**

The main population center for Los Alamos County is Los Alamos Townsite. The Townsite is a Census Designated Place (CDP) and according to the 2010 Census the population of the CDP is 12,019, with a density of 1,078.7 persons per square mile. The other densely inhabited place in the County is the community of White Rock, which is also a CDP. According to the 2010 Census the population of White Rock Canyon is 5,725 and the density is 811.8 persons per square mile. According to US Census Bureau, the 1990 population for Los Alamos was 18,115, the 2000 population was 18,342, the 2010 population was 17,950 and the 2013 estimated population for Los Alamos County was 17,798. In their comments on the Petition, Los Alamos County noted the population decline in recent years. Urbanized Areas, the basis for automatic designation of small MS4s must have a population density of 1,000 per square mile and a minimum population of 50,000. Accordingly, high population density and high growth were not major contributing factors in EPA's designation determination.

2. **Sensitive Receiving Waters**

"Sensitive waters" would generally include public drinking water intakes and their designated protection areas; swimming beaches and waters in which swimming occurs; shellfish beds; state-designated Outstanding Resource Waters; National Marine Sanctuaries; waters within Federal, State and local parks; and waters containing threatened or endangered species and their habitat.

There are several sensitive waters downstream of the waters directly receiving runoff from the MS4s in Los Alamos County. For instance, as noted in the Petition, both Santa Fe's and Albuquerque's public water intakes are potentially affected by storm water runoff from Los Alamos County. The City of Santa Fe diverts water from the Rio Grande at its surface water

diversion, the Buckman Direct Diversion Project. Santa Fe shuts down its diversion whenever the City's monitor in Los Alamos and Pueblo Canyons detect storm water flows.[14][15][16]

The Petition also alleges the following:

> Farther downstream, the City of Albuquerque draws fifty percent or more of its drinking water from a surface diversion on the Rio Grande.[17] Consistent with this, the designated uses to be supported by New Mexico Water Quality Standards for the Rio Grande from the Cochiti Pueblo boundary to north of where runoff from Los Alamos' canyons enters the river include "primary contact" (that is, ingestion) and "public water supply."[18]
>
> ... [t]he Rio Grande feeds Cochiti Lake, which is a very popular swimming location in the summer for residents of Albuquerque and others, according to the Army Corps of Engineers. http://krqe.com/2014/05/22/cochiti-lake-swim-beach-closed-for-memorial-day/
>
> ...-[h]e Rio Grande is also adjacent to Bandelier National Monument and makes up more than four miles of this Federal park's eastern boundary.
> https://www.lib.utexas.edu/maps/national_parks/bandelier_park97.pdf
>
> Finally, although they are not threatened or endangered, the Rio Grande provides habitat for reintroduced river otters, which have been observed below the point where the Los Alamos canyons intersect the river.[4,19]

EPA has confirmed the accuracy of this information and agrees with Petitioners that the sensitive nature of the affected waters weighs in favor of designation.

3. Storm water runoff from these MS4s is not effectively addressed by other water quality programs

---

[14] LANL lies in the upper Rio Grande watershed denoted by U.S. Geological Survey (USGS) hydrologic unit codes 13020101 and 1301000. http://water.usgs.gov/wsc/reg/13.html.

[15] City of Santa Fe, *Buckman Direct Diversion Project Water Quality FAQs*, http://bddproject.org/water-quality/water-quality-faqs/.

[16] http://bddproject.org/water-quality/early-notification-system/

[17] Albuquerque Bernalillo County Water Utility Authority, *Water Resources Management Strategy Implementation 2024 Water Conservation Plan Goal and Program Update* 2 (July 2013), http://www.abcwua.org/uploads/files/2024_Water_Conservation_Plan_Update.pdf (Figure 1).

[18] 20.6.4.114.A NMAC.

[19] James N. Stuart, *River Otter Reintroduction Update* (Feb, 23, 2012) (presentation by NMG&F to N.M. Game Commission).

The individual NPDES storm water permits for LANL and Los Alamos County do not cover storm water discharges from the urbanized features that generate much of the pollution. LANL's several requests for alternative compliance under its individual storm water permit repeatedly state that there is no mechanism under the Laboratory's individual storm water permit to control the water quality exceedances found in its sampling because the pollution is caused by runoff from urban features. Because the stormwater runoff from urban features is not industrial activity, it is not covered by LANL's individual stormwater permit. NPDES coverage of stormwater runoff from MS4s on LANL property can address pollutants from current or past activities that are not considered industrial activity, but may be contributing to water quality impairment.

V. DESIGNATION PROCEDURE

EPA plans to provide public notice of its "Preliminary Designation" (this document) and a 30 day public comment period via a Federal Register Notice in the near future specifically notifying the operators of the preliminarily-designated discharges. The Region will, after consideration of all public comments, issue a final designation decision. If the designation is confirmed, the Region will proceed with permitting process.

Since the facilities to be permitted in this case are Phase II MS4s, the regulations for Phase II MS4 permits at 40 CFR § 122.34 would apply. Permit requirements will also be developed to address the impacts of the discharges on the receiving and downstream waters.

VI. CONCLUSION

For the reasons outlined above, EPA has determined that this Preliminary Designation is appropriate under the CWA and its implementing regulations. Upon final designation of the storm water discharges specified above for an NPDES permit, Region 6 will proceed with development and issuance of NPDES permits for the Los Alamos area.

3/6/2015
Dated:

Samuel Coleman, P.E.
Acting Regional Administrator, Region 6

REFERENCES

1. A Petition by Amigos Bravos for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit

2. Los Alamos National Laboratory individual stormwater permit NM0030759.

3. http://quickfacts.census.gov/qfd/states/35/3542320.html

4. http://quickfacts.census.gov/qfd/states/35/3584740.html

5. http://www.census.gov/geo/reference/ua/urban-rural-2010.html, For Census 2000, the definition of an "urban cluster" is identical to that of an "urbanized area" except that the population of a cluster is at least 2,500 people, but fewer than 50,000 people."

6. Los Alamos National Laboratory, *Los Alamos National Laboratory Environmental Report 2012*, 1-1 and 1-2 (2012) (LA-UR-13-27065) (2012 Environmental Report).

7. State of New Mexico Water Quality Control Commission, *2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report,* Appendix A (303d/305b Report).

8. NMED, *Pajarito Plateau Assessment for the 2010-2012 Integrated Report* data set with PCBs and map of sampling stations http://www.nmenv.state.nm.us/swqb/303d-305b/2010-2012/Pajarito/index.html (Pajarito Plateau Study).

9. Alternative Compliance Request 2 at 31-2; Los Alamos National Laboratory, *Alternative Compliance Request for S-SMA-.25* 28 (April 2013) (Alternative Compliance Request .25).

10. Los Alamos National Laboratory, Polychlorinated Biphenyls in Precipitation and Stormwater within the Upper Rio Grande Watershed 2 (May 2012) (LA-UR-12-1081) (PCB Report).

11. New Mexico Environment Department, Press Release: Environment Department Issues Notice of Violation and Penalty to Los Alamos County for Allowing Discharge of PCBs into Canyon from County's Annex (December 15, 2009) (Press Release LA County Violations).

12. This NMED sampling data was obtained via an Inspection of Public Records Act request. The data is included in the Appendix.

13. Los Alamos National Laboratory, Background Metals Concentrations and Radioactivity

in Storm Water on the Pajarito Plateau Northern New Mexico 2 (April 2013) (LA-UR-13-22841) (Metals Report).

14. LANL lies in the upper Rio Grande watershed denoted by U.S. Geological Survey (USGS) hydrologic unit codes 13020101 and 1301000. http://water.usgs.gov/wsc/reg/13.html.

15. City of Santa Fe, *Buckman Direct Diversion Project Water Quality FAQs*, http://bddproject.org/water-quality/water-quality-faqs/.

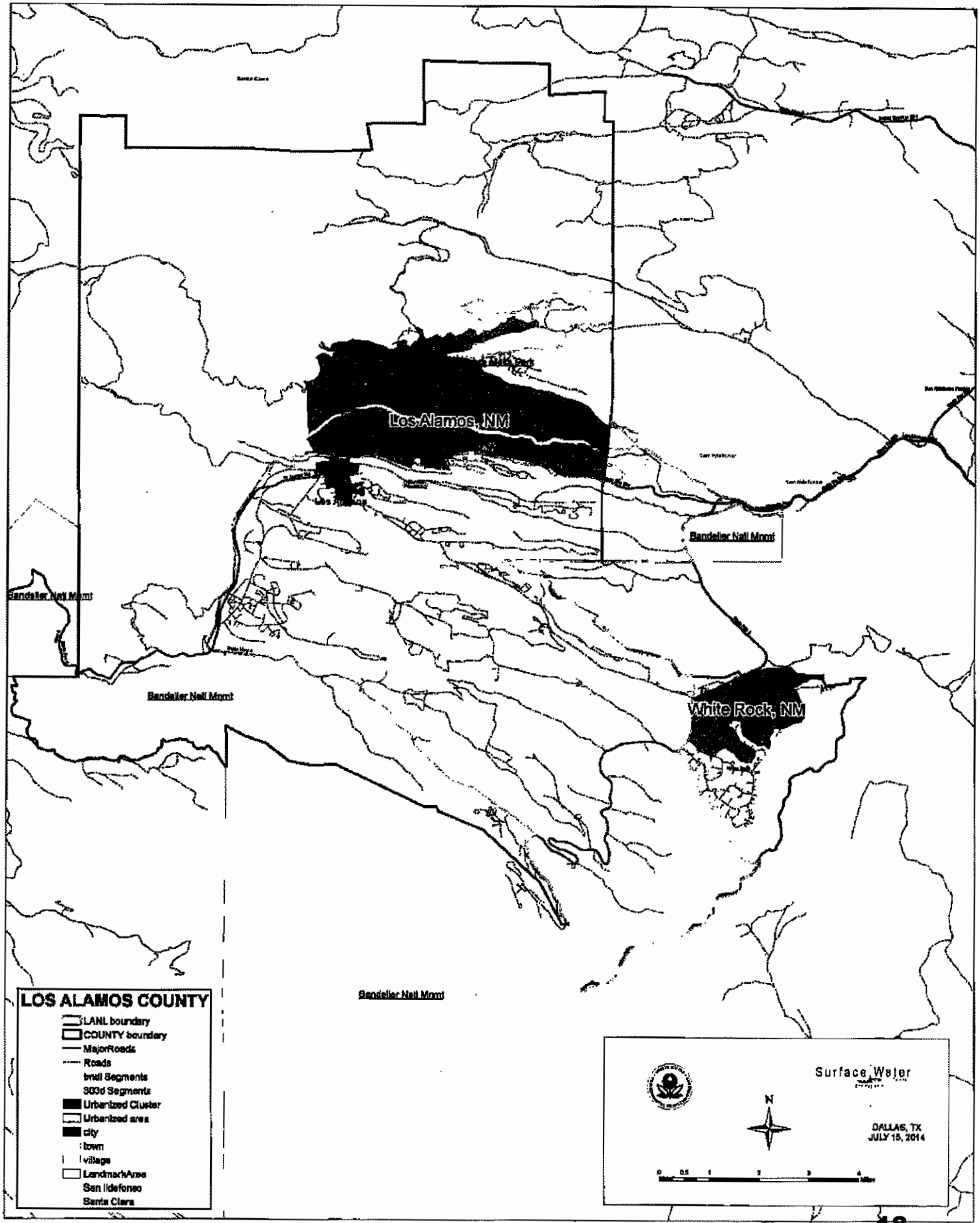
16. http://bddproject.org/water-quality/early-notification-system/

17. Albuquerque Bernalillo County Water Utility Authority, *Water Resources Management Strategy Implementation 2024 Water Conservation Plan Goal and Program Update* 2 (July 2013), http://www.abcwua.org/uploads/files/2024_Water_Conservation_Plan_Update.pdf (Figure 1).

18. 20.6.4.114.A NMAC.

19. James N. Stuart, *River Otter Reintroduction Update* (Feb, 23, 2012) (presentation by NMG&F to N.M. Game Commission).

Appendix 1: Los Alamos, LANL and NMDOT (State Hwy) Map


Los Alamos, NM
White Rock, NM
Bandelier Natl Mnmt
Bandelier Natl Mnmt
Bandelier Natl Mnmt
Bandelier Natl Mnmt
LOS ALAMOS COUNTY
LANL boundary
COUNTY boundary
MajorRoads
Roads
Surface Water
N
DALLAS, TX
JULY 15, 2014

Appendix 2: Amigos Bravos Petition and Supporting Documents

Petition and supporting documents are available online at:
http://www.epa.gov/region6/water/npdes/publicnotices/nm/nmdraft.htm

A Petition by Amigos Bravos
for a Determination that Storm Water Discharges
in Los Alamos County
Contribute to Water Quality Standards Violations
and Require a Clean Water Act Permit

June 30, 2014

Ron Curry, Regional Administrator
EPA Region 6
1445 Ross Avenue, Suite 1200, Dallas, Texas 75202
gray.david@epa.gov

Dear Administrator Curry,

As the Regional Administrator of EPA Region 6, Amigos Bravos hereby petitions you for a determination, pursuant to 40 C.F.R. 122.26(a)(9)(i)(D), that non-de minimis, currently non-NPDES permitted storm water discharges in Los Alamos County are contributing to violations of water quality standards in certain impaired waters throughout the area, and therefore require a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402(p) of the Clean Water Act and/or designation as a municipal separate storm sewer system. *See* 33 U.S.C. §§ 1342(p)(2)(E), (p)(6); 40 C.F.R. §§ 122.26(a)(1)(v), (a)(9)(i)(D), (f)(2), (f)(4).

I. Regulatory Framework

In order to achieve the Clean Water Act's (CWA or the Act) fundamental goal of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters,"33 U.S.C. § 1251(a), EPA and states delegated authority to administer the Act must establish minimum water quality standards. 33 U.S.C. § 1313; 40 C.F.R. § 131.2. These standards define "the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses." 40 C.F.R. § 131.2. New Mexico has established, and EPA has approved, water quality standards pursuant to this requirement.

In order to ensure that such water quality standards will be achieved, no person may discharge any pollutant into waters of the United States from a point source without a National Pollutant Discharge Elimination System (NPDES) permit. 33 U.S.C. §§ 1311(a), 1362(12)(A). NPDES permits must impose water quality-based effluent limitations, in addition to any applicable technology-based effluent limitations, when necessary to meet water quality standards. 33 U.S.C. § 1311(b).

The Act defines "point source" as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit . . . from which pollutants are or may

be discharged." 33 U.S.C. § 1362(14). EPA's Clean Water Act regulations further specify that "discharge of a pollutant" includes "additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man." 40 C.F.R. § 122.2. Consequently, although storm water discharges are often characterized as "non-point" in nature, it is legally well settled that "[s]torm sewers are established point sources subject to NPDES permitting requirements." *Environmental Defense Center v. EPA*, 344 F.3d 832, 841 (9th Cir. 2003) *(citing Natural Resources Defense Council v. Costle*, 568 F.2d 1369, 1379 (D.C. Cir. 1977)). As EPA has stated, "[f]or the purpose of [water quality] assessments, urban runoff was considered to be a diffuse source or nonpoint source pollution. From a legal standpoint, however, most urban runoff is discharged through conveyances such as separate storm sewers or other conveyances which are point sources under the CWA." National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990, 47,991 (Nov. 16, 1990).

Despite the fact that storm water runoff channeled through a conveyance is a point source subject to the Act's permitting requirements, EPA did not actually regulate storm water through the NPDES program until Congress amended the statute in 1987 to explicitly require it, *see* 33 U.S.C. § 1342(p), and EPA promulgated its Phase I and II regulations in 1990 and 1999, respectively.[1] As a result, the Clean Water Act now requires NPDES permits for discharges of industrial and municipal storm water. 33 U.S.C. § 1342(p)(2). While these are the only categories of storm water discharges called out for regulation in the text of the statute, Congress also created a catch-all provision directing EPA to require NPDES permits for any storm water discharge that the Administrator or the State director determines "contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States." 33 U.S.C. § 1342(p)(2)(E); 40 C.F.R. § 122.26(a)(1)(v).

This catch-all authority – known as EPA's "residual designation authority" (RDA) – is a critical tool to ensure that problematic discharges of storm water do not go unregulated. In the preamble to its Phase II Storm water regulations, EPA described the need for this authority: "EPA believes . . . that individual instances of storm water discharge might warrant special regulatory attention, but do not fall neatly into a discrete, predetermined category. Today's rule preserves the regulatory authority to subsequently address a source (or category of sources) of storm water discharges of concern on a localized or regional basis."[2]

Citizens may petition EPA for designation of storm water sources for regulation under this authority. 40 C.F.R. § 122.26(f)(2) and (f)(4). In recent years, often acting in response to such petitions, EPA and delegated states have exercised this residual designation authority on multiple

---

[1] National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990 (Nov. 16, 1990); National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. 68,722 (Dec. 8, 1999).

[2] National Pollutant Discharge Elimination System—Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, 64 Fed. Reg. at 68,781.

[3] U.S. EPA Region IX, Request for Designation of MS4 Discharges on the Island of Guam for NPDES Permit Coverage (Feb. 2011), available at http://www.epa.gov/region9/water/npdes/pdf/guam/GuamPetition.pdf

National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. at 68,781.

occasions.[3]

Once EPA has made a finding or determination that a category of discharges meets the statutory criterion of "contribut[ing] to a violation of a water quality standard," it must designate that category for regulation, and those "operators shall be required to obtain a NPDES permit." 40 C.F.R. § 122.26(a)(9)(i)(D). In other words, "the Agency's residual designation authority is not optional." *In re Storm water NPDES Petition*, 910 A.2d 824, 835-36 (Vt. 2006). As EPA has explained, "designation is appropriate as soon as the adverse impacts from storm water are recognized." Letter from G. Tracy Mehan III, EPA Assistant Administrator, to Elizabeth McLain, Secretary, Vermont Agency of Natural Resources 2 (Sept. 16, 2003).[4]

EPA has not defined a threshold level of contribution to water quality standards violations that would suffice to make such a determination. However, the agency has advised delegated states that "it would be reasonable to require permits for discharges that contribute more than *de minimis* amounts of pollutants identified as the cause of impairment to a water body." *Id.*

In New Mexico, EPA Region VI is the permitting agency. Thus, the Region would make a determination under 40 C.F.R. § 122.26(a)(9) whether a storm water discharge is contributing to a water quality standards violation or is a significant contributor of pollutants. Once you receive an RDA petition requesting that EPA exercise this authority, the Agency must make a final decision on the petition within 90 days. 40 C.F.R. § 122.26(f)(5).

In responding to similar petitions filed last year, EPA Regions I, III and IX have indicated that they considered five factors. We do not concede that these five factors are consistent with the relevant provisions of the Clean Water Act or EPA's implementing regulations; however, they provide a useful framework for this analysis. The factors are:

1. Likelihood of exposure of pollutants to precipitation at sites in the categories identified in the petition;
2. Sufficiency of available data to evaluate the contribution of stormwater discharges to water quality impairment from the targeted categories of sites;
    a. Data with respect to determining causes of impairment in receiving water quality;
    b. Data available from establishment of Total Maximum Daily Loads;

---

[3] U.S. EPA Region IX, Request for Designation of MS4 Discharges on the Island of Guam for NPDES Permit Coverage (Feb. 2011), available at http://www.epa.gov/region9/water/npdes/pdf/guam/Guam-ms4-residual-designation-memo.pdf; Vermont Agency of Natural Resources, Department of Environmental Conservation, Final Designation Pursuant to the Clean Water Act for Designated Discharges to Bartlett, Centennial, Englesby, Morehouse and Potash Brooks (Nov. 2009), available at http://www.vtwaterquality.org/stormwater/docs/swimpairedwatersheds/sw_rda_permit_FINAL.pdf; U.S. EPA Region I, Final Determination Under Section 402(p) of the Clean Water Act—Long Creek (Oct. 2009), available at http://www.epa.gov/region1/npdes/stormwater/assets/pdfs/LongCreekFinalResidualDesignation.pdf; U.S. EPA Region I, Residual Designation Pursuant to Clean Water Act—Charles River (Nov. 2008), available at http://www.epa.gov/region1/charles/pdfs/RODfinalNov12.pdf.

[4] All documents cited in this Petition and the attached Statement of Facts are provided in the Appendix, which is submitted as part of the Petition.

3. Whether other federal, state, or local programs adequately address the known stormwater discharge contribution to a violation of a water quality standard.[5]

Additional factors can be found in Addendum D to a Region VI document titled "FACT SHEET, August 29, 2003, Proposed Issuance of National Pollutant Discharge Elimination System (NPDES) Storm Water General Permit for Small Municipal Separate Storm Sewer Systems (MS4s)" [hereinafter "Region VI Fact Sheet"]. The Region VI Fact Sheet details the results of an effort by EPA to determine the need for MS4 coverage within the region. The factors listed in Addendum D were used to decide which MS4s would be included in the general permit. The factors are:

1) Does the MS4 discharge storm water to sensitive waters?

"Sensitive waters" generally include public drinking water intakes and their designated protection areas; swimming beaches and waters in which swimming occurs; shellfish beds; state-designated Outstanding Resource Waters; National Marine Sanctuaries; waters within Federal, State and local parks; and waters containing threatened or endangered species and their habitat. Discharges of storm water to sole-source aquifers will be considered by EPA Region 6 on a case-by-case basis.

2) Is the MS4 a significant contributor of pollutants to waters of the United States?

A municipal storm water discharge that has been identified as a "contributing source of pollutants" to a Clean Water Act section 303(d)-listed waterway will be considered a significant contributor of pollutants for purposes of designation decisions. A storm water discharger that is required to reduce loading through an EPA-approved Total Maximum Daily Load (TMDL) analysis shall also be considered a significant contributor of pollutants to waters of the United States.

3) Is the MS4 densely populated?

Population density is related to the level of human activity, and has been shown to be directly linked to total impervious land surfaces; impervious surfaces are directly related to pollutant loadings from storm water runoff. EPA is also taking into consideration whether or not the MS4 serves a larger seasonal or commuter population.

4) Has the MS4 experienced high population growth over the last 10 years?

---

[5] Enclosure to Letter from H. Curtis Spalding, Regional Administrator, EPA Region I, to Jeffrey Odefey, Christopher Kilian, and Jon Devine 4 (March 11, 2014); Enclosure to Letter from Shawn M. Garvin, Regional Administrator, EPA Region III, to Jeffrey Odefey, Director of Storm water Programs, American Rivers 6 (March 12, 2014); Enclosure to Letter from Jared Blumenfeld, Regional Administrator, EPA Region IX, to Jeffrey Odefey, Director of Storm water Programs, American Rivers 5 (March 12, 2014) [hereinafter "March 2014 Letters"].

High population growth or growth potential means the local residential population has grown by 10% or more, based upon the latest Census Bureau information. A discussion on selection of 10% as a high growth rate outside urbanized areas was included in the proposed Phase II regulations published January 9, 1998 (63 FR 1561).

5) Is the MS4 contiguously located to an Urbanized Area?

Jurisdictions that are directly adjacent to a U.S. Census Bureau-defined Urbanized Area will be considered to have potential impacts on a neighboring regulated municipality.

6) Is the MS4 physically interconnected to another MS4?

As required by 40 CFR 123.35 (b)(4), an MS4 located outside a UA that contributes substantially to the pollutant loadings of a physically interconnected MS4 already regulated under Phase II must be included in the program. To be "physically interconnected," the MS4, including roads with drainage systems and municipal streets, is physically connected directly to a municipal separate storm sewer of another entity.

7) Is the storm water runoff from this MS4 effectively addressed by other water quality programs?

EPA will consider, on a case-by-case basis, whether the storm water runoff from a potentially designated MS4 is effectively addressed under other regulations or programs, such as the Coastal Zone Act Reauthorization Amendments, the National Estuary Program under Clean Water Act section 320, and/or other non-point source programs. Information in support of this criterion should be provided directly to EPA Region 6 by the candidate MS4.

Region VI Fact Sheet at 51-3 (Addendum D). In the Fact Sheet EPA describes the analytical process it used: "water quality considerations and overall impacts of storm water discharges will be given more 'weight' than population characteristics in this decision-making process." *Id.* at 53.

II. Factual Background

A statement that summarizes the undisputed facts and some relevant documents is attached as Exhibit A, and is incorporated herein by reference. A summary of this statement is set forth below:

A. LAY OF THE LAND

Los Alamos County in located in north-central New Mexico, approximately 60 miles north northeast of Albuquerque and 25 miles northwest of Santa Fe. Statement of Facts in Support of Amigos Bravos' Petition at 1 (Paragraph 1) (Attached as "Exhibit A") [hereinafter "Statement of

Facts"]. The main population center is called the Los Alamos Townsite. *Id.* (Paragraph 2). The other densely inhabited place in the County is the community of White Rock Canyon. *Id.* Los Alamos County is also home to the 36 square mile Los Alamos National Laboratory (LANL or the Laboratory). *Id.* (Paragraph 4).

The Los Alamos Townsite and the urbanized areas of LANL sit on the Pajarito Plateau. *Id.* (Paragraph 5). The Pajarito Plateau consists of a series of finger-like mesas separated by deep east-to-west-oriented canyons cut by streams. *Id.* (Paragraph 6). Most Laboratory and community developments are confined to the mesa tops. *Id.* Urban landscapes at the Townsite and at LANL include parking lots, roads, and structures. *Id.* (Paragraph 7).

LANL property contains all or parts of seven primary watersheds that drain directly into the Rio Grande. *Id.* at 2 (Paragraph 11). Listed from north to south, these watersheds are: Los Alamos, Sandia, Mortandad, Pajarito, Water, Ancho, and Chaquehui Canyons. The Los Alamos Townsite and the urbanized areas of LANL drain into five canyons: Los Alamos, Pueblo, Sandia, Bayo and Mortandad Canyons. *Id.*

B. WATER IMPAIRMENT

The Statement of Facts provides a detailed discussion of urban-related surface water pollution downgradient from LANL and the Los Alamos Townsite.

1. Several Canyons are Impacted by Runoff Pollution

Los Alamos Canyon within LANL property is impaired for gross alpha (a measurement of overall radioactivity), PCBs, aluminum, copper, mercury, and zinc. *Id.* (Paragraph 16). New Mexico Environment Department (NMED) data show levels of PCBs in Los Alamos Canyon downgradient from most of the urbanized areas at LANL to be over 11,000 times greater than the New Mexico Human Health water quality criteria and 51 times greater than the New Mexico Wildlife Habitat water quality criteria. *Id.* at 3 (Paragraph 18).

Sandia Canyon is impaired for PCBs, aluminum, copper, gross alpha, and mercury. *Id.* (Paragraph 19). Post-development erosion and sedimentation are listed as sources of impairment in the 2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report [hereinafter "303b/305b Report"]. Statement of Facts at 3 (Paragraph 19). NMED data show levels of PCBs in Sandia Canyon below much of the urbanized areas at LANL to be over 14,000 times greater than the New Mexico Human Health water quality criteria and 66 times greater than the New Mexico Wildlife Habitat water quality criteria. *Id.* (Paragraph 20). In a 2013 request to EPA for alternative compliance with its Clean Water Act discharge permit, LANL explains that copper, zinc, and PCB storm water pollution above New Mexico water quality standards was from urban storm water sources. *Id.* at 7 (Paragraph 56).

Mortandad Canyon is impaired for aluminum, copper and gross alpha. *Id.* at 2 (Paragraph 15). Impervious surface/parking lot runoff, post-development erosion and sedimentation, and watershed runoff following forest fire are listed as sources of impairment in the 303b/305b Report. *Id.*

Pajarito Canyon is impaired for gross alpha, aluminum, PCBs, and copper. *Id.* at 3 (Paragraph 21). Post-development erosion and watershed runoff following forest fire are listed as sources of impairment in the 303b/305b Report. *Id.*

Pueblo Canyon is impaired for gross alpha, PCBs, aluminum, copper, and zinc. *Id.* at 2 (Paragraph 13). Industrial/commercial site storm water discharge, post-development erosion and sedimentation are listed as sources of impairment by the NMED in the 303b/305b Report. *Id.* NMED data show levels of PCBs in Pueblo Canyon right in the middle of the Los Alamos urbanized areas to be over 3,500 times greater than the New Mexico Human Health water quality criteria and 16 times greater than the New Mexico Wildlife Habitat water quality criteria. *Id.* (Paragraph 14).

2. Urban Runoff is the Cause

The data and studies summarized in the Statement of Facts firmly link the water quality impairment downgradient from the Pajarito Plateau to storm water runoff from urban areas.

LANL conducted two detailed studies of storm water runoff from the Pajarito Plateau. One study focused on PCB contamination and the second focused on metals contamination. In these studies LANL collected samples from non-urban, non-laboratory influenced reference sites as well as from sites representing runoff from the urbanized areas of the Los Alamos Townsite. Neither the reference nor the urban sites were influenced by point source discharges from LANL's individual storm water permit. These studies show a significant contribution of both PCBs and metals from urban runoff on the Pajarito Plateau.

The LANL PCB study found 40 of the 41 Los Alamos urban storm water samples were above the New Mexico human health water quality criteria for PCBs and 19 of the 41 Los Alamos urban storm water samples were above the New Mexico wildlife habitat water quality criteria for PCBs. *Id.* at 4 (Paragraphs 33-34). The LANL report concluded that suspended PCBs carried by urban runoff from the Los Alamos Townsite were 10 to 200 times more enriched with PCBs than at non-urban influenced Pajarito Plateau sites. *Id.* at 5 (Paragraph 36).

In 2007 the NMED collected storm water samples from urban sites containing PCBs as high as 255 times the state's PCB human health water quality criteria. *Id.* at 8 (Paragraph 64). NMED sampling data in 2006 and 2007 show levels of PCBs in storm water draining off of urban areas in Los Alamos Townsite to be more than 34,000 times greater than the NM Human Health water quality criteria. *Id.* (Paragraph 65).

A Laboratory study of metals contamination in storm water runoff from urban areas at LANL and the Los Alamos Townsite found exceedances of New Mexico water quality criteria for cadmium, copper, and zinc. *Id.* at 6 (Paragraphs 43-50). In addition, the LANL metals report demonstrated that values for copper, zinc and nickel in urban storm water runoff in Los Alamos County substantially exceeded non-urban influenced Pajarito Plateau storm water concentrations. *Id.* at 6-7 (Paragraphs 49-51).

As noted above, in its 303b/305b Report the State of New Mexico found that water quality in Sandia, Mortandad, Pajarito, and Pueblo Canyons is impaired because of urban-related causes such as impervious surfaces, parking lots, construction and development. *Id.* at 2-3 (Paragraphs 13, 15, 19, 21). NMED data also shows substantial water quality impairment in Los Alamos Canyon downgradient from most of the urbanized areas at LANL. *Id.* at 8 (Paragraph 64).

The LANL studies of PCB and metal contaminated runoff tie these contaminants to the urban areas of the Pajarito Plateau. In LANL's 2013 request to EPA for alternative compliance with its Clean Water Act discharge permit, the Laboratory argues that the cause of its exceedances of New Mexico water quality criteria for zinc and copper is urban runoff from sources such as motor oil accumulation on parking lots, brake pad and tire material released on pavement, galvanized fencing, culverts and other building materials. *Id.* at 5 (Paragraphs 38-41).

III. Analysis

Los Alamos County and LANL have a storm water pollution problem. The NMED's 2006 and 2007 data shows dramatic exceedances of the state's PCB human health water quality criteria. The state's 303b/305b Report documents many more exceedances of standards – for a variety of pollutants and locations – and identifies storm water runoff as a major cause. LANL's own documents confirm these findings and identify urban runoff as the culprit.

A. EVALUATION FACTORS FROM MARCH 2014 LETTERS

The evaluation factors from the March 2104 Letters confirm that this Petition should be granted.

Factor one is the **"[l]ikelihood of exposure of pollutants to precipitation at sites in the categories identified in the petition."** The 303b/305b Report and the LANL reports show that exceedances of state water quality criteria are associated with storm water; in other words, precipitation comes in contact with sites within Los Alamos County containing pollutants that end up in the storm water flow.

The Petition also meets the second factor, **"sufficiency of available data to evaluate the contribution of stormwater discharges to water quality impairment from the targeted categories of sites."** The first sub-factor is the sufficiency of "[d]ata with respect to determining causes of impairment in receiving water quality." The 2006/2007 NMED data, the 303b/305b Report, the LANL PCB and metals reports and the LANL requests for alternative compliance all provide data and/or analysis that support the Petition. The second sub-factor, the sufficiency of "[d]ata available from establishment of Total Maximum Daily Loads," is not relevant here as there are no TMDLs for the water-bodies at issue.

Finally, the third factor, **"[w]hether other federal, state, or local programs adequately address the known stormwater discharge contribution to a violation of a water quality standard,"** is also met. As noted above, there is no TMDL that addresses this storm water-borne pollution. Further, the individual permits for LANL and Los Alamos County do not cover storm water discharges from the urbanized features that generate the pollution. The LANL requests for

alternative compliance repeatedly state that there is no mechanism under the Laboratory's individual storm water permit to control the water quality exceedances found in their sampling because the pollution is caused by runoff from urban features.

EPA's Multi Sector General Permit (MSGP) provides no protection from the sources of pollution involved here. The MSGP applies to operators of storm water discharges associated with thirty different industrial activities, such as scrap recycling facilities, auto salvage yards, and steam electric generating facilities. However, the MSGP does not cover general urban storm water discharges such as the discharges from parking lots and roads that are causing the toxic runoff in Los Alamos County.

B. FACTORS FROM REGION VI FACT SHEET

Application of the factors in the Region VI Fact Sheet also supports this petition.

Factor one is, **"[d]oes the MS4 discharge storm water to sensitive waters?"** Sub-factors identified by EPA include public drinking water intakes, swimming areas, federal and state parks and threatened or endangered species. Factor one is met for a variety of reasons.

Regarding intake for public drinking water systems, both Santa Fe's and Albuquerque's public water intakes are potentially affected. The runoff from Los Alamos is enough of a public health concern to the downstream City of Santa Fe that it shuts down its surface water diversion on the Rio Grande (the receiving water for runoff from Los Alamos County) used to supply drinking water when storm water flows from Los Alamos are predicted. Statement of Facts at 8-9 (Paragraph 66). Farther downstream, the City of Albuquerque draws fifty percent or more of its drinking water from a surface diversion on the Rio Grande. *Id.* at 9 (Paragraph 67). Consistent with this, the designated uses to be supported by New Mexico Water Quality Standards for the Rio Grande from the Cochiti Pueblo boundary to north of where runoff from Los Alamos' canyons enters the river include "primary contact" (that is, ingestion) and "public water supply." *Id.* (Paragraph 68).

Regarding the sub-factor for swimming areas, the Rio Grande feeds Cochiti Lake, which is a very popular swimming location in the summer for residents of Albuquerque and others. *Id.* (Paragraph 69).

Regarding the sub-factor for federal and state parks, the Rio Grande is adjacent to Bandelier National Monument and makes up more than four miles of its eastern boundary. *Id.* (Paragraph 70).

Finally, although they are not threatened or endangered, the Rio Grande provides habitat for re-introduced river otters, which have been observed below the point where the Los Alamos canyons intersect the river. *Id.* (Paragraph 71).

Factor two is, **"[i]s the MS4 a significant contributor of pollutants to waters of the United States?"** The Region VI Fact Sheet, in explaining this factor notes, "[a] municipal storm water discharge that has been identified as a 'contributing source of pollutants' to a Clean Water Act

section 303(d)-listed waterway will be considered a significant contributor of pollutants for purposes of designation decisions." Region VI Fact Sheet at 52. The 303b/305b Report identifies storm water discharges from Los Alamos County as causes for the impairment to several water courses discharging into the Rio Grande. Further, the LANL PCB and metals reports as well as its request for alternative compliance confirm that exceedances of water quality standards are caused by storm water discharges from Los Alamos County.

Factor three, **"[i]s the MS4 densely populated?"** is met because Los Alamos has been designated as an "urban cluster," based on the results of the 2010 census. 77 Fed. Reg. 18,651, 18,662 (Mar. 27, 2012). In addition Los Alamos Townsite meets the small MS4 definition as detailed in 40 CFR 122.32 in that it has a population greater than 10,000 and a population density of greater than 1,000 per square mile. Statement of Facts at 1 (Paragraph 2). Adding to the density in Los Alamos County is its growing commuter population. As of the year 2000 the commuter population in the county was 8,673 and had grown steadily from 1980 through 2000. *Id.* (Paragraph 3). By 2010 the commuter population had grown to 9,072. *Id.*

Factor three, **"[h]as the MS4 experienced high population growth over the last 10?"** is not met based on permanent population but the commuter population has grown steadily, as noted above.

Factors five and six – whether contiguous to an urbanized area, and whether physically interconnected to another MS4 -- are not met. However, as the Region VI Fact Sheet explains at page 53: "water quality considerations and overall impacts of storm water discharges will be given more 'weight' than population characteristics in this decision-making process."

Factor seven, **"Is the storm water runoff from this MS4 effectively addressed by other water quality programs?"** is the same as the third factor from the March 2014 Letters. This factor is met as noted above.

C. THE PETITION SHOULD BE GRANTED

Petitioner Amigos Bravos, and others, have repeatedly requested LANL and Los Alamos County to address this pollution and also requested that EPA Region VI mandate such efforts. MS4 coverage is required to address this pollution.

Based on the well-documented water quality impairment caused by urban runoff from Los Alamos County sites, Amigos Bravos requests that EPA require an individual NPDES permit (or permits)[6] for these discharges into municipal separate storm sewer systems. In the alternative, Amigos Bravos requests that EPA designate the systems through which these discharges travel

[6] Because of its existing monitoring infrastructure and baseline studies as well as the unique concerns associated with storm water flows mobilizing historic contamination from the Lab, Amigos Bravos believes LANL should have an individual MS4 permit with appropriate treatment and monitoring requirements. See Letter from Rachel Conn to William Honker (June 30, 2014) (copy provided in the Appendix). However, whatever form the permit takes -- whether general or individual – EPA has a responsibility to protect water quality by subjecting urban stormwater from the Los Alamos to Clean Water Act regulation.

as a municipal separate storm sewer system under the Act and add it to the general permit.

For all the foregoing reasons, the Petition has merit and should be granted.

Sincerely,

/s/ Rachel Conn

Rachel Conn
Projects Director
Amigos Bravos

Cc: William K. Honker
Claudia V. Hosch
Brent Larsen
Nancy K. Stoner
Michael H. Shapiro
Sarah Holcomb, NMED

AMIGOS BRAVOS *Friends of the Wild Rivers*
P.O. Box 238, Taos, NM 87571
Telephone: 575.758.3474
Fax: 575.758.7345

Via USPS and email (Honker.William@epa.gov)

June 30, 2014

William K. Honker, Division Director
Water Quality Protection Division
U.S. EPA, Region VI
Fountain Place, 12th Floor, Suite 1200
1445 Ross Avenue
Dallas, TX 75202-2733

Dear Mr. Honker,

Under separate cover, Amigos Bravos is petitioning the Regional Administrator for a determination that storm water discharges in Los Alamos County are contributing to violations of water quality standards and, therefore, require NPDES permits pursuant to Section 402(p) of the Clean Water Act and/or designation as a municipal separate storm sewer system. Our petition is supported by extensive data and analysis from the New Mexico Environment Department and the Los Alamos National Laboratory. We firmly believe this petition has merit and should be granted.

If the petition is granted, your division will have the task of implementing the decision. In this letter I would like to share with you our vision of how MS4 coverage for Los Alamos could be accomplished. Urban storm water pollution from Los Alamos should be covered by an individual permit.

Both the nature of the pollution and the current monitoring infrastructure that is unique to this area support the case for coverage under an individual permit. The urban storm water runoff from developed areas at LANL and the Los Alamos Townsite are additionally harmful because of LANL's history of releases. Many of the canyons on the Pajarito Plateau have old dump sites called solid waste management units (SWMUS), which continue to release pollution. Annual reports for LANL's individual industrial storm water permit (IP) detail the scope of continuing storm water exceedances from these SWMUS. Specifically, of the 246 sites for which samples were collected, 233 of them had releases that exceeded water quality standards.[1] Some of these

[1] Los Alamos National Laboratory, *Storm Water Individual Permit Annual Report, Reporting Period: January 1–December 31, 2013, NPDES Permit No 0030759* 154 (March

exceedances continue to be over 32,000 times greater than water quality standards.[2] The urban storm water that is discharged into these canyons exacerbates and mobilizes this historic toxic pollution. The unique contamination issues associated with Los Alamos merit the individual treatment and monitoring opportunities available under an individual permit.

Another reason why an individual permit is appropriate in this case is LANL, as demonstrated by its detailed background study reports on PCBs and Metals, as well as by its extensive monitoring under the IP, has the needed monitoring infrastructure already in place as well as an extensive baseline to compare monitoring results collected under an individual MS4 permit.

An individual permit could provide for needed monitoring and specific treatment options that are not available under the general small MS4 permit. Appropriate treatment options for Los Alamos could be similar to those proposed for the individual MS4 permit for Charles County, Maryland under which treatment of twenty percent of the County's impervious surface would be required by the end of the 5-year permit term.[3]

We look forward to having a constructive dialogue with you and your staff on this topic.

Sincerely,

Rachel Conn
Projects Director
Amigos Bravos

Cc: Claudia Hosch
Brent Larsen

2014) (table 8.2), http://permalink.lanl.gov/object/tr?what=info:lanl-repo/eprr/ERID-254067.

[2] Los Alamos National Laboratory, *Renewal Application for NPDES Permit Number NM0030759, Individual Permit for Storm Water Discharges from Solid Waste Management Units and Areas of Concern, Volume 1 of 2* 133 (March 2014) (Table 10), http://permalink.lanl.gov/object/tr?what=info:lanl-repo/eprr/ERID-254864.

[3] *Maryland Department of the Environment Draft National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit* 8 (June 18, 2014) (Draft permit for Charles County, Maryland. Permit No MD0068365, http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/Documents/Charles%20Permit%20tentative%20determination.pdf.

Los Alamos
NATIONAL LABORATORY
EST 1943

Environmental Protection Division
Environmental Compliance Programs (ENV-CP)
PO Box 1663, K490
Los Alamos, New Mexico 87545
(505) 667-0666

National Nuclear Security Administration
Los Alamos Field Office, A316
3747 West Jemez Road
Los Alamos, New Mexico, 87545
(505) 667-5794/Fax (505) 667-5948

Date: November 20, 2014
Symbol: ENV-DO-14-0354
LA-UR: 14-28913, 14-28375
Locates Action No.: N/A

Mr. Brent Larsen
Chief, NPDES Permits and Technical Assistance Section (6WQ-PP)
U. S. Environmental Protection Agency (EPA), Region 6
1445 Ross Avenue
Dallas, Texas, 75202-2733

Dear Mr. Larsen:

Subject: Supplemental Information Regarding the Petition by Amigos Bravos for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit

Thank you for the opportunity to provide information regarding Los Alamos National Laboratory (LANL or the Laboratory) and the Amigos Bravos Petition for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit (the "Petition"). The Department of Energy and Los Alamos National Security, LLC ("DOE/LANS") appreciate and share Amigos Bravos' commitment to water quality in New Mexico. DOE/LANS want to ensure EPA has sufficient and accurate information upon which to base its decision on the Petition.

DOE/LANS have prepared the attached comments on the Statement of Facts submitted by Amigos Bravos in support of its Petition (Enclosure 1). DOE/LANS is also providing a description of its existing storm water programs, the areas of the Laboratory that might be considered urban in nature (Enclosure 2), and of their view regarding the factors used to determine whether a small MS4 permit is appropriate.

I. Storm Water Programs

DOE/LANS implement multiple storm water programs focused primarily on applicable NPDES permits. DOE/LANS operate under the Multi-Sector General Permit ("MSGP"), the Construction General Permit ("CGP"), and an Individual Permit (IP) which regulates storm water discharges from 405 solid waste

management units ("SWMUs") or areas of concern ("AOCs"). LANS storm water personnel maintain required documentation and perform routine inspections at all regulated sites and facilities pursuant to these permits, and maintain an extensive system of sampling stations and storm water control structures. In addition, LANS staff participate in and conduct on-site/off-site seminars, informational meetings, facility tours, and training sessions regarding discharges of storm water and regulatory requirements.

The MSGP at LANL regulates storm water discharges from metal fabrication, power generation, asphalt production (this facility is subject to effluent limits), recycling operations, transportation facilities, a nonferrous foundry and hazardous waste management units. DOE/LANS manage approximately 30 facilities that are regulated under the MSGP. These facilities are routinely inspected and their storm water discharges are monitored for benchmark parameters and water quality standards. In accordance with the 2008 MSGP and through successful implementation of MSGP requirements during the last five years, multiple benchmark parameter and impaired water constituents have been eliminated from further monitoring because analytical data indicate that concentrations of benchmark parameters are below target levels identified in the MSGP.

The CGP program applies to clearing, grading, excavating, and stockpiling performed in connection with construction activity that disturbs one or more acres or less than one acre of land that is part of a common plan of development that will ultimately disturb one or more acres of land. Since February 2012 when the current CGP was issued, DOE/LANS have submitted 25 NOIs to EPA, prepared over 65 storm water pollution prevention plans ("SWPPPs"), and have completed over 1900 site inspections. Each regulated site has a SWPPP and best management practices are employed.

The IP directs DOE/LANS to monitor storm water discharges from SWMUs and AOCs at specified sampling points. The sites regulated under the IP are a subset of the SWMUs and AOCs that are being addressed under the Resource Conservation and Recovery Act 2005 Compliance Order on Consent ("Consent Order") issued by the New Mexico Environment Department. The majority of the sites covered by the IP are remotely located and are not near current industrial activities. Finally, the IP requires, among other things, installation of control measures, monitoring, and corrective action for exceedences of target action levels. Under the IP, numerous storm water controls have been engineered and constructed.

DOE/LANS storm water programs demonstrate commitment to protecting surface waters at the Laboratory. Significant work has been completed and additional work is underway to reduce discharges of storm water at the Laboratory. For example, the completion of the Sandia Wetland Stabilization Project will reduce the potential for migration of contaminated sediments and provide the necessary controls for attainment of the dissolved copper standard in the Upper Sandia Assessment Unit. This assessment unit receives water from the most densely populated area at the Laboratory (Technical Area 3, discussed below). Detention ponds, low-head weirs, stabilization of disturbed areas, and numerous other storm water controls are installed and maintained yearly.

II. Urban Areas or Urban Clusters

The Laboratory footprint is approximately 36 square miles of mostly undeveloped land. The two areas that could potentially be characterized as urban clusters or developed in nature and that are also served by municipal storm sewer infrastructure are the Technical Area ("TA") 3 area[1] and the western one-third of the Pajarito Corridor. These areas are shown in Enclosure 2.

The TA-3 area is the location of, among other things, administrative buildings, numerous laboratory facilities, craft shops, several parking lots, a cafeteria, a New Mexico Park & Ride transfer station and two multi-story parking structures. Approximately 2900 employees work in facilities located within TA-3.

The western one-third of the Pajarito Corridor includes TAs 48, 55, 50, 63, 66, 35 and 52 (these TAs are listed roughly as one would encounter them if traveling eastbound on Pajarito Road with the exception of TAs 35 and 52, which are accessed via TA-55). These TAs include within their boundaries the plutonium facility, radiological and chemical laboratories, administrative and office buildings, craft shops, the Radioactive Liquid Waste Treatment Facility, and multiple parking lots. Approximately 2300 employees work in these areas. A map outlining the geographic boundaries of TA-3 and the western one-third of the Pajarito Corridor is attached.

The remainder of the Laboratory consists of dispersed facilities, open space in which firing sites are located and undeveloped, unoccupied land. Many of these facilities and sites are regulated under the MSGP, the IP or the 2005 Consent Order. The majority of construction projects at the Laboratory are regulated under the CGP. Additionally, the Energy Independence and Security Act requires federal development or redevelopment projects with a footprint that exceeds 5,000 square feet to maintain or restore to the maximum extent technically feasible the predevelopment hydrology of the property. MS4 regulation of undeveloped areas or sites outside of the TA-3 area and the western one-third of the Pajarito corridor, and areas or sites already regulated by the IP, Consent Order, or both, is not necessary or appropriate.

III. Factors Addressed in the Petition

The Petition lists two sets of factors used to determine whether a small MS4 permit should be required. The first set is derived from EPA response letters denying similar petitions in EPA Regions I, III and IX. The second is from a 2003 fact sheet published by Region VI when it proposed its small MS4 general permit. In addition to these factors, EPA's Office of Water also lists five factors in a fact sheet published in 2012 (EPA 833-F-00-003). In the main, the factors are similar and focus on current and forecasted populations, discharges to sensitive waters, discharges of pollutants and the adequacy of existing programs (discussed above).

With respect to populations, the number of residents of Los Alamos County is stable or decreasing. Employment levels at the Laboratory have similarly remained stable or decreased. These numbers are expected to remain the same if not decrease further.

[1] For ease of description, the adjacent and developed area of TA-60 is grouped with TA-3.

With respect to sensitive waters and discharges, five canyons are identified by Amigos Bravos as impaired from, at least in part, discharges from the Laboratory or Los Alamos County: Los Alamos, Sandia, Mortandad, Pajarito and Pueblo. Amigos Bravos listed the probable causes and sources of impairment based on the 2012-2014 303d/305b Integrated Report ("IR"); however, the 2014-2016 IR makes significant changes to those causes and sources. Copper, zinc and mercury were removed as probable constituents in several canyons and the probable source lists were removed and replaced with "Source Unknown". Probable sources are to be developed by the New Mexico Environment Department in the TMDL planning process. Details regarding each canyon's probable cause and source of impairment are provided in the attached comments on Amigos Bravos' Statement of Facts. Generally, the most recent IR listings tend to show a reduction in the constituents causing impairments and uncertainty regarding sources.

Finally, DOE/LANS are unaware of data reflecting Laboratory impacts on any drinking water system. The Los Alamos County 2013 Water Quality Report, summarizes the most recent monitoring results required by EPA's Safe Drinking Water Act program. The water in Los Alamos County meets all federal and state drinking water quality standards. Additionally, the City of Santa Fe in cooperation with LANS/DOE and NMED monitor Buckman Wells 1, 6 and 8 for LANL-derived contaminants on a quarterly basis. Samples are analyzed for radionuclides, general inorganic chemicals, metals, high explosives and organics. Data collected from 2001-2013 indicate no LANL-derived constituents are present in these wells.

IV. Conclusion

DOE/LANS appreciate the opportunity to provide this information and looks forward to participating fully in the decision making process on the Amigos Bravos Petition.

Sincerely,

Alison M. Dorries
Division Leader
Environmental Protection Division
Los Alamos National Security LLC

Sincerely,

Gene E. Turner
Environmental Permitting Manager
Environmental Projects Office
Los Alamos Field Office
U.S. Department of Energy

AMD:GET:TWL/kt

Enclosures: (1) Response to the Statement of Facts
(2) LANL NPDES MS4 Boundary Proposal

Cy: Bryan Aragon, Los Alamos County, (E-File)
Gene E. Turner, NA-LA, (E-File)
Kirsten Laskey, NA-LA, (E-File)
Lisa Cummings, NA-LA, (E-File)
Carl A. Beard, PADOPS, (E-File)

Cy (continued):
Michael T. Brandt, ADESH, (E-File)
Raeanna Sharp-Geiger, ADESH, (E-File)
Alison M. Dorries, ENV-DO, (E-File)
Michael T. Saladen, ENV-CP, (E-File)
Terrill W. Lemke, ENV-CP, (E-File)
Timothy A. Dolan, LC-ESH, (E-File)
lasomailbox@nnsa.doe.gov, (E-File)
locatesteam@lanl.gov, (E-File)
env-correspondence@lanl.gov, (E-File)

ENCLOSURE 1

Response to the Statement of Facts

ENV-DO-14-0354

LA-UR-14-28913

Date: NOV 2 0 2014

Response to the Statement of Facts

The Amigos Bravos Petition for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit included a "Statement of Facts". Below are responses to the sequentially numbered statements, where clarification or additional information is applicable. The provided information is a cooperative effort between DOE/LANS and Los Alamos County.

2. According to the 2010 Census, the county has a population of 17,950. The main population center is called the Los Alamos Townsite. The Townsite is a Census Designated Place (CDP) and according to the 2010 Census the population of the CDP was 12,019. According to the 2010 Census, the density of the Los Alamos Townsite CDP is 1,078.7 persons per square mile. The other densely inhabited place in the County is the community of White Rock Canyon, which is also a CDP. According to the 2010 Census the population of White Rock Canyon is 5,725 and the density is 811.8 persons per square mile. 2010 Census, http://quickfacts.census.gov/qfd/states/35/3542320.html

The 1990 population for Los Alamos County was 18,115, the 2000 population was 18,343, the 2010 population was 17,950 and the 2013 estimated population for Los Alamos County is 17,798. This shows that there has been very little growth to the County over the last twenty years. The persons per square mile in 2010 was 164 for the overall County.

6. The Pajarito Plateau consists of a series of finger-like mesas separated by deep east-to-west-oriented canyons cut by streams. The mesa tops range in elevation from approximately 7,800 feet on the flanks of the Jemez Mountains to about 6,200 feet at the edge of White Rock Canyon. Most Laboratory and community developments are confined to the mesa tops.

The majority of both the Laboratory and Los Alamos Townsite are confined to the mesa tops.

13. Pueblo Canyon is impaired for Gross Alpha, PCBs, Aluminum, Copper, and Zinc. Industrial/commercial site storm water discharge, post-development erosion and sedimentation are listed as sources of impairment.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

The report was adopted by the WQCC on September 9, 2014 and forwarded to EPA Region VI for approval.

Copper is not listed as a cause of impairment for the main stem of Pueblo Canyon from the headwaters to Los Alamos Canyon.

14. New Mexico Environment Department (NMED) data presented in NMED's Pajarito Plateau Assessment show levels of PCBs in Pueblo Canyon right in the middle of the urbanized areas at LANL and at Los Alamos Townsite (sampling station EO55) to be over 3,500 times greater than the New Mexico Human Health WQC and 16 times greater than the New Mexico Wildlife Habitat WQC.

The NMED Pajarito Plateau Assessment identifies a sample that was taken within Pueblo Canyon at the levels indicated, but this sample was not taken at sampling station E055. Also, none of the urbanized areas at LANL discharge to Pueblo Canyon.

15. Mortandad Canyon is impaired for Aluminum, Copper and Gross Alpha. Impervious surface/parking lot runoff, post-development erosion and sedimentation, and watershed runoff following forest fire are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 238.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

16. Los Alamos Canyon within LANL property is impaired for Gross Alpha, PCBs, Aluminum, Copper, Mercury, and Zinc. *Id.* at 125 and 127.

Copper and zinc are not listed as a cause of impairment for the main stem of Los Alamos Canyon located within LANL property. In the 2014-2016 listing cycle, mercury was removed as a cause of impairment in the assessment unit below DP Canyon to the LANL boundary.

19. Sandia Canyon is impaired for PCBs, Aluminum, Copper, Gross Alpha, and Mercury. Post-development erosion and sedimentation are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 250-51.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

Mercury is not listed as a cause of impairment in Sandia Canyon. Copper is no longer listed as a cause of impairment in the lower assessment unit of Sandia Canyon.

21. Pajarito Canyon is impaired for Gross Alpha, Aluminum, PCBs, and Copper. Post-development erosion and watershed runoff following forest fire are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 240-43.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

Copper is not listed as a cause of impairment for any of the assessment units within Pajartio Canyon.

23. The target action levels (TALs) developed in the LANL IP are based on and equivalent to New Mexico State water quality criteria. LANL IP at 3 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

37. The LANL PCB Report shows that urban development in Los Alamos County is contributing large amounts of PCBs to receiving waters. The PCB Report calculated the baseline value for total PCBs in storm water runoff from the Los Alamos Townsite to be 98 ng/L, which is substantially greater than the baseline value of 11.7 ng/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.* at 49, 64.

The PCB Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of PCBs to receiving waters.

39. Studies have shown that motor oil accumulation on parking lots that then is discharged during storm events is a large contributor of zinc in storm water. *Id.* at 15.

The referenced LANL Alternative Compliance Request cites a study identifying that motor oil contains zinc, and that motor oil accumulating on paved surfaces contributes to an industrial facility's storm water discharge. It does not state that motor oil accumulation on parking lots that then is discharged during storm events is a large contributor of zinc in storm water.

47. The maximum value for dissolved cadmium in urban runoff samples from LANL and Los Alamos Townsite was 0.894 ug/L. *Id.* at 33. The TAL and NM WQC for dissolved cadmium is 0.6 ug/L. LANL IP at 4 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

48. LANL sampling found concentrations of dissolved copper in Los Alamos urban storm water discharges at values well above the NM WQC. The maximum value for dissolved copper in urban runoff samples from LANL and Los Alamos Townsite was 31.8ug/L and the mean value was 10.17 ug/L. Metals Report at 34. The TAL and NM WQC for dissolved copper is 4.3 ug/L. LANL IP at 4 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

49. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of copper to receiving waters. The Metals Report calculated the baseline value for dissolved copper in storm water runoff in Los Alamos County to be 32.3 ug/L, which is substantially greater than the baseline value of 3.43 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. Metals Report at 17, 37.

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of copper to receiving waters.

50. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of zinc to receiving waters. The Metals Report calculated the baseline value for dissolved zinc in storm water runoff in Los Alamos County to be 1,120 ug/L, which is substantially greater than the baseline value of 109 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.*

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of zinc to receiving waters.

51. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of nickel to receiving waters. The Metals Report calculated the baseline value for dissolved nickel in storm water runoff in Los Alamos County to be 7.57 ug/L, which is substantially greater than the baseline value of 3.53 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.*

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of nickel to receiving waters.

52. LANL sampling found concentrations of dissolved zinc in Los Alamos urban storm water discharges at values well above the NM WQC. The maximum value for dissolved zinc in urban runoff samples from LANL and Los Alamos Townsite was 882 ug/L and the mean value was 181 ug/L. *Id.* at 34. The TAL and NM WQC for dissolved copper is 42 ug/L. LANL IP 4 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

53. LANL, in their 2013 Alternative Compliance request to EPA, reports that there is copper storm water pollution above NM WQC from urban development in Sandia Canyon. Alternative Compliance Request .25 at 15.

The referenced LANL Alternative Compliance Request reports that copper values exceed TALs. It does not state values exceed NM WQC.

55. LANL reports in their 2013 Alternative Compliance request to EPA that the primary source of PCB exceedances of permit TALs (and therefore NM WQC) at site monitoring area S-SMA-.25 is from urban runoff. *Id.* at 22.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

56. In their 2013 Alternative Compliance Request to EPA, LANL claims that installing controls at the storm water point sources in S-SMA-.25, a drainage area in the Sandia Canyon Watershed, would not lead to attainment of TALs (the same as NM WQC) because the primary source of exceedances are from storm water runoff from urban and natural background sources. *Id.* at 26, 28. LANL goes on to identify urban storm water runoff as the main source of TAL and NM WQC exceedances for zinc, copper and PCBs. *Id.* at 28.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

57. LANL identifies urban runoff from sources such as brake pad wear on parking lots, galvanized fencing, culverts and other building materials as the sources of zinc and copper exceedances of TALs (same as NM WQC). *Id.* at 31.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

58. Site-specific storm water run-on samples collected by LANL in Sandia Canyon demonstrate urban storm water runoff contributes to TAL (same as NM WQC) exceedances of PCBs. *Id.*

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

59. In another drainage area in Sandia Canyon (S-SMA-2.0), LANL identifies anthropogenic urban sources as one of the sources of TAL (and NM WQC) exceedances for PCBs. Alternative Compliance Request 2 at 14.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

60. LANL identifies runoff from urban development as the likely source of TAL (and NM WQC) exceedances for copper. At one specific site in Sandia Canyon, which is the focus of one of their alternative compliance request, copper exceedances from urban runoff ranged from 4.78 ug/L to 21.3 ug/L. The TAL (same as NM WQC) for copper is 4.3 ug/L. *Id.* at 16.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

61. LANL identifies runoff from urban development as the likely source of TAL (and NM WQC) exceedances for zinc. At one specific site in Sandia Canyon (S-SMA-2.0), which is the focus of one of their alternative compliance requests, zinc exceedances from urban runoff ranged from 30.9 ug/L to 61.2 ug/L. The TAL (same as NM WQC) for zinc is 42 ug/L. *Id.* at 21.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.

63. In 2009 the New Mexico Environment Department (NMED) issued a Notice of Violation (NOV) and proposed penalty of $13,200 to Los Alamos County for violating state surface water quality standards by discharging contaminated storm water.

The County has since mitigated this site and no penalty charges were paid. In 2012, the County constructed a retention pond to prevent the release of storm water from the site. Since then, a private developer has improved the site and provided water quality measures while maintaining a retention pond to prevent the release of storm water runoff from the site.

64. NMED collected storm water samples on 8/3/07 that showed a geometric mean of 0.16316 ug/ of PCBs. They collected another set of samples on 9/5/07 that revealed a geometric mean of 0.00360 ug/L of PCBs. These samples were approximately 255 times and six times the state's PCB human health WQC. The 8/3/07 sample was 12 times the PCB wildlife habitat WQC. Press Release LA County Violations.

As stated above, this site has been mitigated by building a retention pond to prevent the release of storm water runoff from the site.

65. NMED sampling data in 2007 and 2006 show levels of PCBs in storm water draining off of urban areas in Los Alamos Townsite to be more than 34,000 times greater than the NM Human Health WQC. The concentration of PCBs at Los Alamos County Yard (site 1; 28CtyYdSite1) on 8/2/06 was 22.2 ug/L, which is over 34,000 times greater than the Human Health WQC. A sample taken on 7/26/07 from Timber Ridge (Timber Ridge drainage; 28TimbRg000.2) showed a PCB concentration of 0.133 ug/L, which is 207 times greater than the Human Health WQC. Timber Ridge is a development of apartment buildings in Los Alamos Townsite that drains into Los Alamos Canyon.11

As stated above, this site has been mitigated by building a retention pond to prevent the release of storm water runoff from the site.

66. The City of Santa Fe diverts water from the Rio Grande at its surface water diversion, the Buckman Direct Diversion Project. This surface water is critical to Santa Fe's effort to meet its current and future water needs. City of Santa Fe, *How the BDD Works*, http://bddproject.org/about-the-bdd/how-the-bdd-works/. Santa Fe shuts down its diversion whenever the City's monitors in Los Alamos and Pueblo Canyons detect storm water flows. City of Santa Fe, *Buckman Direct Diversion Project Water Quality FAQs*, http://bddproject.org/water-quality/water-quality-faqs/.

It is acknowledged that the City of Santa Fe diverts water from the Rio Grande, however the overall conclusion from the Buckman Direct Diversion Project, Independent Peer Review, Final Report from December 3, 2010 states the following:

- *In summary, stormwater discharge from LANL is episodic, and does not pose a health risk, and contaminated groundwater at LANL does not impact the water quality at the BDD intake.*
- *There is no significant health risk for BDD water system consumers.*
- *Chemical and radionuclide levels in the Rio Grande are within acceptable drinking water criterias and/or are naturally occurring.*
- *There is very little if any contribution from LANL to the Rio Grande during normal baseflow conditions.*
- *Stormwater discharge from LANL does not pose a health risk.*
- *There are no contributions from LANL groundwater to the Buckman well field.*

67. The City of Albuquerque also diverts surface water from the Rio Grande and uses it for drinking water. Albuquerque Bernalillo County Water Utility Authority, *San Juan Chama Project*, http://www.abcwua.org/San_Juan_Chama_Project.aspx. The City relies upon this diversion project, referred to as the San Juan-Chama Drinking Water Project, for the majority of the City's drinking water and projects a substantial need for this surface water far into the future.12

The City of Albuquerque and the Albuquerque Bernalillo Water Utility Authority have consistently used San Juan-Chama water captured in the Rio Grande with the water delivered to their customers meeting all Safe Drinking Water Quality requirements.

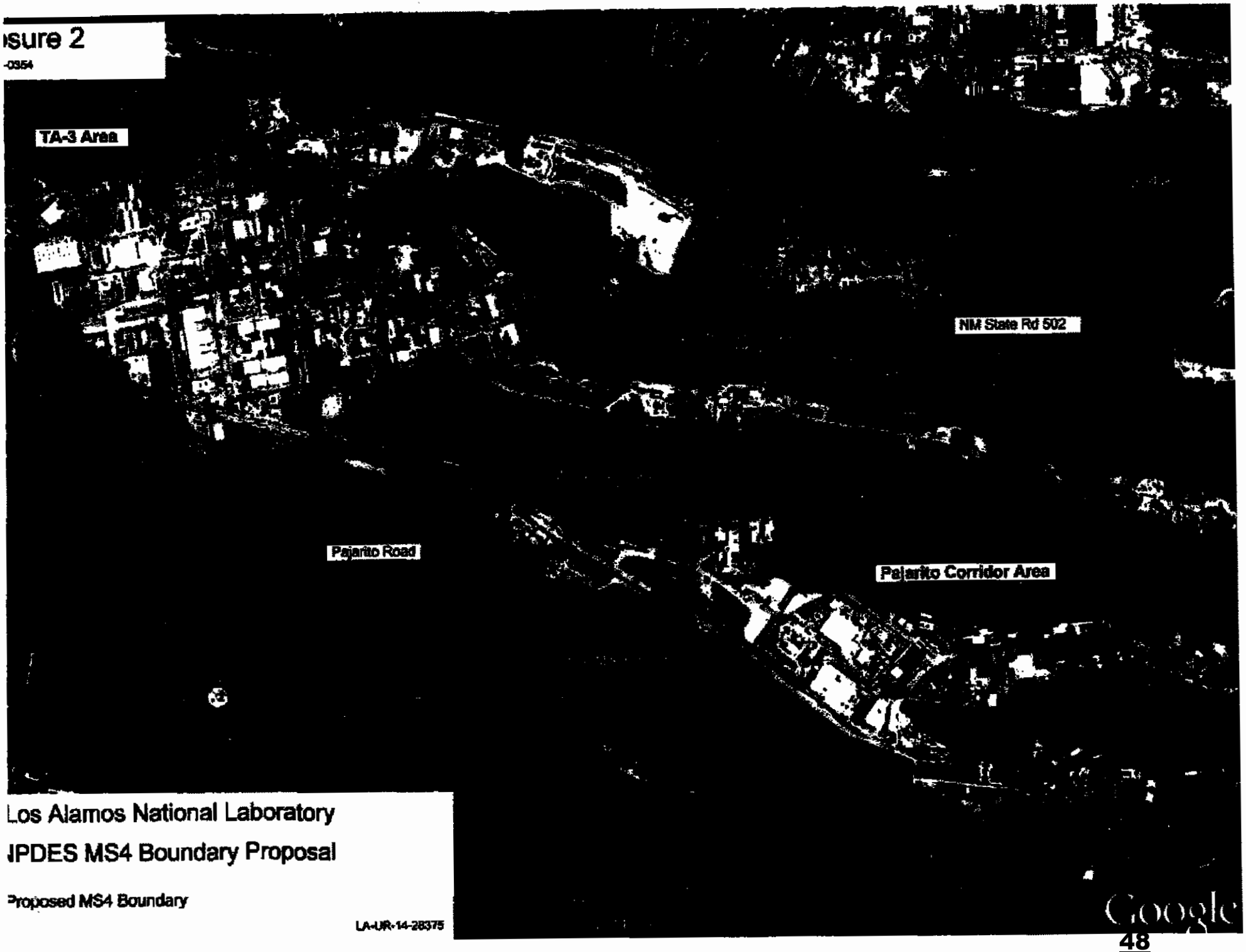
ENCLOSURE 2

LANL NPDES MS4 Boundary Proposal

ENV-DO-14-0354

LA-UR-14-28375

Date: NOV 2 0 2014



ısure 2

-0354

Los Alamos National Laboratory

IPDES MS4 Boundary Proposal

Proposed MS4 Boundary

LA-UR-14-28375

LOS ALAMOS COUNTY

1000 Central Avenue, Suite 350 - Los Alamos, NM 87544
Phone (505) 663-1750 Fax (505) 662-8079
Website: www.losalamosnm.us

October 29, 2014

Mr. Brent Larsen
Chief NPDES Permits and Technical Assistance Section
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Response to the Amigos Bravos Petition, Dated June 30th, 2014 to William K. Honker, Division Director

Dear Mr. Larsen,

Please accept this letter in response to the petition submitted by Amigos Bravos to the Environmental Protection Agency regarding an MS4 designation for Los Alamos County. This letter will focus on four main points of discussion. First, the population of Los Alamos County has shown a decline for the last thirteen years. Second, statements gathered from existing Los Alamos National Laboratory reports and studies have not been represented accurately. Third, the downstream impact of storm water runoff from Los Alamos County and the Los Alamos National Laboratory has not had an adverse impact to the various communities. Finally, if Los Alamos County and Los Alamos National Laboratory are designated as an MS4, the boundary for the designation should be discussed.

The population in 1990 for Los Alamos County was 18,115, the 2000 population was 18,343, the 2010 population was 17,950 and the 2013 estimated population for Los Alamos County was 17,798. This shows that there has been very little growth in the County over the last twenty years. In fact, there has been a decline in the population over the last thirteen years. The persons per square mile in 2010 was 164 for the overall County.

The statement of facts gathered from the various Los Alamos National Laboratory reports have not all been portrayed accurately, as you will see in the enclosed Response to the Statement of Facts document. Several of these statements have been taken out of context.

The communities downstream of Los Alamos County and Los Alamos National Laboratory have not experienced an adverse impact from the storm water runoff. The overall conclusion from the Buckman Direct Diversion (BDD) Project, Independent Peer Review, Final Report from December 3, 2010 is as following:

- Storm water discharge from Los Alamos County and Los Alamos National Laboratory is episodic, and does not pose a health risk, and contaminated groundwater at Los Alamos National Laboratory does not impact the water quality at the BDD intake.
- There is no significant health risk for BDD water system consumers.
- Chemical and radionuclide levels in the Rio Grande are within acceptable drinking water criteria's and/or are naturally occurring.
- There is very little if any contribution from Los Alamos County and Los Alamos National Laboratory to the Rio Grande during normal base flow conditions.
- Storm water discharge from Los Alamos County and Los Alamos National Laboratory does not pose a health risk.
- There are no contributions from Los Alamos County and Los Alamos National Laboratory groundwater to the Buckman well field.

Therefore, based on the above information, Los Alamos County respectfully requests that the EPA respond to the petition with a "No Designation" finding.

However, per your request, if Los Alamos County is designated as an MS4, the County requests that the boundary of the designation be limited to the Urbanized Cluster areas be confined to the mesa tops of Los Alamos town site. Los Alamos National Laboratory will provide a similar map of their requested designated areas. Additionally, the County requests that White Rock not be included in the designation. The 2010 population density of White Rock is approximately 812 people per square mile, which is below the 1,000 people per square mile requirement for an MS4 Phase II designation. Enclosed is an exhibit of the proposed boundary limits.

Additionally, if Los Alamos County is designated as an MS4, then the County requests to be covered under a General Permit. This will allow the County to partner with Los Alamos National Laboratory and utilize the resources and expertise of each agency to meet the six minimum control measures required by an MS4 designation.

If you require additional information, please contact Bryan Aragon at 505.662.8117 or bryan.aragon@lacnm.us.

Sincerely,

Harry Burgess
County Administrator

Enclosures

Response to the Statement of Facts

Below are responses to the statement of fact submitted by Amigos Bravos. The statements which are not listed below did not require a written response or were assigned a "no comment" response. These responses are a collaborative effort between Los Alamos County and Los Alamos National Laboratory.

1. Los Alamos County in located in north-central New Mexico, approximately 60 miles north northeast of Albuquerque and 25 miles northwest of Santa Fe.

We concur.

2. According to the 2010 Census, the county has a population of 17,950. The main population center is called the Los Alamos Town site. The Town site is a Census Designated Place (CDP) and according to the 2010 Census the population of the CDP was 12,019. According to the 2010 Census, the density of the Los Alamos Town site CDP is 1,078.7 persons per square mile. The other densely inhabited place in the County is the community of White Rock Canyon, which is also a CDP. According to the 2010 Census the population of White Rock Canyon is 5,725 and the density is 811.8 persons per square mile. 2010 Census, http://quickfacts.census.gov/qfd/states/35/3542320.html.

The 1990 population for Los Alamos County was 18,115, the 2000 population was 18,343, the 2010 population was 17,950 and the 2013 estimated population for Los Alamos County is 17,798. This shows that there has been very little growth to the County over the last twenty years. The persons per square mile in 2010 was 164 for the overall County.

6. The Pajarito Plateau consists of a series of finger-like mesas separated by deep east-to-west-oriented canyons cut by streams. The mesa tops range in elevation from approximately 7,800 feet on the flanks of the Jemez Mountains to about 6,200 feet at the edge of White Rock Canyon. Most Laboratory and community developments are confined to the mesa tops.

We concur, most of the Laboratory and Los Alamos Town site are confined to the mesa tops.

13. Pueblo Canyon is impaired for Gross Alpha, PCBs, Aluminum, Copper, and Zinc. Industrial/commercial site storm water discharge, post-development erosion and sedimentation are listed as sources of impairment.7

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

The report was adopted by the WQCC on September 9, 2014 and forwarded to EPA Region VI for approval.

Copper is not listed as a cause of impairment for the main stem of Pueblo Canyon from the headwaters to Los Alamos Canyon

14. New Mexico Environment Department (NMED) data presented in NMED's Pajarito Plateau Assessment show levels of PCBs in Pueblo Canyon right in the middle of the urbanized areas at LANL and at Los Alamos Town site (sampling station EO55) to be over 3,500 times greater than the New Mexico Human Health WQC and 16 times greater than the New Mexico Wildlife Habitat WQC.[8]

The NMED Pajarito Plateau Assessment identifies a sample that was taken within Pueblo Canyon at the levels indicated, but this sample was not taken at sampling station E055. Also, none of the urbanized areas at LANL discharge to Pueblo Canyon.

15. Mortandad Canyon is impaired for Aluminum, Copper and Gross Alpha. Impervious surface/parking lot runoff, post-development erosion and sedimentation, and watershed runoff following forest fire are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 238.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

16. Los Alamos Canyon within LANL property is impaired for Gross Alpha, PCBs, Aluminum, Copper, Mercury, and Zinc. *Id.* at 125 and 127.

Copper and zinc are not listed as a cause of impairment for the main stem of Los Alamos Canyon located within LANL property. In the 2014-2016 listing cycle, mercury was removed as a cause of impairment in the assessment unit below DP Canyon to LANL boundary.

19. Sandia Canyon is impaired for PCBs, Aluminum, Copper, Gross Alpha, and Mercury. Post-development erosion and sedimentation are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 250-51.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

Mercury is not listed as a cause of impairment in Sandia Canyon. Copper is no longer listed as a cause of impairment in the lower assessment unit of Sandia Canyon.

21. Pajarito Canyon is impaired for Gross Alpha, Aluminum, PCBs, and Copper. Post-development erosion and watershed runoff following forest fire are listed as sources of impairment. 303b/305b 2014 Report, Appendix A at 240-43.

In the 2014-2016 listing cycle, the SWQB removed previously-reported probable source lists from the Integrated Report (2014 - 2016 State of New Mexico Clean Water Act (CWA) Sections 303(d)/305(b) Integrated List of Assessed Surface Waters). These were replaced with "Source Unknown". Probable sources will be developed in TMDL planning process.

Copper is not listed as a cause of impairment for any of the assessment units within Pajarito Canyon.

23. The target action levels (TALs) developed in the LANL IP are based on and equivalent to New Mexico State water quality criteria. LANL IP at 3 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in the this petition report exceedances of TALs and do not reference NM WQC.

30. When collecting data for the PCB report, storm water samplers were placed in ephemeral channels around the edge of urban development in Los Alamos County and LANL. No urban samplers were located below any know areas of concentrated contamination (point sources). PCB Report at 59.

The Current understanding of geo-hydrologic modeling in the regional aquifer suggests the aquifer pumped by the Buckman well field is not directly fed by the aquifer underlying the Los Alamos County localized region.

37. The LANL PCB Report shows that urban development in Los Alamos County is contributing large amounts of PCBs to receiving waters. The PCB Report calculated the baseline value for total PCBs in storm water runoff from the Los Alamos Town site to be 98 ng/L, which is substantially greater than the baseline value of 11.7 ng/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.* at 49, 64.

The PCB Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of PCBs to receiving waters.

39. Studies have shown that motor oil accumulation on parking lots that then is discharged during storm events is a large contributor of zinc in storm water. *Id.* at 15.

The referenced LANL Alternative Compliance Request cites a study identifying that motor oil contains zinc, and that motor oil accumulating on paved surfaces contributes to an industrial facility's storm water discharge. It does not state that motor oil accumulation on parking lots that then is discharged during storm events is a large contributor of zinc in storm water.

47. The maximum value for dissolved cadmium in urban runoff samples from LANL and Los Alamos Town site was 0.894 ug/L. *Id.* at 33. The TAL and NM WQC for dissolved cadmium is 0.6 ug/L. LANL IP at 4 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

48. LANL sampling found concentrations of dissolved copper in Los Alamos urban storm water discharges at values well above the NM WQC. The maximum value for dissolved copper in urban runoff samples from LANL and Los Alamos Town site was 31.8ug/L and the mean value was 10.17 ug/L. Metals Report at 34. The TAL and NM WQC for dissolved copper is 4.3 ug/L. LANL IP at 4 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

49. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of copper to receiving waters. The Metals Report calculated the baseline value for dissolved copper in storm water runoff in Los Alamos County to be 32.3 ug/L, which is substantially greater than the baseline value of 3.43 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. Metals Report at 17, 37.

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of copper to receiving waters.

50. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of zinc to receiving waters. The Metals Report calculated the baseline value for dissolved zinc in storm water runoff in Los Alamos County to be 1,120 ug/L, which is substantially greater than the baseline value of 109 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.*

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of zinc to receiving waters.

51. The Metals Report shows that urban development in Los Alamos County is contributing large amounts of nickel to receiving waters. The Metals Report calculated the baseline value for dissolved nickel in storm water runoff in Los Alamos County to be 7.57 ug/L, which is substantially greater than the baseline value of 3.53 ug/L that was measured for reference non-urban influenced runoff in Los Alamos County. *Id.*

The Metals Report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amounts of nickel to receiving waters.

52. LANL sampling found concentrations of dissolved zinc in Los Alamos urban storm water discharges at values well above the NM WQC. The maximum value for dissolved zinc in urban runoff samples from LANL and Los Alamos Town site was 882 ug/L and the mean value was 181 ug/L. *Id.* at 34. The TAL and NM WQC for dissolved copper is 42 ug/L. LANL IP 4 (Part I).

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

53. LANL, in their 2013 Alternative Compliance request to EPA, reports that there is copper storm water pollution above NM WQC from urban development in Sandia Canyon. Alternative Compliance Request .25 at 15.

The referenced LANL Alternative Compliance Request reports that copper values exceed TALs. It does not state values exceed NM WQC.

55. LANL reports in their 2013 Alternative Compliance request to EPA that the primary source of PCB exceedances of permit TALs (and therefore NM WQC) at site monitoring area S-SMA-.25 is from urban runoff. *Id.* at 22.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

56. In their 2013 Alternative Compliance Request to EPA, LANL claims that installing controls at the storm water point sources in S-SMA-.25, a drainage area in the Sandia Canyon Watershed, would not lead to attainment of TALs (the same as NM WQC) because the primary source of exceedances are from storm water runoff from urban and natural background sources. *Id.* at 26, 28. LANL goes on to identify urban storm water runoff as the main source of TAL and NM WQC exceedances for zinc, copper and PCBs. *Id.* at 28.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

57. LANL identifies urban runoff from sources such as brake pad wear on parking lots, galvanized fencing, culverts and other building materials as the sources of zinc and copper exceedances of TALs (same as NM WQC). *Id.* at 31.

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

58. Site-specific storm water run-on samples collected by LANL in Sandia Canyon demonstrate urban storm water runoff contributes to TAL (same as NM WQC) exceedances of PCBs. *Id.*

Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.

59. In another drainage area in Sandia Canyon (S-SMA-2.0), LANL identifies anthropogenic urban sources as one of the sources of TAL (and NM WQC) exceedances for PCBs. Alternative Compliance Request 2 at 14.

> *Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.*

60. LANL identifies runoff from urban development as the likely source of TAL (and NM WQC) exceedances for copper. At one specific site in Sandia Canyon, which is the focus of one of their alternative compliance request, copper exceedances from urban runoff ranged from 4.78 ug/L to 21.3 ug/L. The TAL (same as NM WQC) for copper is 4.3 ug/L. *Id.* at 16.

> *Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.*

61. LANL identifies runoff from urban development as the likely source of TAL (and NM WQC) exceedances for zinc. At one specific site in Sandia Canyon (S-SMA-2.0), which is the focus of one of their alternative compliance requests, zinc exceedances from urban runoff ranged from 30.9 ug/L to 61.2 ug/L. The TAL (same as NM WQC) for zinc is 42 ug/L. *Id.* at 21.

> *Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented the non-numeric technology based effluent limitations. LANL documents cited in this petition report exceedances of TALs and do not reference NM WQC.*

63. In 2009 the New Mexico Environment Department (NMED) issued a Notice of Violation (NOV) and proposed penalty of $13,200 to Los Alamos County for violating state surface water quality standards by discharging contaminated storm water.10

> *The County has since mitigated this site and no penalty charges were paid. In 2012, the County constructed a retention pond to prevent the release of storm water from the site. Since then, a private developer has improved the site and provided water quality measures while maintaining a retention pond to prevent the release of storm water runoff from the site.*

64. NMED collected storm water samples on 8/3/07 that showed a geometric mean of 0.16316 ug/ of PCBs. They collected another set of samples on 9/5/07 that revealed a geometric mean of 0.00360 ug/L of PCBs. These samples were approximately 255 times and six times the state's PCB human health WQC. The 8/3/07 sample was 12 times the PCB wildlife habitat WQC. Press Release LA County Violations.

> *As stated above this site has been mitigated by building a retention pond to prevent the release of storm water runoff from the site.*

65. NMED sampling data in 2007 and 2006 show levels of PCBs in storm water draining off of urban areas in Los Alamos Town site to be more than 34,000 times greater than the NM Human Health WQC. The concentration of PCBs at Los Alamos County Yard (site 1; 28CtyYdSite1) on 8/2/06 was 22.2 ug/L, which is over 34,000 times greater than the Human Health WQC. A sample taken on 7/26/07 from Timber Ridge (Timber Ridge drainage; 28TimbRg000.2) showed a PCB concentration of 0.133 ug/L, which is 207 times greater than the Human Health WQC. Timber Ridge is a development of apartment buildings in Los Alamos Town site that drains into Los Alamos Canyon.11

As stated above this site has been mitigated by building a retention pond to prevent the release of storm water runoff from the site.

66. The City of Santa Fe diverts water from the Rio Grande at its surface water diversion, the Buckman Direct Diversion Project. This surface water is critical to Santa Fe's effort to meet its current and future water needs. City of Santa Fe, *How the BDD Works*, http://bddproject.org/about-the-bdd/how-the-bdd-works/. Santa Fe shuts down its diversion whenever the City's monitors in Los Alamos and Pueblo Canyons detect storm water flows. City of Santa Fe, *Buckman Direct Diversion Project Water Quality FAQs*, http://bddproject.org/water-quality/water-quality-faqs/.

We concur, however the overall conclusion from the Buckman Direct Diversion Project, Independent Peer Review, Final Report from December 3, 2010 states the following:

- *Storm water discharge from Los Alamos County and LANL is episodic, and does not pose a health risk, and contaminated groundwater at Los Alamos County and LANL does not impact the water quality at the BDD intake.*
- *There is no significant health risk for BDD water system consumers.*
- *Chemical and radionuclide levels in the Rio Grande are within acceptable drinking water criterias and/or are naturally occurring.*
- *There is very little if any contribution from Los Alamos County and LANL to the Rio Grande during normal base flow conditions.*
- *Storm water discharge from Los Alamos County and LANL does not pose a health risk.*
- *There are no contributions from Los Alamos County and LANL groundwater to the Buckman well field.*

67. The City of Albuquerque also diverts surface water from the Rio Grande and uses it for drinking water. Albuquerque Bernalillo County Water Utility Authority, *San Juan Chama Project*, http://www.abcwua.org/San_Juan_Chama_Project.aspx. The City relies upon this diversion project, referred to as the San Juan-Chama Drinking Water Project, for the majority of the City's drinking water and projects a substantial need for this surface water far into the future.12

The City of Albuquerque and the Albuquerque Bernalillo Water Utility Authority have consistently used San Juan-Chama water captured in the Rio Grande with the water delivered to their customers meeting all Safe Drinking Water Quality requirements.

Vicinity Map

Los Alamos County
Proposed MS-4 Boundary

Legend

- Proposed MS-4 Boundary
- Los Alamos County Boundary

Appendix 3: Summary of Issues Raised on the Petition by LANL and Los Alamos Country

	Summary of Issues Raised by Los Alamos County and the Los Alamos National Laboratory (LANL) on the Amigos Bravos Petition				
#	**Topic**	**Amigos Bravos Petition To EPA Region 6**	**Los Alamos County**	**Los Alamos National Laboratory (LANL)**	**EPA's Response**
1	**Population growth/densely populated**	The petition states that The Los Alamos has meets the small MS4 definition as detailed in 40 CFR 122.32 in that it has a population greater than 10,000 and a population density of greater than 1,000 per square mile. According to the 2010 Census, the density of the Los Alamos Town site CDP is 1,078.7 persons per square mile. The other densely inhabited place is the County is the community of White Rock Canyon and the density is 811.8 persons per square mile. Adding to the density in Los Alamos County is its growing commuter population. As of the year 2000 the commuter population in the county was 8,673 and had grown steadily from 1980 through 2000. By 2010, the commuter population had grown to 9,072.	The population in 1990 for Los Alamos was 18,115, the 2000 population was 18,343, the 2010 population was 17,950 and the 2013 estimated population for Los Alamos County was 17,798. This shows that there has been very little growth to the County over the last twenty years.	In regards to the population, the number of residents of Los Alamos County is stable or decreasing. Employment levels at the Laboratory have similarly remained stable or decreased. These numbers are expected to remain the same if not decreased further.	Note that unlike the Phase I and II automatic designations by rule, neither population nor population density is a mandatory criteria under any of the designation provisions. EPA is focusing more on the impaired waters and potential for discharges to be causing or contributing to the impairments.

2	**LANL individual storm water permit**	LANL has coverage under an individual storm water permit NM0030759 (LANL IP), issued by the Environmental Protection Agency. This permit covers 405 contaminated sites, which are called either Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs). These sites are monitored at 250 Site Monitoring Areas (SMAs). NM0030759 only regulates these sites. NM0030759 does not regulate general urbanized runoff at LANL or from the Los Alamos Townsite. See NPDES permit # NM0030759 (LANL IP). The target action levels (TALs) developed in the LANL IP are based on and equivalent to New Mexico State water quality criteria (WQC). LANL IP at 3 (Part I).	Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels (TALs) are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.	Per Page 3 of Part I.C. of the LANL IP, Applicable Target Action Levels (TALs) are not themselves effluent limitations, but are benchmarks to determine the effectiveness of control measures implemented to meet the non-numeric technology based effluent limitations. The LANL documents cited in the petition report exceedances of TALs and do not reference NM WQC.	EPA agrees that the TALs are not same as the NM WQC but there also have been several contaminants exceedances in the storm water samples collected by the NMED Pajarito Plateau Special Study / Assessment. In addition, based on both 2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report and the 2014-2016 State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, several ephemeral and intermittent waters in the Los Alamos area are listed as impaired for one or more pollutants including PCBs, gross alpha, aluminum, copper, zinc, and mercury.

3	**LANL studies of storm water runoff on PCBs contamination**	The LANL PCB study found 40 of the 41 Los Alamos urban storm water samples were above the New Mexico human health water quality criteria for PCBs and 19 of the 41 Los Alamos urban storm water samples were above the New Mexico wildlife habitat water quality criteria (WQC) for PCBs. Id. at 4 (Paragraphs 33-34). The LANL report concluded that suspended PCBs carried by urban runoff from the Los Alamos Townsite were 10 to 200 times more enriched with PCBs than at non-urban influenced Pajarito Plateau sites.	The statement of facts gathered from the various LANL reports have not all been portrayed accurately. The PCB report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amount of PCBs to receiving waters.	The PCB report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amount of PCBs to receiving waters. LANL/ Department of Energy (DOE) are unaware of data reflecting Laboratory impacts on any drinking water system. The Los Alamos County 2013 Water Quality Report, summarizes the most recent monitoring results required by EPA's Safe Drinking Water Act Program. The water is Los Alamos County meets all federal and state drinking water quality standards.	Based on both 2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report and the 2014-2016 State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, several ephemeral and intermittent waters in the Los Alamos area are listed as impaired for one or more pollutants including PCBs, gross alpha, aluminum, copper, zinc, and mercury. In addition, EPA notices that in the NMED Pajarito Plateau Special Study / Assessment, the 2007 NMED sampling data in 2007 and 2006 show levels of PCBs in storm water draining off of urban areas in Los Alamos Townsite to be more than 34,000 times greater than the NM Human Health WQC.

4	**LANL studies of storm water runoff on metal contamination**	A Laboratory study of metals contamination in storm water runoff from urban areas at LANL and the Los Alamos Townsite found exceedances of New Mexico water quality criteria for cadmium, copper, and zinc.	The statement of facts gathered from the various LANL reports have not all been portrayed accurately. The metal report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amount of metals to receiving waters.	The metal report identifies baseline values but does not state that urban development in Los Alamos County is contributing large amount of metals to receiving waters. LANL/ Department of Energy (DOE) are unaware of data reflecting Laboratory impacts on any drinking water system. The Los Alamos County 2013 Water Quality Report, summarizes the most recent monitoring results required by EPA's Safe Drinking Water Act Program. The water is Los Alamos County meets all federal and state drinking water quality standards.	Based on both 2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report and the 2014-2016 State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, several ephemeral and intermittent waters in the Los Alamos area are listed as impaired for one or more pollutants including PCBs, gross alpha, aluminum, copper, zinc, and mercury. Discharges containing these pollutants have the potential to be causing or contributing to the in stream impairments.

5	**Possible sources of pollutants in the New Mexico Clean Water Act §303(d)/305(b) Integrated Report**	Based on the **2012-2014** State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report , several ephemeral and intermittent waters in the Los Alamos area are listed as impaired for one or more pollutants including PCBs, gross alpha, aluminum, copper, zinc, and mercury and **Impervious surface/parking lot runoff, post-development erosion and sedimentation, and watershed runoff following forest fire are listed as sources of impairment.**	Los Alamos County states that in the **2014-2016** State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, the probable source lists are removed and replaced with "Source Unknown". Probable sources are to be developed by the New Mexico Environmental Department in the Total Maximum Daily Load (TMDL) planning process.	LANL states that in the **2014-2016** State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, the probable source lists are removed and replaced with "Source Unknown". Probable sources are to be developed by the New Mexico Environmental Department in the Total Maximum Daily Load (TMDL) planning process.	Based on both 2012-2014 State of New Mexico Clean Water Act 303b/305b 2014 Integrated Report and the 2014-2016 State of New Mexico Clean Water Act §303(d)/305(b) Integrated Report, several ephemeral and intermittent waters in the Los Alamos area are listed as impaired for one or more pollutants including PCBs, gross alpha, aluminum, copper, zinc, and mercury. Even though the probable causes and sources of impairments are removed and replaced with "Source Unknown", urban and LANL discharges in the area do contain these pollutants.

6	**Buckman Direct Diversion(BDD) Project**	The City of Santa Fe diverts water from the Rio Grande at its surface water diversion, the BDD Project. This surface water is critical to Santa Fe's effort to meet its current and future water needs. City of Santa Fe, How the BDD Works, http://bddproject.org/about-the-bdd/how-the-bdd-works/. Santa Fe shuts down its diversion whenever the City's monitors in Los Alamos and Pueblo Canyons detect storm water flows. City of Santa Fe, Buckman Direct Diversion Project Water Quality FAQs, http://bddproject.org/water-quality/water-quality-faqs/.	It is acknowledged that the City of Santa Fe diverts water from the Rio Grande, however the overall conclusion from the Buckman Direct Diversion Project, Independent Peer Review, Final Report from December 3, 2010 states that storm water discharge from Los Alamos County and LANL is episodic, does not pose a health risk, and contaminated ground water at Los Alamos County and LANL does not impact the water quality at the BDD intake.	It is acknowledged that the City of Santa Fe diverts water from the Rio Grande, however the overall conclusion from the Buckman Direct Diversion Project, Independent Peer Review, Final Report from December 3, 2010 states that storm water discharge from Los Alamos County and LANL is episodic, does not pose a health risk, and contaminated ground water at Los Alamos County and LANL does not impact the water quality at the BDD intake.	BDD once was shut down due to the storm water flow. Designation and regulation of storm water discharges from Los Alamos County and LANL will reduce the potential for water quality impacts in the Rio Grande.

7	**Proposed MS4 Boundary**	MS4 designation on Los Alamos County.	If Los Alamos is designated as an MS4, the County requests that the boundary of the designation be limited to the Urbanized Cluster areas be confined to the mesa tops of Los Alamos town site only. The County, requests that White Rock not be included in the designation.	LANL Proposed MS4 Boundary would cover portions of LANL closest to Los Alamos Townsite, but not all of LANL property.	This designation of regulated small municipal separate storm sewer systems requiring NPDES permit coverage applies to municipal separate storm sewer systems owned or operated by: 1. LANL located within Los Alamos County. 2. Los Alamos County located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census. 3. New Mexico Department of Transportation located within the Los Alamos and White Rock Urban Clusters, as defined by the latest decennial Census, plus serving or interconnected with regulated LANL storm sewers. Other storm sewers in more rural areas of the County would not be designated.

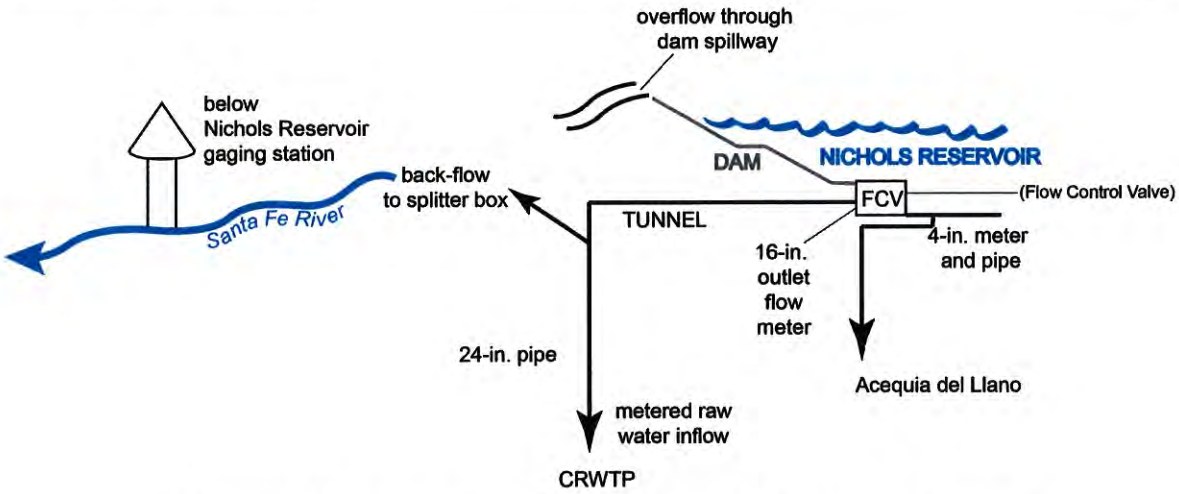


Figure 2. Schematic Illustration of Nichols Reservoir Outflow

2.2 Below Nichols Reservoir (river station no. 1)

Santa Fe River (SFR) flow just below the Nichols Reservoir is measured by a staff gage located approximately 500 feet below Nichols Dam FCV (Fig. 3). The existing gaging station at Santa Fe River below Nichols Reservoir is equipped with a pressure transducer installed in early April 2018. The transducer is installed in the pre-existing gaging station structure (gaging hut) and conduit to continuously record stage in the Santa Fe River.

Figure 3. Location map of below Nichols Reservoir station (left); Equipped gaging hut below Nichols Reservoir (right)

2.2.1 Installation of pressure transducer at below Nichols Reservoir station

Installation at the below Nichols Reservoir station started by uninstalling the pressure tubing that was installed in the pre-existing conduit. The pre-existing nitrogen gas tank was closed and pressure bled off. Black poly tubing and a fishing line were pulled through the conduit to house the pressure transducer. The junction between the conduit and gaging hut was modified by removing a ¾-in. fitting and replacing it with a 1¼-in. fitting that was cold welded into place. The pressure transducer cable was pulled up the conduit to the gaging hut, and the wellhead unit was hung on a pre-existing wooden structure (see Fig. 3). A combination lock was installed in the gaging hut with a combination of 0418. The below Nichols Reservoir station is within the boundary of the Santa Fe Watershed, and non-City staff must sign in at CRWTP in order to access this area.

2.2.2 Streamflow monitoring at below Nichols Reservoir gaging station

The pressure transducer (Solinst AquaVent) at the Nichols gaging station records data every 15 minutes. Upon installation, the pressure transducer was set to a depth to match the gage height with subsequent minor adjustments to get as close as possible to a 0.01 ft offset. As of October 25, 2018, the offset was 0.02 ft within 0.01 ft of the accuracy of the transducer (accuracy rating: 0.01 ft). A staff gage (transducer reading) of 0.67 ft is equivalent to zero measurable stream flow.

The data is stored in the wellhead unit and reports to the City of Santa Fe's SCADA system. Monitoring at the gaging station includes download of transducer data from the wellhead unit and observation of gage height at the time of download. Monitoring also includes periodic measurements of flow using a USGS Pygmy meter as described in the rating curve development section below. Water quality measurements of pH, conductivity, and temperature are also collected when measuring flow rates.

2.2.3 Rating curve development at below Nichols Reservoir station

Periodic flow measurements were performed to develop a rating curve using a USGS Price pygmy meter throughout the river monitoring seasons 2016-2018. The curve was later refined during a controlled release from the Nichols Reservoir, improving the range of flows of the rating curve. Standard Operating Procedure methodology for using the pygmy meter is included in Appendix A.

Figure 4 is a graph used to compare measured flow with transducer readings (staff gage height). The red envelope around the fit line shows the accuracy in reading (~8% error) for the entire dataset. Given the Power Curve fit, the correlation decreases for higher flow rates. Two rating curves (low flow and high flow) were developed to increase the accuracy of correlation between measured stream flow and stage height (Fig. 5). The City of Santa Fe's SCADA system is set up to report the calculated flow based on the water level at the gaging station using the equations presented in Figure 5. Realistically flows can be measured between 0.5 cfs and 25 cfs using this rating curves.

The rating curves will have to be revised if the river channel is modified. Each river monitoring season, the stream profile should be compared to the previous year's before proceeding with the same rating curve. A current stream profile is shown in Figure 6.

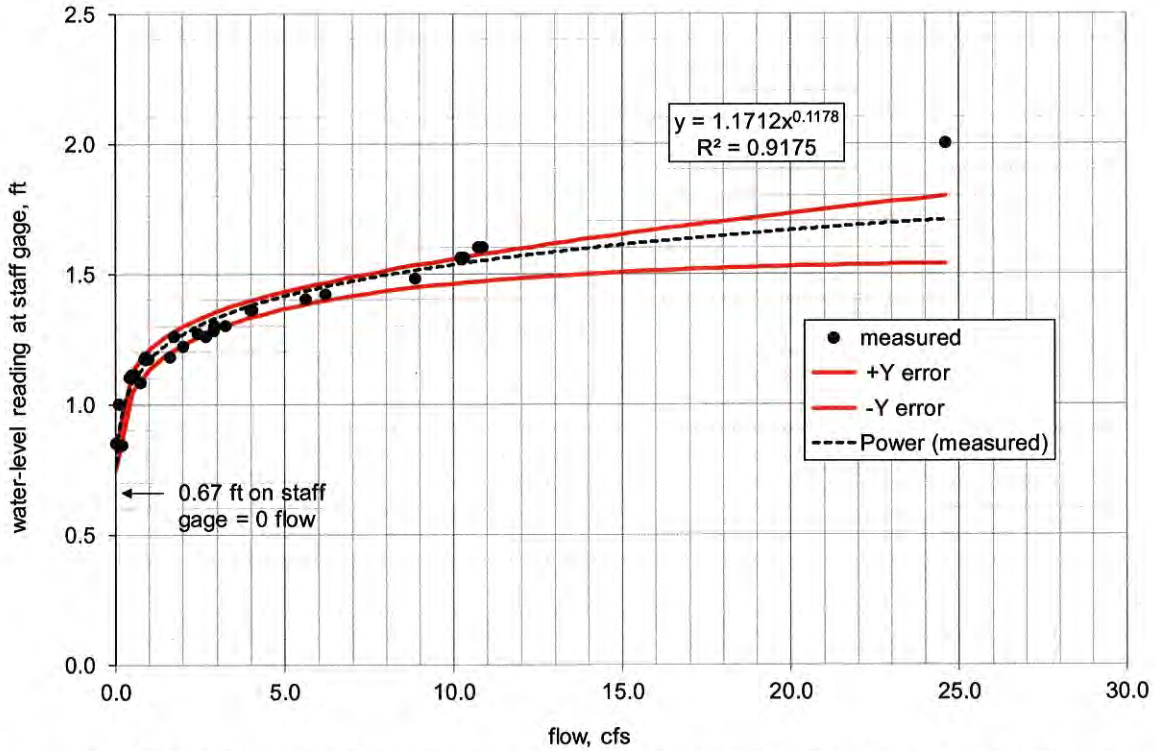


Figure 4. Graph showing correlation between staff gage height and flow for the Santa Fe River below Nichols Reservoir station, City of Santa Fe, New Mexico

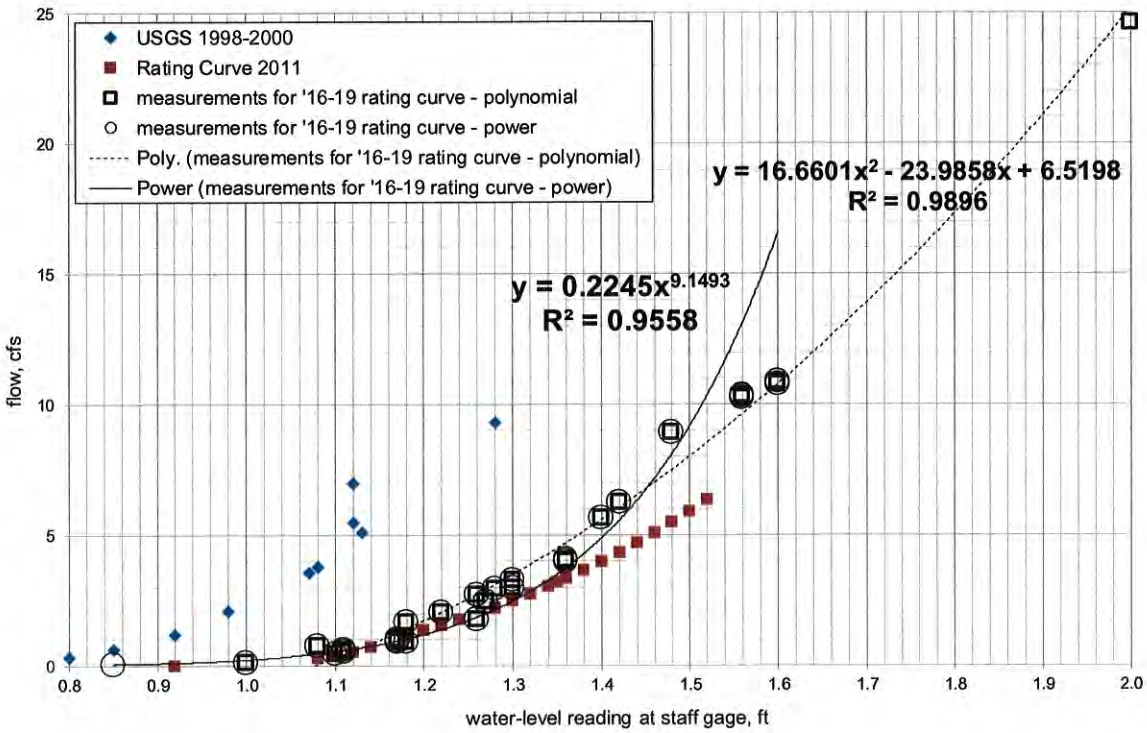


Figure 5. Rating curves (power and polynomial fits) used to calculate stream flow at below Nichols Reservoir station

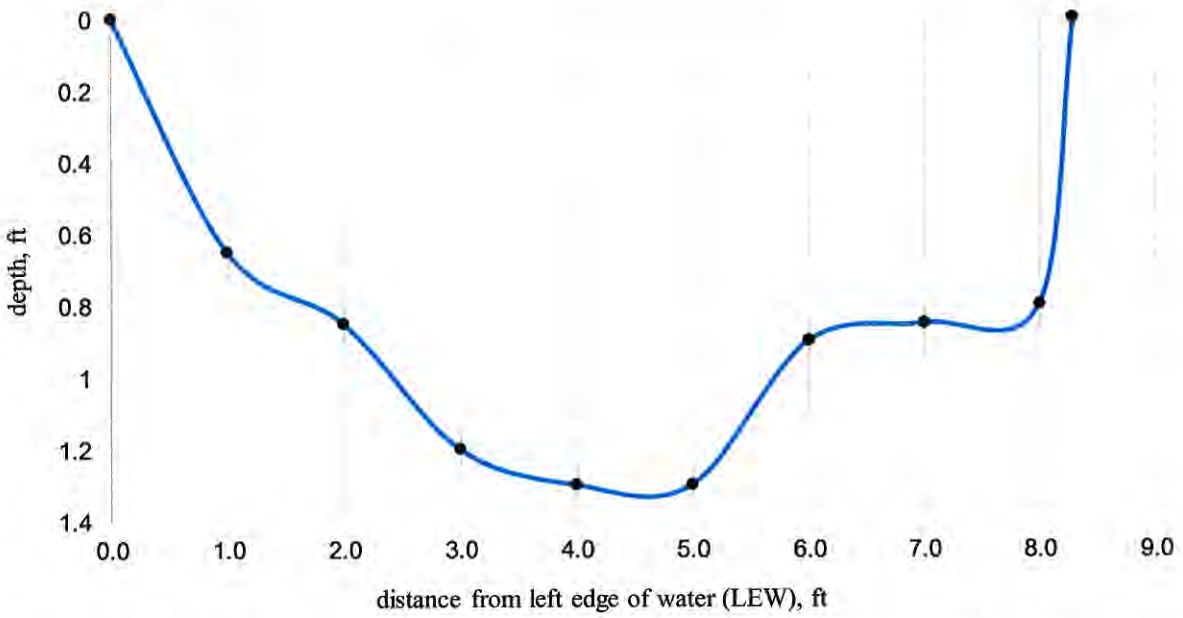


Figure 6. Stream profile at b*elow Nichols Reservoir* station, as measured April 12, 2019

The U.S. Geological Survey (USGS) performed several streamflow measurements between 1998 and 2000 at the Below Nichols gage. The USGS gage number is 08316505. Zero flow was considered as 0.67 ft on the staff gage. The below Nichols gage was operated by Watershed West, LLC under contract to the City of Santa Fe for the years 2007 through 2012. Watershed West, LLC reported streamflow data, but no corresponding gage height data. Nevertheless, it appears zero flow on the staff gage did not changed between year 2000 and 2018 (when JSAI equipped the gaging station with a transducer).

The USGS 1998-2000 data is shown on Fig. 5 as a comparsion to the 2016-2019 rating curve. Data from 2011 that was reported in the Nichols Dam Operation and Maintenance Manual is also plotted on Fig. 5. These datasets show how the rating curves change as the stream profile changes and shows the need to regularly update these rating curves.

2.3 Stilling Well A along the Bypass Channel

Stilling Well A was installed along the Bypass Channel of the Santa Fe River about 0.5 miles downstream of Nichols Dam, and just downstream of the TNC diversion, in late April 2018 (Fig. 7). The stilling well consists of a 3-inch diameter open-ended steel pipe driven into the middle of the stream channel. The pipe has ¼-inch holes and a locking box mounted on top. The Stilling well was painted green and brown so it would blend with the surrounding landscape. A pressure transducer is installed to continuously record stage in the Santa Fe River.

Figure 7. Location map of Stilling Well A station (left); Equipped Stilling Well A looking upstream along the Bypass Channel

2.3.1 Streamflow monitoring at Stilling Well A

The pressure transducer (Solinst Levelogger Junior Edge, M5) at Stilling Well A is set to record water level data every 15 minutes. Stilling Well A is also equipped with a barometric pressure logger (Solinst Barologger Edge, M1.5), used to adjust the pressure transducer data for the stilling wells and TNC Restoration Channel return. Accuracy of the pressure transducer is +/- 0.02 ft. The Stilling Well A transducer is accessed by removing the side plate from the junction box at the wellhead using a flathead screwdriver. The transducer is mounted to a rope secured to an eyelet in the stilling well box. The transducer is set 3.5 ft below the eyelet to where it is submerged below the bottom of the stream channel. A transducer reading of ≤ 0.2 ft represents zero measurable stream flow.

The data are stored in the transducer/datalogger unit and downloaded at periodic intervals. Monitoring at the gaging station also includes periodic measurements of flow using a USGS Price pygmy meter as described in the rating curve development section below. Water quality measurements for pH, conductivity, and temperature may also be measured when downloading pressure transducer data.

During the winter months, the pressure transducer is to be removed from the water and stored in the stilling well or elsewhere to prevent it from freezing in the channel.

2.3.2 Rating Curve Development at Stilling Well A

The water level recorded from the pressure transducer is compared to the rating curve (Fig. 8) that was developed from periodic streamflow measurements performed in 2018. Streamflow measurements were performed using a USGS Price pygmy meter (see Appendix A: Methodology) throughout the river monitoring season in 2018, and later refined during a controlled release from the Nichols Reservoir, improving the range of flows of the rating curve. The red envelope around the fit shows the inaccuracy in readings (<1% error). If the channel is modified or altered, the rating curve will have to be reevaluated. Each river monitoring season, the stream profile should be compared to the previous year's before proceeding with the same rating curve. A current stream profile is shown in Figure 9.

Realistically, flows between 0.2 cfs and 10 cfs can be measured using the rating curve for Stilling Well A. When flow is greater than about 10 cfs, the channel overflows flooding the surrounding bank and therefore, channelized flow cannot be measured.

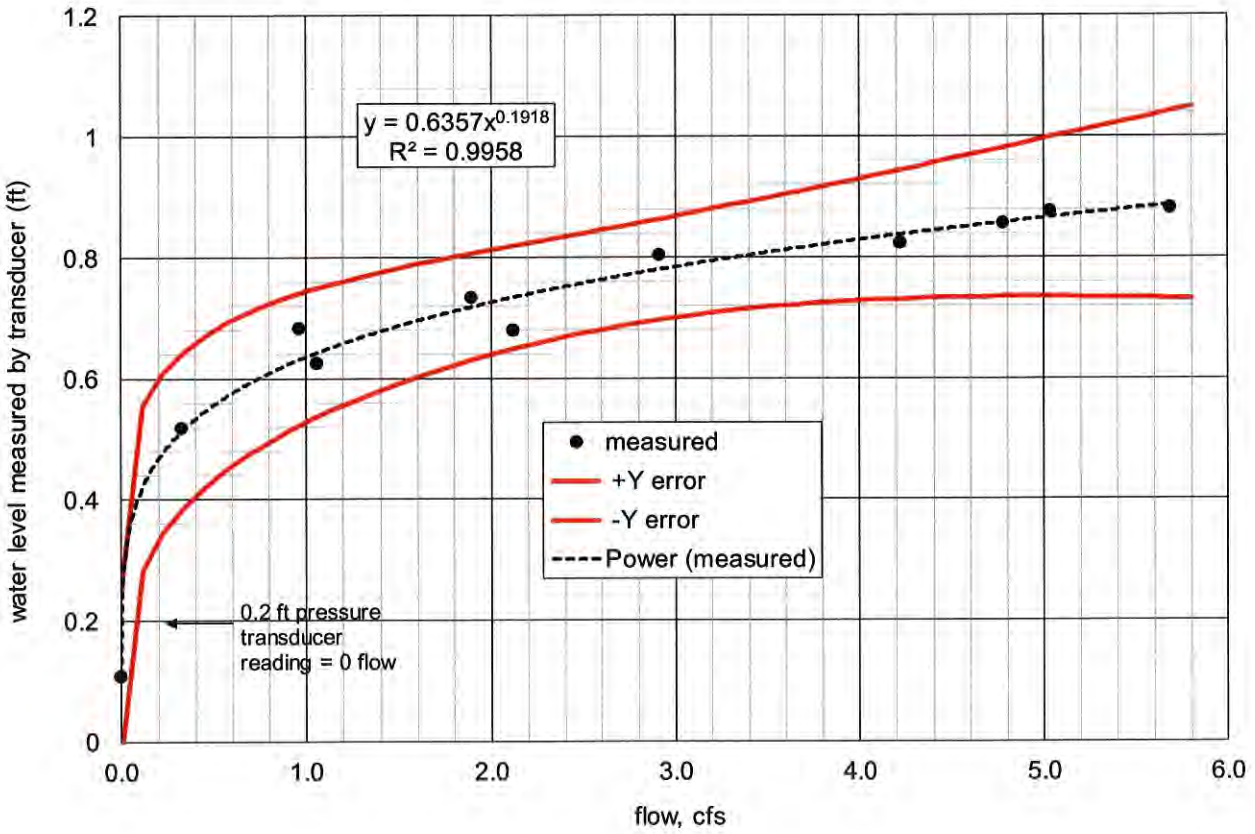


Figure 8. Rating curve for the Santa Fe River at Stilling Well A, City of Santa Fe, New Mexico

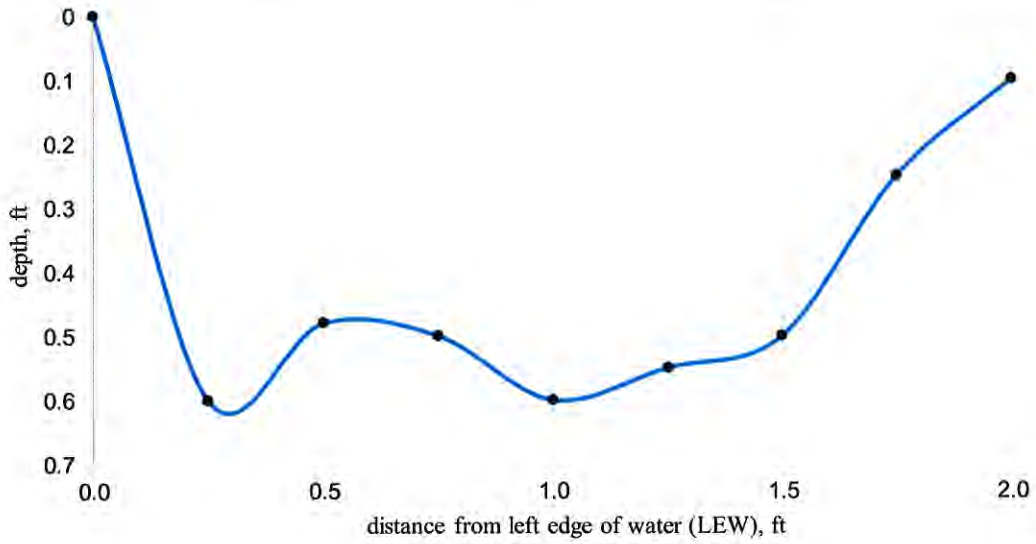


Figure 9. Stream profile at Stilling Well A station, as measured July 26, 2018

2.4 The Nature Conservancy (TNC) Restoration Channel

The Restoration Channel starts at the TNC Diversion which consists of a headgate on the Bypass Channel and rocks and sand bags on the Restoration Channel (Figs. 10 and 11). Approximately 50 ft downstream from the headgate, the Restoration Channel has a staff gage. Historically flow has been measured at this location, but as of the beginning of the year in 2019, the restoration channel had been completely blocked with sand bags. For completeness, flow methodology is detailed below.

Historically: During periods of low flow, a portable 90° v-notch weir may be temporarily installed upstream of the staff gage (and just downstream from the sand bags) to measure flow (see Appendix A: Methodology). During higher flows, flow may be measured using a USGS Pygmy meter (see Appendix A: Methodology) and the staff gage reading is recorded. Water quality measurements for pH, conductivity, and temperature are also measured in addition to channel flow rates.

Figure 10. Location map of TNC Restoration Channel Station (left); Measuring flow at The Nature Conservancy Diversion and staff gage, 5/18/17 (right)

Figure 11. Headgate at TNC Diversion (The Nature Conservancy diversion on the left, and Santa Fe River bypass channel on the right), looking upstream, 5/18/17

2.5 Monitoring at Old Stone Dam

Streamflow diverted through the Restoration Channel flows over the Old Stone Dam just upstream of Two Mile Pond, 0.6-mile downstream of Nichols Dam (Fig. 12). During seasons with low flows in which the Restoration Channel is dry, seepage has been observed from the Old Stone Dam. Monitoring during these periods of low flow includes a visual approximation of the volume of seepage, in addition to water quality measurements for pH, conductivity, and temperature.

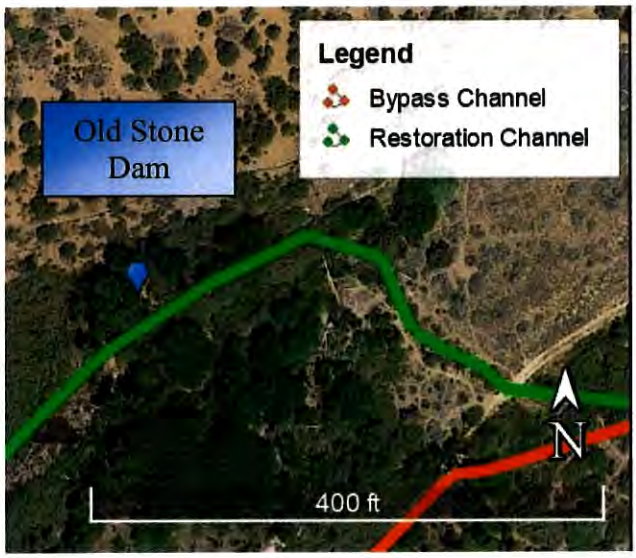


Figure 12. Location map of Old Stone Dam (left); Old Stone Dam seepage during a period where the Restoration Channel is mostly dry, looking upstream the Restoration Channel, July 26, 2018 (right)

2.6 Stilling Well B upstream of Cerro Gordo Bridge

Stilling Well B was installed upstream of the Acequia Cerro Gordo diversion, northeast of the intersection of Cerro Gordo Road and Upper Canyon Road about one mile downstream of Nichols Dam (Figs. 13 and 14). A pressure transducer is installed to continuously record stage in the Santa Fe River. The channel is equipped with a 90° v-notch weir that can measure flows (see Appendix A: Methodology).

Figure 13. Equipped Stilling Well B, looking upstream along the Bypass Channel, July 26, 2018

Figure 14. Location map of Stilling Well B Station

2.6.1 Streamflow monitoring at Stilling Well B

Stilling Well B is equipped with the same type of pressure transducer as Stilling Well A (Solinst Levelogger Junior Edge, M5) and is set to record data every 15 minutes. Stilling Well B transducer data are corrected for changes in barometric pressure using the data from the barometric pressure logger installed in Stilling Well A. Accuracy of the pressure transducer is +/- 0.02 ft. The Stilling Well B transducer is accessed by removing the side plate from the junction box at the wellhead using a flathead screwdriver. The transducer is mounted to a rope secured to an eyelet in the stilling well box. The transducer is set 3.0 ft below the eyelet to where it is submerged below the bottom of the stream channel. A transducer reading of $\leq$ 0.9 ft represents zero measurable stream flow.

The data is stored in the transducer/datalogger and downloaded at periodic intervals. Monitoring at the gaging station also includes periodic measurements of flow using a USGS Price pygmy meter as described in the rating curve development section below. Water quality measurements for pH, conductivity, and temperature may also be measured when downloading pressure transducer data.

2.6.2 Rating Curve Development at Stilling Well B

The water level recorded from the pressure transducer is compared to the rating curve (Fig. 15) that was developed from periodic streamflow measurements performed in 2018. Data were collected throughout seasonal river monitoring in 2018, and were later refined during a controlled release from the Nichols Reservoir, improving the range of flows of the rating curve. Flow in the channel is measured using the in-place 90° v-notch weir for low flow. For higher flows, a USGS Pygmy meter is used to measure flow in the vicinity of the v-notch weir, or the existing Cerro Gordo Parshall flume can be used to measure flow when conditions are such that all flow is being diverted. Methodologies for the different flow measurements are included as Appendix A. The red envelope around the fit shows the inaccuracy in readings (~13% error). As more data is collected, the rating curve fit should improve. If the channel is modified or altered, the rating curve will have to be reevaluated. Each river monitoring season, the stream profile should be compared to the previous year's before proceeding with the same rating curve. A current stream profile is shown in Figure 16.

Realistically, flows between 0.1 cfs and 25 cfs can be measured considering the geomorphology of the channel. The rating curve at this time shows flows up to 2.4 cfs, but as higher flows are observed the rating curve will be revised.

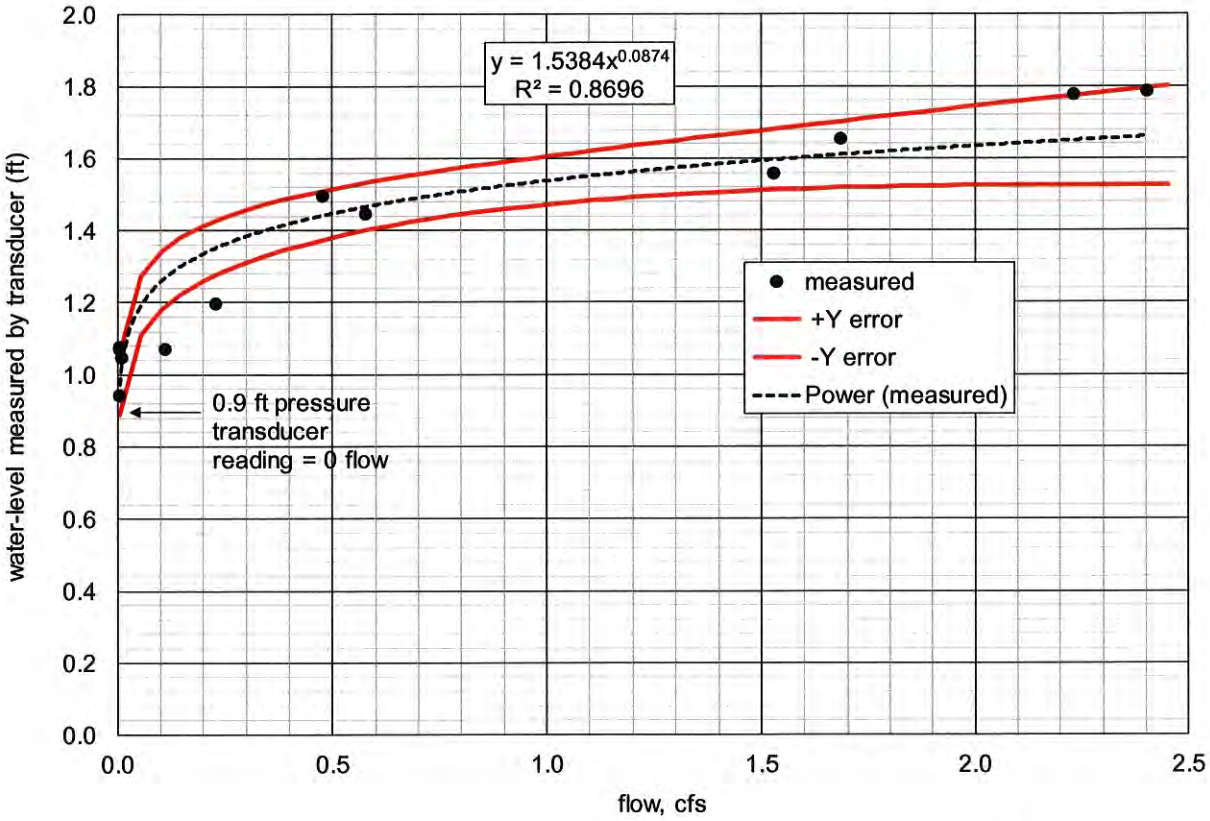


Figure 15. Rating curve for the Santa Fe River at Stilling Well B, City of Santa Fe, New Mexico

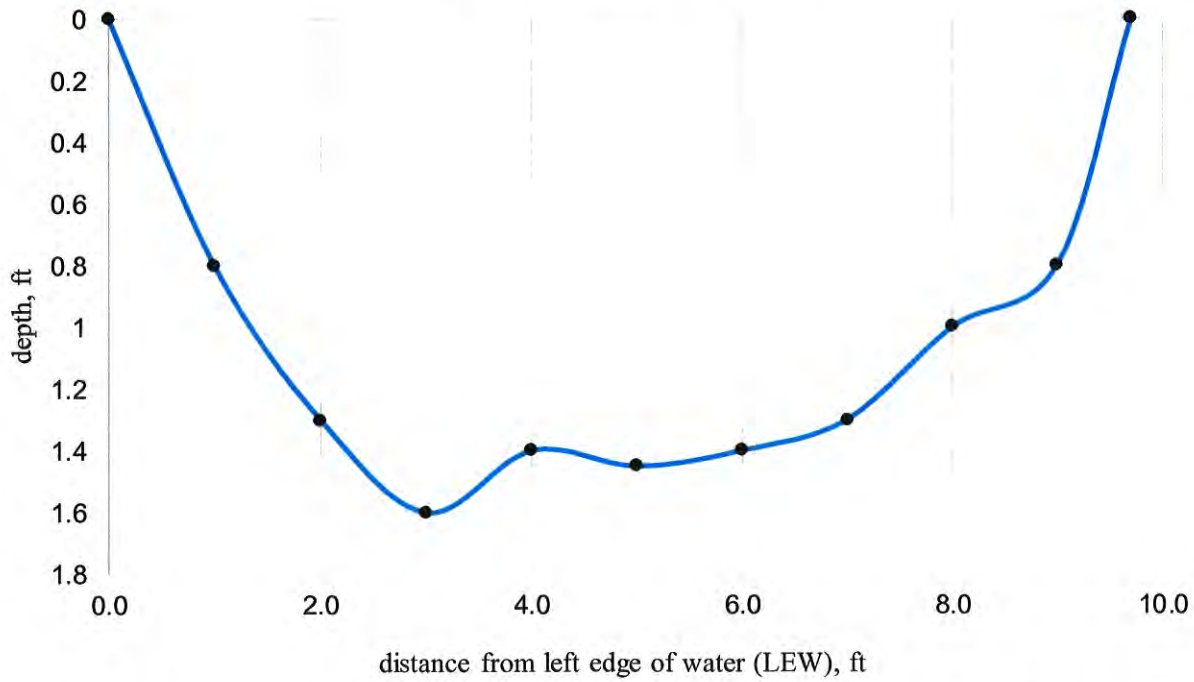


Figure 16. Stream profile at Stilling Well B station, as measured April 12, 2019

2.7 Acequia Cerro Gordo Diversion

Acequia Cerro Gordo diversion structure includes rock rubble intake on the Bypass Channel, a 2-in. Parshall flume (0.5 cfs capacity), and a concrete channel that feeds into an 8-inch diameter steel delivery pipe that takes diverted water across the valley to the north side and discharges into the ditch (Fig. 17). The Parshall flume is located below the Cerro Gordo Road Bridge near Upper Canyon Road, immediately downstream of Stilling Well B. Methodology for flow measurements using the Parshall flume is included as Appendix A. Currently, no headgate exists to control flows to the acequia. During irrigation season, monitoring consists of recording the flow at the Parshall flume. If flow exceeds the 0.5 cfs capacity, the flow must be approximated as no alternative point is appropriately located to quantify this flow. Just downstream of the flume, significant seepage has been observed from the sides of the concrete channel before the flow feeds into the 8-inch pipe.

Figure 17. Location map of Acequia Cerro Gordo (left); Cerro Gordo Diversion looking downstream (right)

2.8 Acequia Cerro Gordo Bypass

The delivery pipe to Acequia Cerro Gordo has a valved 3-in. outlet pipe where the water is diverted across the drainage that represents the Restoration Channel return (Fig. 18). When the valve on the outlet pipe is open, flow from this pipe is measured either by recording the time it takes to fill a 5-gallon bucket or by calculating flow from a horizontal pipe. An approximate measurement of flow from a full open pipe may be made by measuring the distance the stream of water travels parallel to the pipe in falling 12 inches vertically.

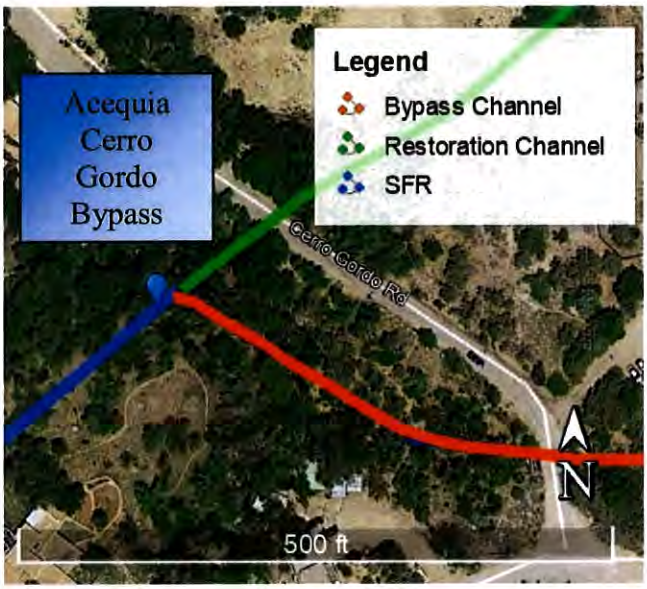


Figure 18. Location map of Acequia Cerro Gordo Bypass (left); Cerro Gordo Bypass 3-in. outlet pipe (open), looking upstream* (right)

**note that the diversion flows through the 8-inch steel delivery pipe from the right of the photo and flows left to Acequia Cerro Gordo when the outlet pipe is closed (see yellow arrow).*

2.9 The Nature Conservancy (TNC) Restoration Channel return below Two Mile Pond

Distinct from the Bypass Channel, the Restoration Channel flows from the TNC Diversion, through Two Mile Pond, and through a culvert under Cerro Gordo Road before rejoining the Bypass Channel (the Santa Fe River flows in one channel downstream of this confluence). Just upstream of Cerro Gordo Road, a bridge and 6-inch Parshall flume intersect the channel to record flow. The flume was equipped in late July 2018 with a pressure transducer like those at the Bypass Channel stilling wells (Solinst Levelogger Junior Edge, M5).

2.9.1 Installation of pressure transducer at the TNC Restoration Channel return

Flow in the Restoration Channel return is measured at a footbridge and Parshall flume upstream of Cerro Gordo Road, upstream of the confluence with the Bypass Channel (Fig. 19). The location is equipped with a 6-inch Parshall flume to measure flow (see Appendix A: methodology). In late July 2018, a pressure transducer was installed to provide a continuous record of flow, and set to record data every 15 minutes. Similar to the pressure transducers deployed at Stilling Wells A and B, the pressure transducer accuracy is +/- 0.02 ft. Based on constraints of the Parshall flume construction, the pressure transducer is 0.15 ft above the bottom of the flume. The average offset in readings are 0.14 ft, within the margin of accuracy of the pressure transducer. TNC Restoration Channel return transducer data are corrected for changes in barometric pressure using the data from the barometric pressure logger installed in Stilling Well A. The TNC Restoration Channel return transducer is accessed by removing a horizontal steel plate from the north side of the top of the flume using a Phillips head screwdriver.

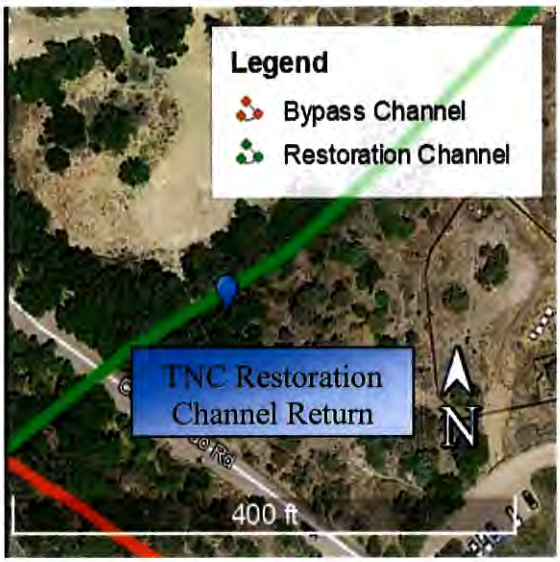


Figure 19. Parshall flume gage and steel plate (top left), July 2018;

Location map of TNC Restoration Channel Return below Two Mile (top right)

Pressure transducer housing along the Restoration Channel (bottom left), July 2018

2.10 Santa Fe River Below Two Mile Pond (river station no. 2)

The Santa Fe River Below Two Mile Pond is 1.1-mile downstream from Nichols Reservoir. No permanent instrumentation is installed at this location. Seepage studies of the Santa Fe River in the spring and summer months include measuring streamflow at SFR Below Two Mile Pond. A USGS Pygmy meter is used to measure flow (see Appendix A: methodology). The monitoring location is just downstream of the confluence of the Bypass Channel and Restoration Channel. Monitoring also includes water quality measurements for pH, conductivity, and temperature.

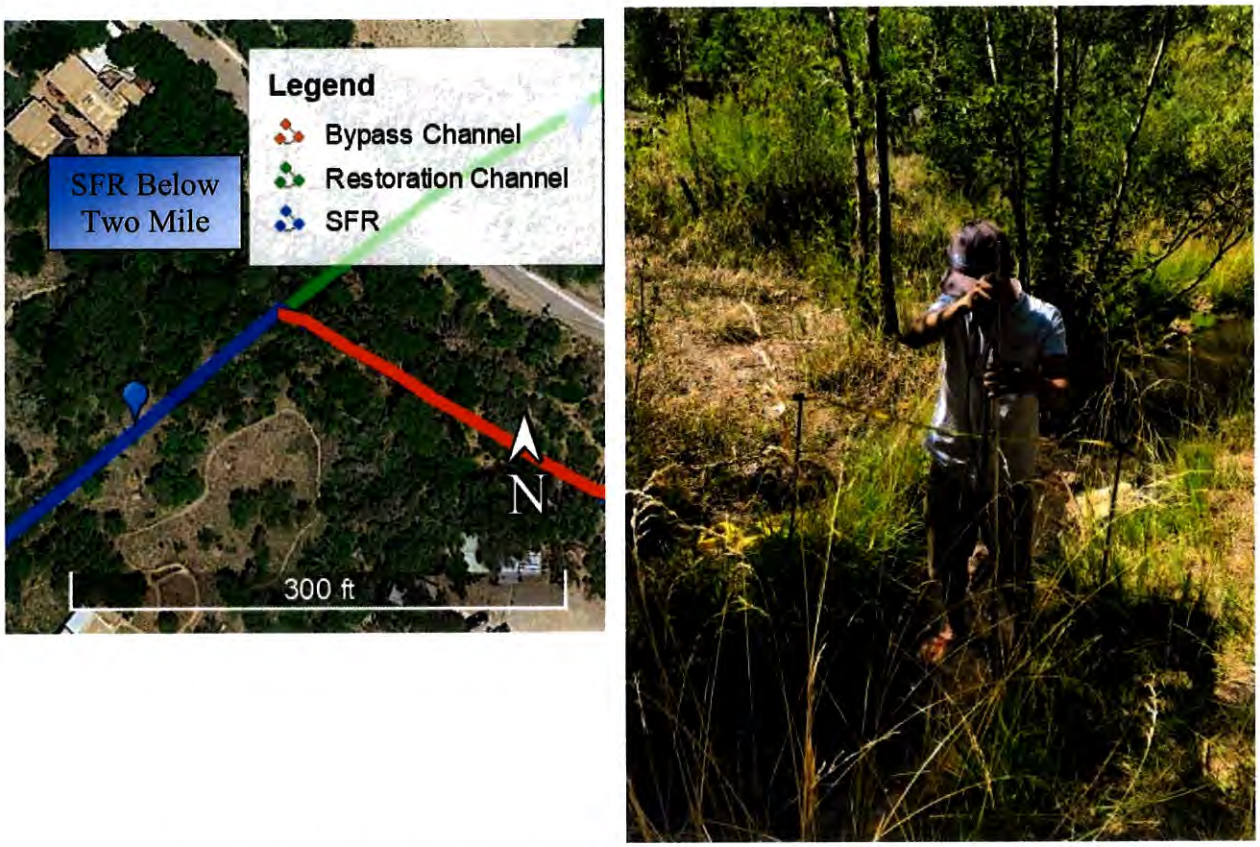


Figure 20. Location map of Santa Fe River Below Two Mile (left); Santa Fe River Below Two Mile Pond looking downstream, July 26, 2018 (right)

2.11 Acequia del Llano Return

Acequia del Llano diversion, which occurs directly to a pipe with 4 inch meter in the intake at Nichols Reservoir, returns to the Santa Fe River below Cerro Gordo Road (Fig. 21). During the irrigation season, the return flows are approximated using a portable 3-inch modified Parshall flume. Methodology for flow measurements using the Parshall flume is included as Appendix A. Monitoring also includes water quality measurements for pH, conductivity, and temperature.

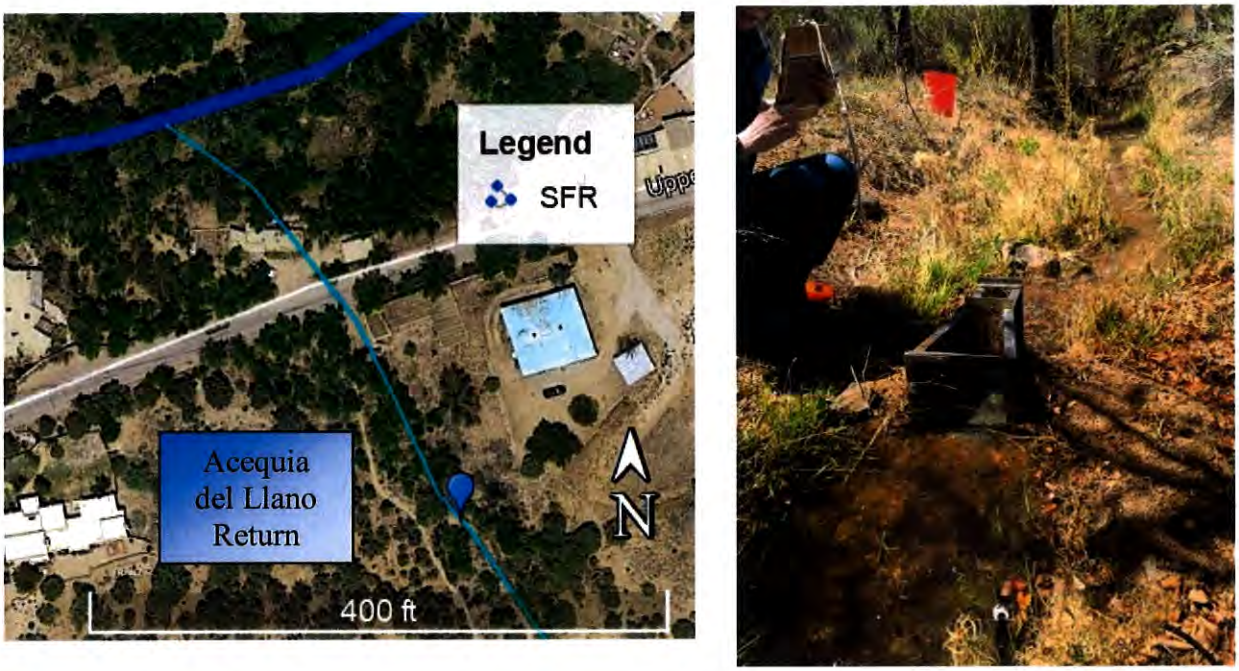


Figure 21. Location of Acequia del Llano Return (left); Acequia Del Llano Return to the Santa Fe River looking downstream, May 3, 2018 (right)

2.12 Acequia de la Muralla

Acequia de la Muralla located south of Adam Gabriel Armijo Park consists of a headgate secured with sandbags that allows diversion into an 18-inch half pipe (Fig. 22). During irrigation season, monitoring consists of measuring flow using a pygmy meter (Appendix A: methodology).

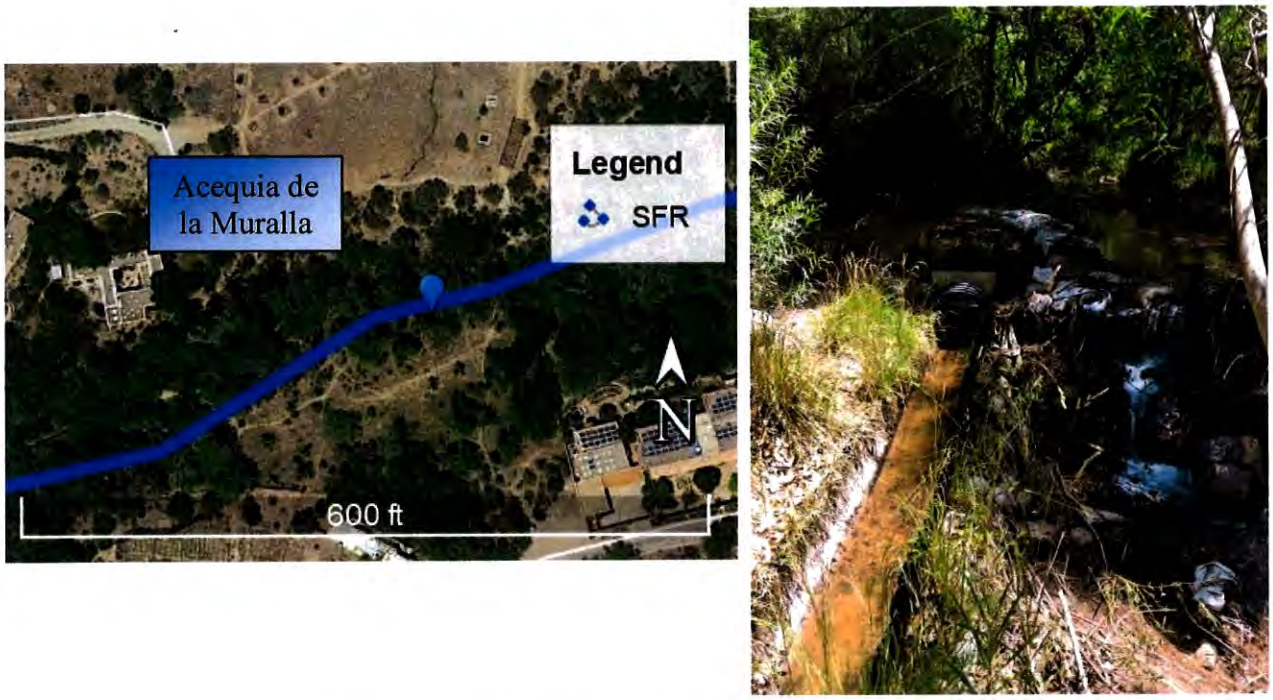


Figure 22. Location of Acequia de la Muralla (left); Acequia de la Muralla looking upstream, July 26, 2018 (right)

2.13 Santa Fe River at Camino Pequeño (river station no. 3)

The Santa Fe River at Camino Pequeño is approximately 2.2 miles downstream from Nichols Reservoir (Fig. 23). No permanent instrumentation is installed at this location. Seepage studies of the Santa Fe River in the spring and summer months include this station. Depending on flow rates, either a portable 3-inch modified Parshall flume or a USGS Pygmy meter can be used to measure flow (Appendix A: methodology). The monitoring location is just upstream of Acequia Madre diversion. Monitoring also includes water quality measurements for pH, conductivity, and temperature.

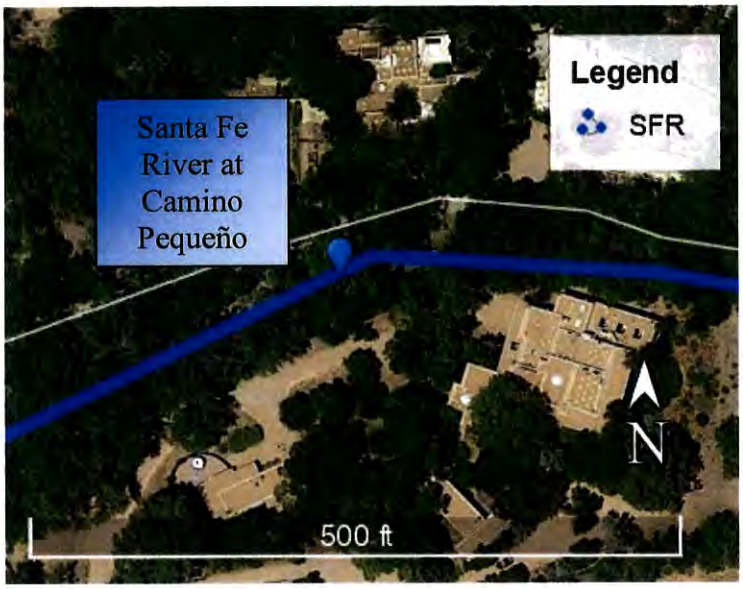


Figure 23. Measuring flow at Santa Fe River at Camino Pequeño, looking from the north bank (top left- 7/26/18) and looking downstream (top right- 5/4/16); Location map of Santa Fe River at Camino Pequeño

2.14 Acequia Madre Diversion

The Acequia Madre diversion is located near the intersection of Camino Pequeño and East Alameda Street (Fig. 24). The Acequia Madre diversion structure includes bermed intake in the Santa Fe River channel to a system of two headgates (Fig. 25). One headgate controls diversions to Acequia Madre, and the other headgate controls flows back to the Santa Fe River. There is a 24-in. Parshall flume in the Acequia Madre ditch approximately 200 ft downstream of the headgates. The flume is rated to measure diversion rates ranging from 0.42 to 33.00 cfs. Monitoring includes visual inspection of the headgates, and documentation of the flume height to estimate flows (Appendix A: Methodology). Access to the flume is through a locked gate and access must be coordinated with the City.

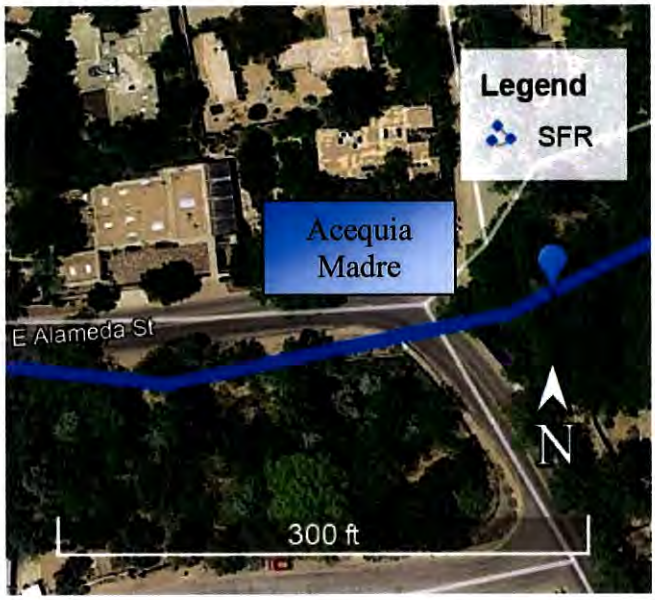


Figure 24. Location map of Acequia Madre

Figure 25. Acequia Madre headgate (closed) on left, and headgate to the Santa Fe River on right 5/18/17

2.15 Santa Fe River at Patrick Smith Park (river station no. 3a)

The Santa Fe River at Patrick Smith Park is approximately 2.4 miles downstream from Nichols Reservoir (Figs. 26 and 27). No permanent instrumentation is installed at this location. Seepage studies of the Santa Fe River have historically included this location. Although this location is no longer being monitored, it is included here for completeness.

Historically: Depending on flow rates, either a portable 3-inch modified Parshall flume or a USGS Pygmy meter can be used to measure flow (Appendix A: Methodology). The monitoring location is just downstream of the Acequia Madre diversion. Monitoring also includes water quality measurements for pH, conductivity, and temperature.

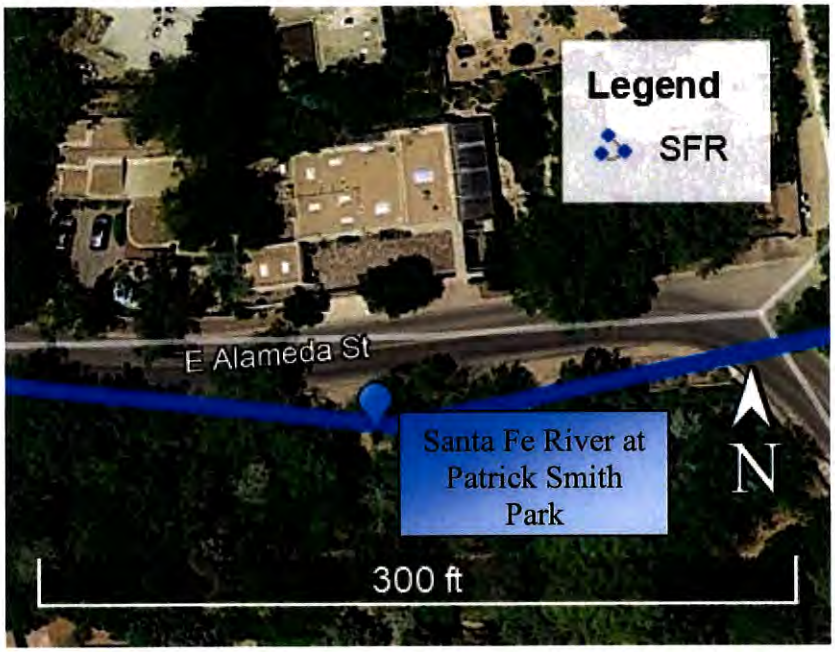


Figure 26. Location map of Patrick Smith Park Station

Figure 27. SFR at Patrick Smith Park, 5/18/17

2.16 St. Francis Gaging Station (river station no. 4)

Santa Fe River flow at St. Francis (at Louis Montana Park east of St. Francis Drive) is measured with an existing staff gage, located approximately 4.4 miles downstream of the Nichols Reservoir (Figs. 28 and 29). JSAI equipped the existing gaging station with a pressure transducer in early April 2018. The pressure transducer is installed in the pre-existing stilling well structure to continuously record stage in the Santa Fe River.

Figure 28. Location map of St. Francis Gaging Station

Figure 29. Staff gage just upstream of stilling well (left) and SFR looking upstream at St. Francis Gaging Station (right)

2.16.1 Installation at St. Francis Gaging Station

A pressure transducer at St. Francis is installed in a stilling well and set to the streambed level. The upper hatch of the stilling well is secured with a combination lock with the code 1142, and a key is stored inside the upper hatch to access the padlock securing the lower hatch of the stilling well.

2.16.2 Monitoring at St. Francis Gaging Station

The pressure transducer (Solinst AquaVent) at the gaging station records data every 15 minutes. The transducer-measured level of zero corresponds to a staff gage value of 5.11 ft (as recorded October 11, 2018). At this level, there is zero flow over the grade control structure in the channel immediately downstream of the stilling well and staff gage.

The transducer data are stored in the wellhead in addition to reporting to the City of Santa Fe's SCADA system. Monitoring at the gaging station includes download of transducer data from the wellhead unit and observation of gage height at the time of download. Monitoring at the gaging station also includes periodic measurements of flow using a USGS Pygmy meter as described in the rating curve development section below. Water quality measurements of pH, conductivity, and temperature are also collected when measuring flow rates.

2.16.3 Rating Curve Development at St. Francis Gaging Station

Periodic flow measurements were performed to develop a rating curve using a USGS Price pygmy meter throughout the river monitoring seasons 2016-2017, and in 2019. Standard Operating Procedure for using the pygmy meter is included in Appendix A.

A graph is used to compare measured flow with transducer readings (staff gage height) (Fig. 30). The red envelope around the fit line shows the accuracy in reading (~4% error) for the entire dataset. Given the Power Curve fit, the correlation decreases for higher flow rates. Two polynomial rating curves were developed to increase the accuracy of correlation between measured stream flow and stage height (Fig. 31). The City of Santa Fe's SCADA system is set up to report the calculated flow based on the water level at the gaging station using the equations presented in Figure 31. Realistically flows can be measured between 1.0 cfs and 25 cfs using the rating curves.

The rating curves will have to be revised if the river channel is modified. Each river monitoring season, the stream profile should be compared to the previous year's before proceeding with the same rating curve. A current stream profile is shown in Figure 32.

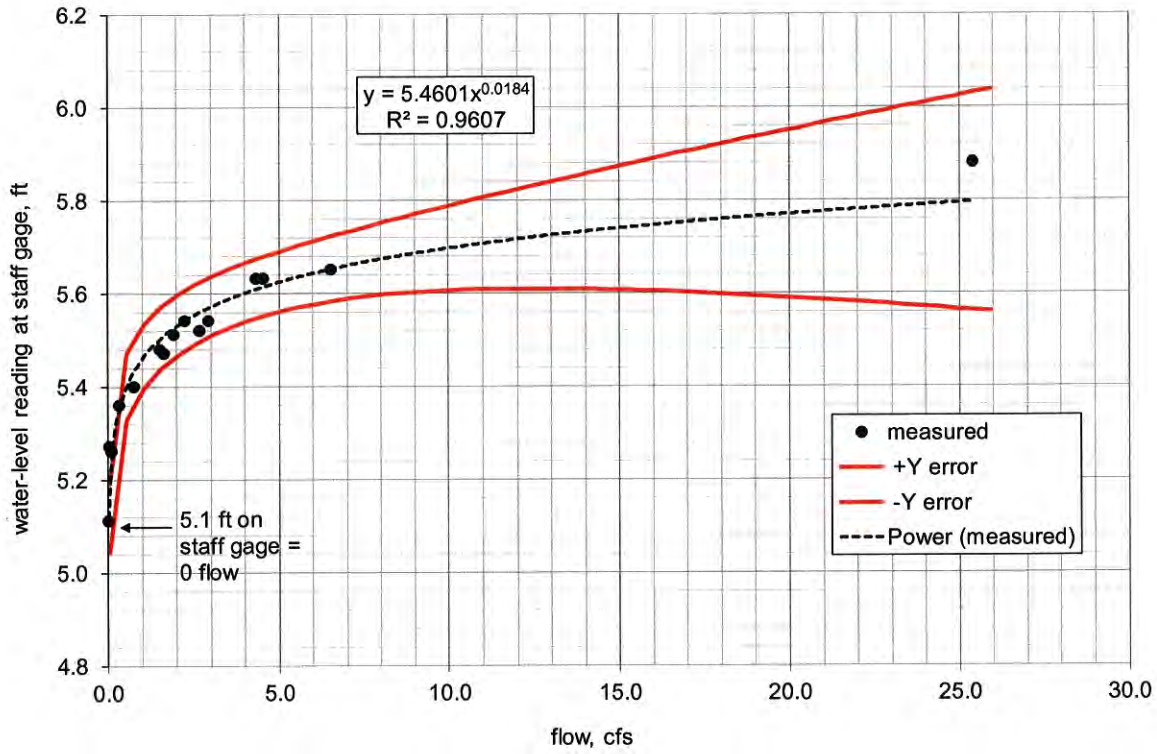


Figure 30. Graph showing correlation between staff gage height and flow *at St. Francis Drive* station, City of Santa Fe, New Mexico.

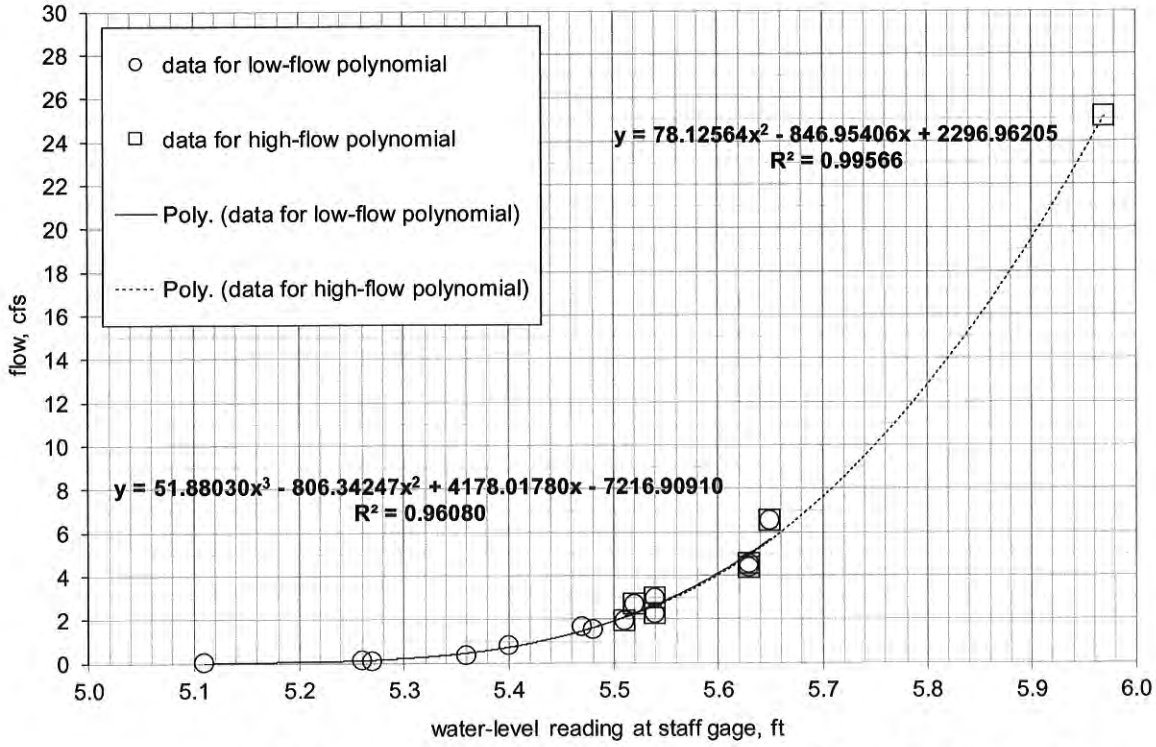


Figure 31. Rating curves for the Santa Fe River *at St. Francis Drive* station, City of Santa Fe, New Mexico.

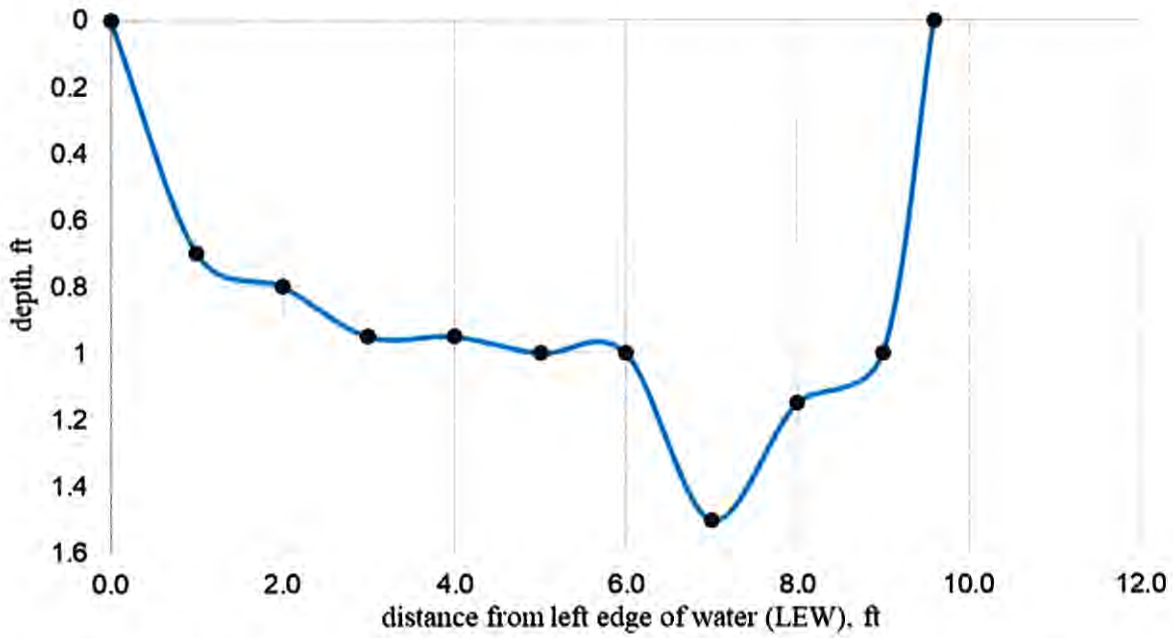


Figure 32. Stream profile for the Santa Fe River *at St. Francis Drive* station, City of Santa Fe, New Mexico.

The at St. Francis gage was operated by Watershed West, LLC under contract to the City of Santa Fe for the years 2007 through 2012. Watershed West, LLC reported streamflow data, but no corresponding gage height data. Zero flow on the staff gage of 5.1 ft was confirmed when JSAI re-equipped the gaging station with a transducer.

2.17 Santa Fe River at Ricardo Rd (river station no. 5)

The Santa Fe River at Ricardo Road is approximately six miles downstream from Nichols Reservoir (Figs. 33 and 34). No permanent instrumentation is installed at this location. Seepage studies of the Santa Fe River in the spring and summer months include this station. A USGS Pygmy meter is used to measure flow (Appendix A: Methodology). Monitoring also includes water quality measurements for pH, conductivity, and temperature.

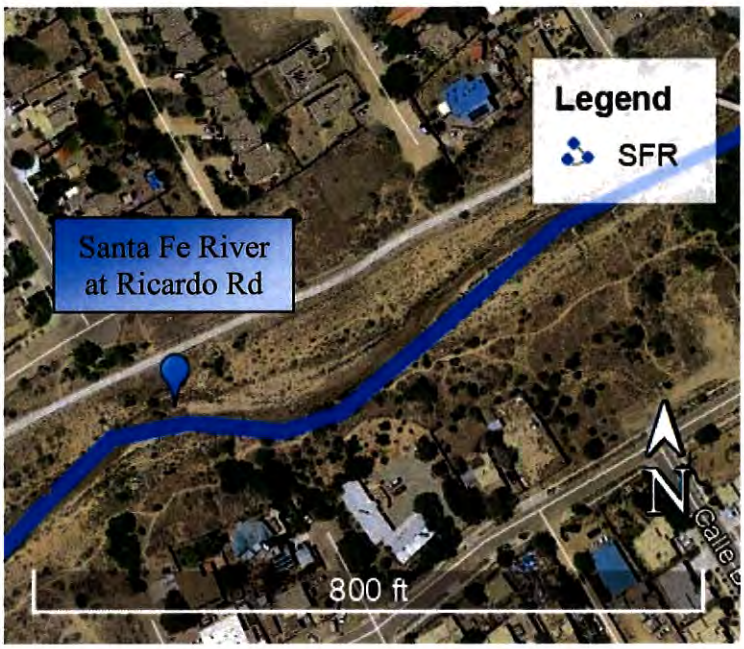


Figure 33. Location of Ricardo Rd Station

Figure 34. Measuring flow at Santa Fe River at Ricardo Road, 5/28/16; Measuring flow at Santa Fe River at Ricardo Road, looking downstream, 7/1/16

2.18 Santa Fe River near Frenchy's Field (river station no. 6)

The Santa Fe River at Frenchy's Field is approximately 6.7 miles downstream from Nichols Reservoir (Figs. 35 and 36). No permanent instrumentation is installed at this location. Seepage studies of the Santa Fe River in the spring and summer months include this station. A USGS Pygmy meter is used to measure flow (Appendix A: Methodology). Monitoring also includes water quality measurements for pH, conductivity, and temperature.

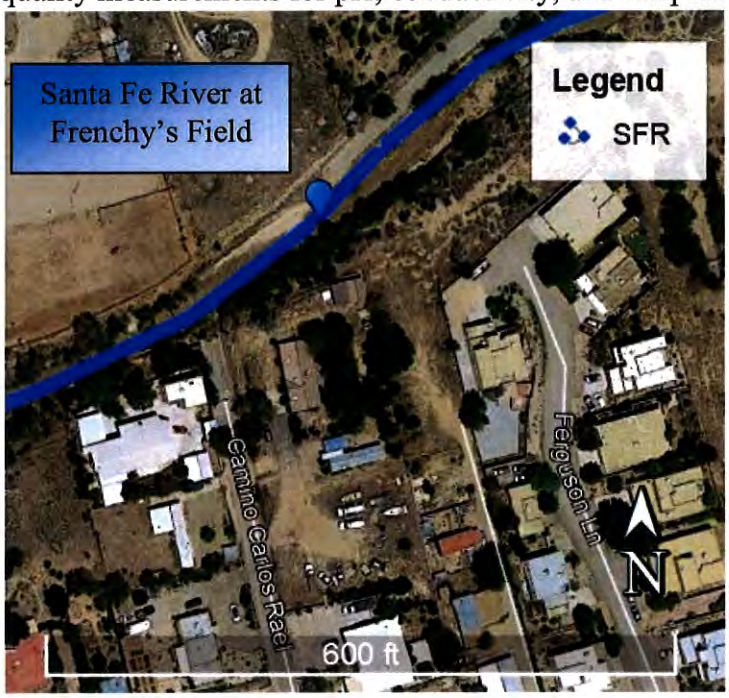


Figure 35. Location of Frenchy's Field Station

Figure 36. Measuring flow at Santa Fe River near Frenchy's Field, looking downstream, 5/19/16

2.19 Santa Fe River at San Ysidro Crossing (river station no. 7)

The Santa Fe River at San Ysidro Crossing is approximately 8.6 miles downstream from Nichols Reservoir (Figs. 37 and 38). No permanent instrumentation is installed at this location. Seepage studies of the Santa Fe River in the spring and summer months include this station. A USGS Pygmy meter is used to measure flow (Appendix A: Methodology). Monitoring also includes water quality measurements for pH, conductivity, and temperature.

Figure 37. Location of San Ysidro Crossing Station

Figure 38. Measuring flow at Santa Fe River at San Ysidro Crossing, 5/19/16

2.20 Santa Fe River at NM State Road 599 (river station no. 8)

The Santa Fe River at New Mexico State Road 599 (NM-599) is approximately 12.6 miles downstream from Nichols Reservoir (Fig. 39). No permanent instrumentation is installed at this location. Seepage studies of the Santa Fe River in the spring and summer months include this station. A USGS Pygmy meter is used to measure flow (Appendix A: Methodology). Monitoring also includes water quality measurements for pH, conductivity, and temperature.

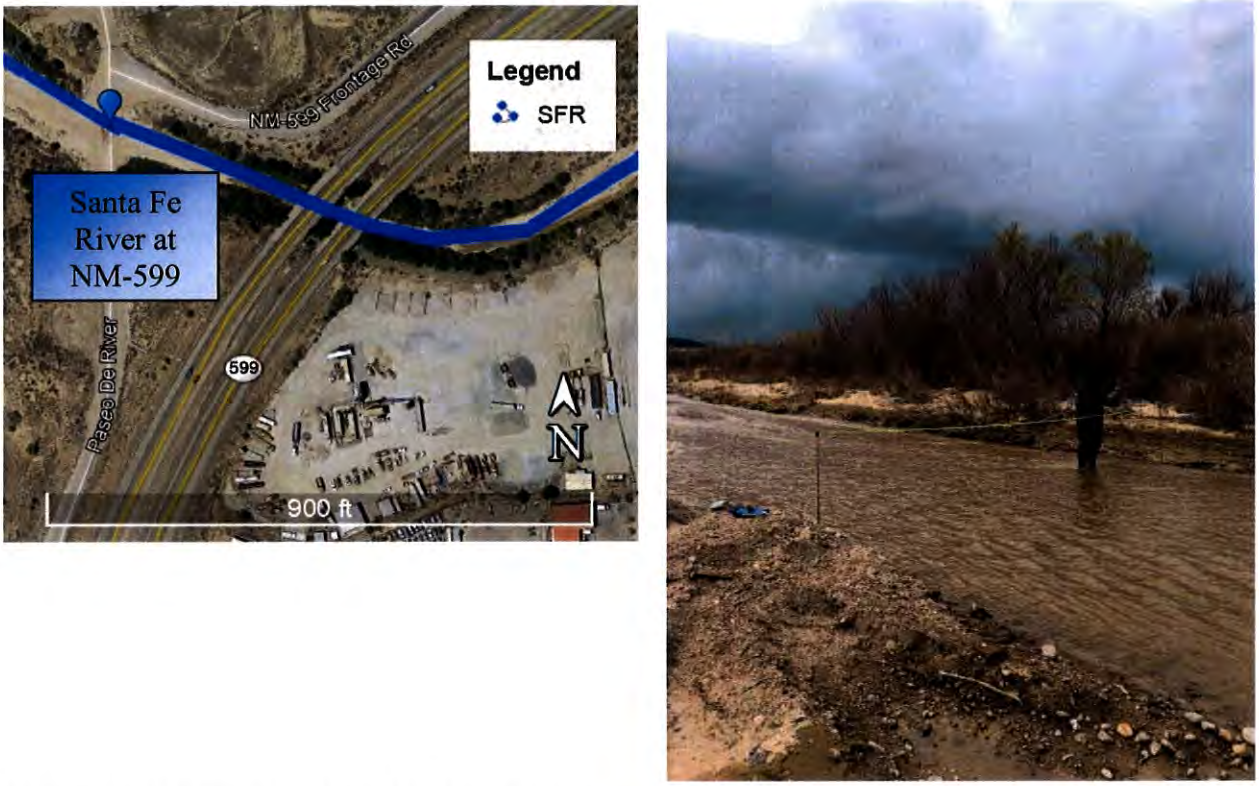


Figure 39. Location of NM-599 Station (left), and measuring flow (downstream view) at NM-599 during April 12, 2019 monitoring (right)

2.21 End-of-Flow

End-of-flow is documented during river monitoring assessments (Fig. 40). The end-of-flow is where the river is advancing, seeping into the riverbed, or receding. The time of the measurement is recorded, as well as location documented by GPS and a photograph taken. Two photos below demonstrate end-of-flows observed during past river monitoring. During high flow events, flow may travel to the Paseo Real Water Reclamation Facility in which case no end of flow is documented.

Figure 40. End-of-flow point upstream of Lopez Lane, looking upstream (left), 7/1/16; and end-of-flow point near El Alamo Street, looking upstream (right), 7/5/16

3.0 GROUNDWATER MONITORING

3.1 Monitoring well SFRMW-02

Monitoring well SFRMW-02, located on the north side of De Vargas Street between Galisteo Street and Sandoval Street, is equipped with a pressure transducer (In-Situ Rugged TROLL 100) to continuously record water levels (Figs. 41 and 42). The transducer is set at the bottom of the well at 29.82 ft below measuring point (bmp). The measuring point of the well is the north side of the inner PVC casing. Water levels are recorded every 60 minutes, and are downloaded at intervals that coincide with river monitoring events. The monitoring well is accessed by removing a flush-mount monitoring wellhead cover using a 9/16 socket wrench.

Figure 41. Location of SFRMW-02

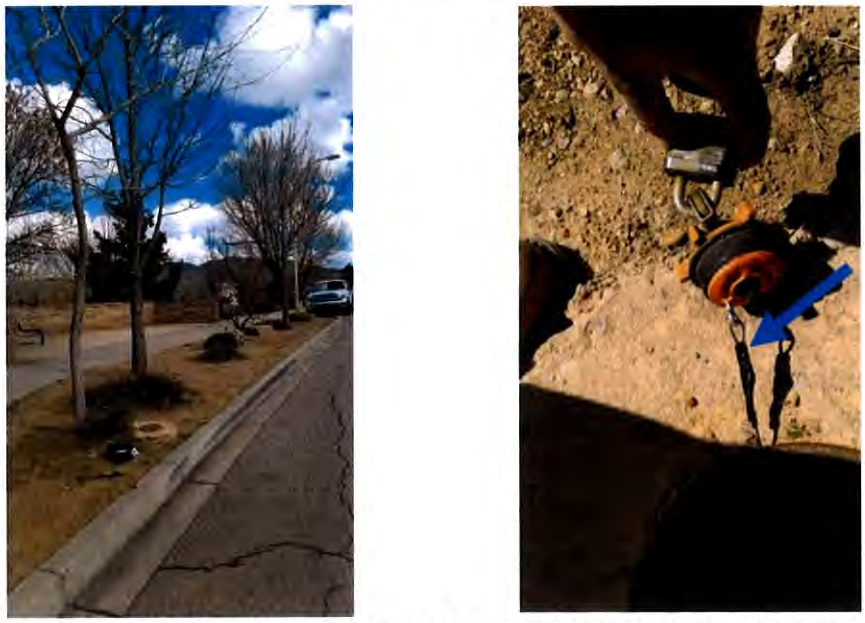


Figure 42. SFRMW-02 monitoring well (left), and well plug with arrow indicating where transducer cable is attached (right), 3/22/19

3.2 Monitoring well New Mexigas MW-1

MW-1 is one of the monitoring wells at the New Mexigas NMED/PSTB site located on the north side of West Alameda Street, just west of St. Francis Drive (Figs. 43 and 44). In the past, water levels have been measured manually at periodic intervals to assess shallow aquifer response to the spring and summer Santa Fe River pulses. In March 2019, MW-1 was equipped with a pressure transducer (In-Situ Rugged TROLL 100) to continuously record water levels. The transducer is set to the bottom of the well at 26.97 ft bmp. The measuring point is on the north side of the PVC inner casing. Water levels are recorded every 60 minutes, and are downloaded at intervals that coincide with river monitoring events. The monitoring well is accessed by removing a flush-mount monitoring wellhead cover using a socket wrench.

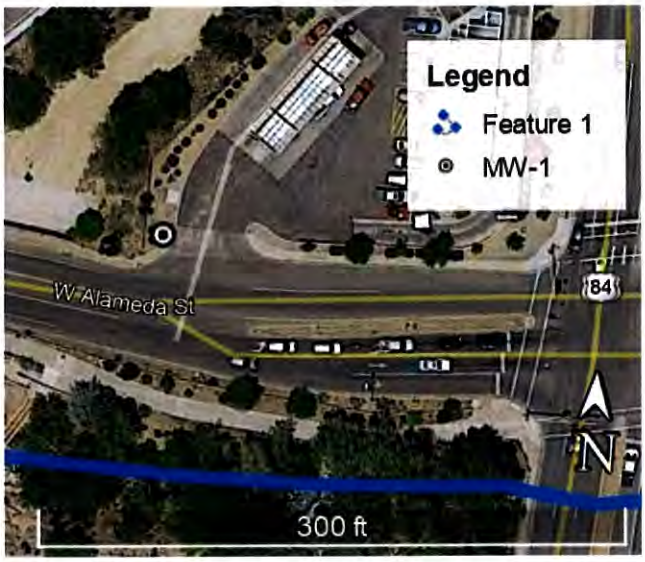


Figure 43. Location of New Mexigas MW-1

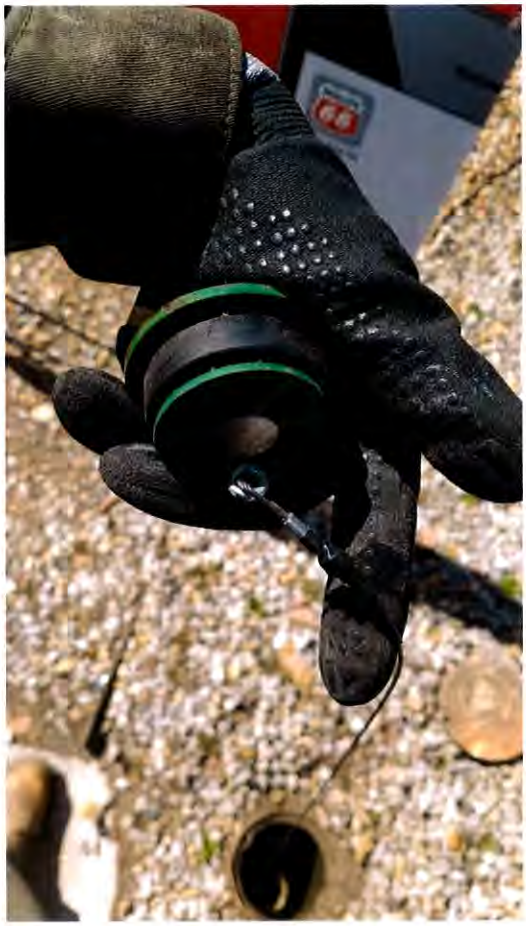


Figure 44. Well plug at New Mexigas monitoring well MW-1 where transducer cable is attached

3.3 USGS observation well at Frenchy's Field

The USGS observation well at the northwest corner of Frenchy's Field is equipped with a pressure transducer (In-Situ Rugged TROLL 100) that is installed through a set-screw-locked access cap that rises above the well cap (Figs. 45 and 46). The set-screw lock is removed using a 7/64 Allen wrench. The transducer is set at the bottom of the well at 51.20 ft bmp. The measuring point of the well is the north side of the steel casing. Water levels are recorded every 60 minutes, and are downloaded at intervals that coincide with river monitoring events.

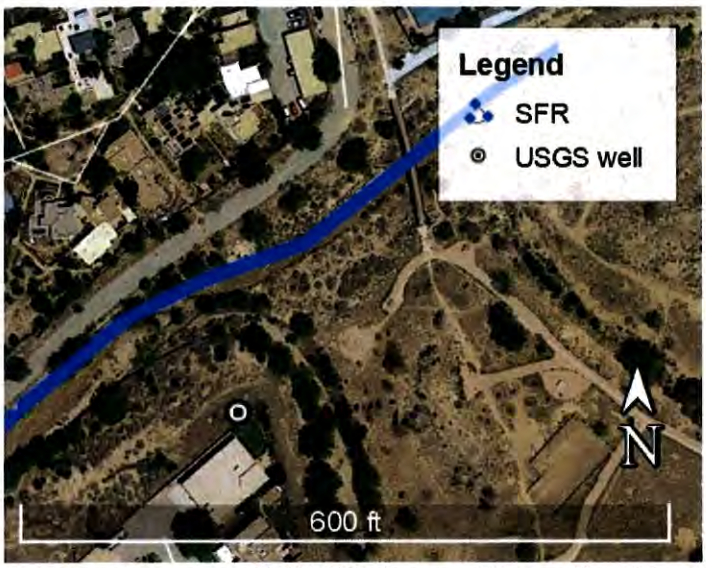


Figure 45. Location map of USGS observation well at Frenchy's Field

Figure 46. USGS observation well at Frenchy's Field (left) and pin-locked cap where transducer cable is attached (right)

4.0 METHODS FOR INTERPRETATION OF DATA

Monitoring requirements in the Administrative Procedures for Santa Fe River Target Flows include:

1. Daily target flows and flow accounting (Bypass Flows)
2. Streamflow monitoring at below Nichols and above St. Francis gages
3. Wetted distance (Nichols Reservoir to end of flow)
4. Parameters for adaptive management, such as
    a. Water quality in river
    b. Surface water infiltration
    c. Surface/groundwater interaction

The Target Year for the Living River is from April 15th through April 14th. Flow accounting is based on the target year.

4.1 Calculation of Bypass Flows

The below Nichols gage is used to calculate Bypass Flows. Data collected from the below Nichol gage transducer is corrected for barometric effect, and the gage height measured by the transducer is compared to field measurements for quality assurance and quality control (QA/QC) practice. The established rating curve is applied to the measured gage height for calculation of flow rate and volume. Results from the below Nichols gage are compared to those obtained from the CRWTP for the calculated flows from the Splitter Box.

4.2 Calculation of Two-Mile Pond Area Water Budget

Daily stream flow losses and delays occur in the Two Mile Reservoir area as a result of diversions through the restoration channel, infiltration above Old Stone Dam, seepage along the Bypass Channel, and evaporation from the Two Mile pond riparian area. These effects become amplified when stream flow above Old Stone Dam is less than 3 cfs.

The water budget is calculated using the following inflow and outflow components.

Daily Inflows:

1. Stilling Well A
2. Old Stone Dam seepage (best if measured with a portable weir)

Annual Inflows are considered as flow measured at the below Nichols gage, because no significant streamflow losses are expected in the reach above the footprint of Old Stone Dam Reservoir.

Outflows:

1. Stilling Well B
2. Restoration Channel below Two-Mile Pond (Parshall flume)

Calculation of the Two Mile Pond area water budget helps with determining the quantity of bypass flow required for deliveries to Acequia Cerro Gordo and delayed stream flow effects for management of daily target flow downstream.

4.3 Calculation of Acequia Streamflow Consumption

Calculation of Acequia streamflow consumption are needed for flow accounting and for developing a water budget for the target year and for calculation of seepage loss rates. Acequias that divert form the Santa Fe River include:

1. Acequia del Llano
2. Acequia Cerro Gordo
3. Acequia Muralla
4. Acequia Madre

Acequia del Llano diversion is metered by the City at Nichols Reservoir. Streamflow consumption is calculated by subtracting the average measured return (see Section 2.11) from the metered diversion.

Acequia Cerro Gordo and Acequia Muralla streamflow consumption are currently calculated from the diversion schedule provided by the Mayordomos. Based on field observations, acequia diversions are fully consumed with no returns.

Acequia Madre streamflow consumption is calculated from the diversion schedule provided by the Mayordomo. Reported diversions are compared to field measured diversions at the Parshall Flume. Based on field observations, acequia diversions are fully consumed with no returns.

4.4 Calculation of Seepage Loss Rates and Water Budget for Target Year

Seepage loss rates are calculated from stream-flow measurements collected from the monitoring network for the same day, from top to bottom of the Living River segment. Streamflow measurements must be collected when acequias are not diverting, or diversion must be quantified for accurate calculation of seepage loss for the upper reach. Calculation of seepage loss rates can be referenced from JSAI (2018).

Water budget for the target year should include the following components and format. (see JSAI, 2018):

Table 3. Water budget, target year 2016

component	acre-feet	percent of total
total volume of bypassed flows	731	100
loss due to evaporation	76	10.3
estimated acequia diversions	181	24.8
ET losses from Two Mile Pond system	21	2.9
streamflow past Wastewater Treatment Facility	41	5.6
streamflow infiltrated	412	56.4

REFERENCES

City of Santa Fe, 2012, Administrative Procedures for Santa Fe River Target Flows, Resolution No. 2012-28, adopted February 29, 2012

JSAI, 2018, Results of 2016 and 2017 Santa Fe River Monitoring, City of Santa Fe, New Mexico: Consultants report prepared by Steven T. finch, Jr., Annie McCoy, and Brionna O'Connor of John Shomaker & Associates, Inc. for City of Santa Fe Water Division, June 2018

Turnipseed, D.P., and Sauer, V.B., 2010, Discharge measurements at gaging stations: U.S. Geological Survey Techniques and Methods book 3, chap. A8, 87 p. (Also available at https://pubs.usgs.gov/tm/tm3-a8/.)

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

AMIGOS BRAVOS, Plaintiff, v. **UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, ANDREW WHEELER,** in his official capacity as Administrator of the Environmental Protection Agency; **KEN MCQUEEN,** in his official capacity as Regional Administrator Environmental Protection Agency Region 6, Defendants.	Case No. 1:19-cv-852 PETITION FOR REVIEW OF AGENCY ACTION

INTRODUCTION

1. Plaintiff Amigos Bravos brings this action for declaratory and injunctive relief challenging the failure of the Federal Defendant, Environmental Protection Agency; Environmental Protection Agency Administrator, Andrew Wheeler; and Environmental Protection Agency Region VI Regional Administrator, Ken McQueen (collectively "EPA") to address the significant water quality problems in Los Alamos County caused by unregulated urban stormwater runoff, as required under the Clean Water Act. 33 U.S.C. §§ 1251, *et seq.* Specifically, Amigos Bravos is challenging EPA's failure to respond promptly to Amigos Bravos' Petition for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit ("Petition"), attached hereto as Exhibit A.

2. EPA's failure to provide the required response to the petition has left the waters of

Los Alamos County unprotected from stormwater runoff from the developed and urban areas within the County. As a result, the discharges of stormwater from municipal separate storm sewer systems ("MS4s") from developed and urban areas of Los Alamos County have caused or contributed to violations of one or more New Mexico water quality standards. This runoff contains pollutants, such as gross alpha (a measurement of overall radioactivity), PCBs, aluminum, copper, radium, cyanide, mercury, and selenium. The State of New Mexico has identified numerous water bodies in Los Alamos County as degraded by these types of pollutants, such that they are not fully supporting their designated beneficial uses.

3. Despite this, because of EPA's inaction, these discharges are not regulated under the Clean Water Act's National Pollutant Discharge Elimination System ("NPDES"), 33 U.S.C. § 1342, which requires the issuance of permits to reduce and eliminate the discharge of such pollutants to the maximum extent practicable and to address water quality impacts.

4. Amigos Bravos seeks declaratory relief against the EPA, in accord with the Clean Water Act ("CWA" or "Act") and Administrative Procedure Act ("APA"), for EPA's ongoing and arbitrary failure to respond to the Petition. Amigos Bravos also seeks injunctive relief, requiring EPA to provide the required response by a date certain, in compliance with the law.

5. If they prevail, Amigos Bravos will seek an award of attorneys' fees, costs, and other expenses pursuant to the Clean Water Act, 33 U.S.C. § 1365, and the Equal Access to Justice Act, 28 U.S.C. § 2412.

JURISDICTION & VENUE

6. This action arises under the Clean Water Act ("CWA" or "Act"), 33 U.S.C. § 1365(a)(2), and the Administrative Procedure Act ("APA"), 5 U.S.C. §§ 551–706, specifically sections 553(e), 555(b) and (e), and 706(l).

7. This Court has jurisdiction over this action pursuant to 28 U.S.C. § 1331 (federal question) and 33 U.S.C. § 1365(a) (CWA citizen suit jurisdiction). The requested relief is proper under 28 U.S.C. § 2201(a), 28 U.S.C. § 2202, 33 U.S.C. § 1365(a), and 5 U.S.C. §§ 705, 706.

8. This action reflects an actual, present, and justiciable controversy between Amigos Bravos and the Federal Defendants. Amigos Bravos and its members will suffer adverse and irreparable injuries-in-fact to their legally protected interests in the affected area's environmental resources if EPA continues to violate federal laws as alleged herein. These injuries are concrete and particularized and fairly traceable to EPA's failure to act, providing the requisite personal stake in the outcome of this controversy necessary for this Court's jurisdiction.

9. The requested relief would redress Amigos Bravos' actual, concrete injuries caused by the EPA's failure to comply with duties mandated by CWA and the regulations promulgated pursuant thereto.

10. On June 26, 2019, Amigos Bravos sent EPA the required Notice of Intent to Sue, pursuant to 33 U.S.C. § 1365(b)(1)(A). EPA has yet to submit a response to Amigos Bravos' notice letter.

11. Venue in this Court is proper pursuant to 28 U.S.C. § 1391(b)(2) because Los Alamos County is located in New Mexico, and therefore a substantial part of the events or omissions giving rise to the claim occurred in this district and a substantial part of the property

that is the subject of the action is situated in this district. Venue is also proper under 28 U.S.C. § 1391(e)(1) because this is a civil action in which a defendant is an officer or employee of an agency of the United States acting in his official capacity and Amigos Bravos maintains its principal place of business in New Mexico.

PARTIES

12. Plaintiff AMIGOS BRAVOS is a nonprofit water protection organization whose mission is to protect and restore the waters of New Mexico. Amigos Bravos works to preserve the ecological and cultural integrity of New Mexico's watersheds by assuring compliance with environmental laws and holding polluters and governments accountable for their actions. Through this work, Amigos Bravos ensures that New Mexico's watersheds provide clean water for irrigating, swimming, fishing, and boating. Amigos Bravos' effort is inspired by New Mexico's traditional water users and guided by the vision of water as both a cultural and natural resource. Amigos Bravos has members throughout New Mexico that use and enjoy the water resources of New Mexico for irrigation, livestock watering, fishing, recreation, spiritual pursuits, and aesthetic interests. Amigos Bravos brings this action on its own behalf and on behalf of its adversely affected members

13. Amigos Bravos' members use and enjoy the wildlands, wildlife habitat, rivers, streams, and healthy environment in and downstream from Los Alamos County for hiking, fishing, hunting, camping, photographing scenery and wildlife, wildlife viewing, aesthetic enjoyment, spiritual contemplation, religious practices and ceremonies, and engaging in other vocational, scientific, and recreational activities. Amigos Bravos' members derive recreational, inspirational, spiritual, religious, scientific, educational, and aesthetic benefit from their activities

in the County. Amigos Bravos' members intend to continue to use and enjoy these areas, and their cultural resources, wildlands, wildlife habitat, rivers, streams, and healthy environments frequently and on an ongoing basis long into the future.

14. Amigos Bravos and its members have a procedural interest in EPA's full compliance with the Clean Water Act, its substantive protections for water bodies from the impacts of stormwater runoff, and the Act's and its implementing regulations' procedural requirements.

15. The aesthetic, recreational, scientific, educational, spiritual, religious, and procedural interests of Amigos Bravos and their members who use lands in and around Los Alamos County have been adversely affected and irreparably injured by the EPA's failure to act on the Petition and to protect the County's waterbodies from stormwater runoff. These are actual, concrete injuries caused by EPA's failure to comply with mandatory duties under the Clean Water Act and its implementing regulations. The injuries would be redressed by the relief sought.

16. Defendant UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, a federal agency, is responsible for implementing the CWA. *See* 33 U.S.C. §§ 1251–1387.

17. Defendant ANDREW WHEELER is the Administrator of the EPA. In that role, he is charged with the duty to uphold the Clean Water Act and its implementing regulations and to take required regulatory actions according to the schedules established therein.

18. Defendant KEN MCQUEEN is the Regional Administrator of Region 6 of the EPA. In that role, he is charged with the duty to uphold the Clean Water Act and its

implementing regulations and to take required regulatory actions according to the schedules established therein.

STATUTORY BACKGROUND

A. The Clean Water Act

19. The Clean Water Act is designed to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). The primary goal of the CWA is to eliminate the discharge of pollutants into navigable waters entirely; it also establishes "an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife," *id.* § 1251(a)(1)–(2), and sets a "national policy that the discharge of toxic pollutants in toxic amounts be prohibited[.]" *Id.* § 1251(a)(3).

20. To meet these water quality goals, the CWA requires that states develop water quality standards that establish, and then protect, the desired conditions of each waterway within the state's regulatory jurisdiction. *See id.* § 1313(a); see also 40 C.F.R. § 131.11(a)(1). Water quality standards must include three elements: (1) one or more designated uses of a waterway; (2) numeric and narrative criteria specifying the water quality conditions, such as maximum amounts of toxic pollutants, maximum temperature levels, and the like, that are necessary to protect designated uses; and (3) an antidegradation policy that protects existing uses and ensures that high quality waters will be maintained. 33 U.S.C. §§ 1313(c)(2), (d)(4)(B); 40 C.F.R. Part 131, Subpart B. For waters with multiple uses designations, the criteria must support the most sensitive use. 40 C.F.R. § 131.11(a)(1).

21. The standards must be sufficient to protect the public health or welfare, enhance the quality of water and wherever attainable, provide water quality for the protection and

propagation of fish, shellfish and wildlife and for recreation in and on the water, taking into consideration their use and value for public water supplies, and agricultural, industrial, and other purposes including navigation. *See* 33 U.S.C. § 1313(c)(2)(A). These standards serve as the regulatory basis for water quality-based treatment controls and strategies. See 40 C.F.R. § 131.2. 24.

22. States have the primary responsibility for reviewing, establishing, and revising water quality standards for those waters within their borders. *See* 33 U.S.C. § 1313(c)(1). New Mexico has established, and EPA has approved, water quality standards pursuant to this requirement.

23. Section 303(d)(2) of the CWA requires States to "submit to the Administrator from time to time" a list of "waters identified and loads established under" subsections 303(d)(1)(A)–(D), including, among other components, a list of waters for which technology-based effluent limitations "are not stringent enough to implement any water quality standard applicable to such waters." 33 U.S.C. § 1313(d)(2); *see also* 40 C.F.R. §§ 130.7(b); 130.10(b), (d).

24. Such waters are called "water quality limited" or "impaired" waters. 40 C.F.R. § 131.3(h) ("*Water quality limited segment* means any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards." (emphasis in original)).

25. In order to ensure that such water quality standards will be achieved, no person may discharge any pollutant into waters of the United States from a point source without a National Pollutant Discharge Elimination System ("NPDES") permit. 33 U.S.C. §§ 1311(a), 1362(I2)(A). NPDES permits must impose water quality-based effluent limitations, in addition

to any applicable technology-based effluent limitations, when necessary to meet water quality standards. 33 U.S.C. § 1311(b).

26. The Act defines "point source" as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit . . . from which pollutants are or may be discharged." 33 U.S.C. § 1362(14). EPA's Clean Water Act regulations further specify that "discharge of a pollutant" includes "additions of pollutants into waters of the United States from[] surface runoff which is collected or channeled by man." 40 C.F.R. § 122.2.

27. The Clean Water Act requires NPDES permits for discharges of industrial and municipal storm water. 33 U.S.C. § 1342(p)(2). Municipal separate storm sewer system ("MS4") are separate storm sewers and are categorized by EPA as large, medium, or small. 40 C.F.R. § 122.26(b)(18).

28. A small MS4 is a storm sewer system "[o]wned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes" in any place with a population under 100,000 people, that is not otherwise designated as a large or medium MS4. *Id.* § 122.26(b)(16)(i)-(ii). Sewer systems "similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares" are also small MS4s. *Id.* § 122.26(b)(16)(iii).

29. The permitting agency must designate a small MS4 for regulation under the NPDES permitting program when it determines the MS4 "has the potential to result in exceedances of water quality standards, including impairment of designated uses, or other

significant water quality impacts, including habitat and biological impacts." 40 C.F.R. § 123.35(b)(1)(i). EPA has stated that "significant water quality impacts" may occur when the MS4 discharges to sensitive waters or is a significant contributor of pollutants to waters of the United States, and there is ineffective protection of water quality by other programs. 40 C.F.R. § 123.35(b)(1)(ii).

30. The Clean Water Act mandates that EPA require NPDES permits for any storm water discharge that the Administrator or the State director determines "contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States." 33 U.S.C. § 1342(p)(2)(E); 40 C.F.R. § 122.26(a)(1)(v). This catch-all authority — known as the "residual designation authority"— ensures that problematic discharges of storm water do not go unregulated.

31. Once EPA has made a finding or determination that a category of discharges meets the statutory criterion of "contribut[ing] to a violation of a water quality standard," it must designate that category for regulation, and those "operators shall be required to obtain a NPDES permit." 40 C.F.R. § 122.26(a)(9)(i)(D).

32. Citizens may petition the permitting agency "to require a NPDES permit for a discharge which is composed entirely of storm water which contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States." 40 C.F.R. § 122.26(f)(2).

33. EPA "shall make a final determination on any petition received under this section within 90 days after receiving [such a] petition." 40 C.F.R. § 122.26(f)(5).

34. A citizen may also petition the permitting agency for the designation of a large, medium, or small municipal separate storm sewer system. 40 C.F.R. § 122.26(f)(4).

35. EPA must make a final decision on any such petition to designate a small MS4 within 180 days. 40 C.F.R. § 122.26(f)(5).

36. In New Mexico, EPA Region VI is the permitting agency.

B. Administrative Procedure Act

37. The APA provides a right to judicial review to any "person suffering legal wrong because of agency action." 5 U.S.C. § 702. Actions that are reviewable under the APA include final agency actions "for which there is no other adequate remedy in a court." *Id.*

38. Under the APA, a reviewing court shall, *inter alia*, "hold unlawful and set aside agency action . . . found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Agency actions may also be set aside in other circumstances, such as where the action is "without observance of procedure required by law." 5 U.S.C. § 706(2)(B)-(F).

STATEMENT OF FACTS

A. Environmental Impacts of Stormwater Runoff in Los Alamos County, NM

39. Los Alamos County is located in north-central New Mexico, approximately 60 miles northeast of Albuquerque and 25 miles northwest of Santa Fe. The County's two main population centers are Los Alamos Townsite and the community of White Rock Canyon.

40. Los Alamos County is also home to the 36 square mile Los Alamos National Laboratory ("LANL").

41. The Los Alamos Townsite and the urbanized areas of LANL sit on the Pajarito

Plateau, which consists of a series of finger-like mesas separated by deep east-to-west-oriented canyons cut by streams.

42. The LANL property contains all or parts of seven primary watersheds that drain directly into the Rio Grande, including: Los Alamos, Sandia, Mortandad, Pajarito, Water, Ancho, and Chaquehui Canyons.

43. The Los Alamos Townsite and the urbanized areas of LANL drain into five canyons: Los Alamos, Pueblo, Sandia, Bayo, and Mortandad Canyons.

44. Stormwater runoff poses a significant threat to water quality. Stormwater runoff is generated from rain and snowmelt events that flow over land or impervious surfaces, such as paved streets, parking lots, and building rooftops, and does not soak into the ground. The runoff picks up pollutants like trash, chemicals, oils, and dirt/sediment that can harm rivers, streams, and lakes.

45. In addition to carrying "conventional" pollutants (e.g., increased temperature, pH, low dissolved oxygen, and turbidity), stormwater runoff also contains toxic pollutants such as heavy metals, oil and grease, pesticides, and organic compounds. Stormwater runoff from residential, commercial, and industrial areas also impact nearby waterways as a high volume of flow contributes to erosion and sedimentation, and affects aquatic habitats.

46. Many of the watersheds in Los Alamos County are highly polluted and are water quality limited because they do meet New Mexico's water quality standards.

47. Water quality standards for waters in Los Alamos County are detailed in the New Mexico Administrative Code ("NMAC") at sections 20.6.4.114, 20.6.4.126, 20.6.4.127, and 20.6.4.129, and include various designated uses such as high quality aqutic life, livestock

watering, primary contact and wildlife habitat. There are numeric criteria for numerous pollutants such as PCBs, copper, mercury, gross alpha, silver, selenium, and aluminum that also apply to these waters. These pollutants are known to be discharged with stormwater.

48. Los Alamos Canyon within LANL property is impaired for gross alpha (a measurement of overall radioactivity), PCBs, aluminum, radium, cynanide, mercury, and selenium.

49. The same is true of several other areas throughout the county, including but not limited to:

a. Sandia Canyon: Impaired for PCBs, aluminum, copper, gross alpha, and mercury.

b. Pueblo Canyon: Impaired for gross alpha, PCBs, aluminum, copper, and temperature and mercury.

c. Mortandad Canyon: Impaired for PCBs, mercury, copper, and gross alpha.

d. Pajarito Canyon: Impaired for gross alpha, aluminum, PCBs, silver, mercury, cyanide, and copper.

e. Acid Canyon: Impaired for aluminum, copper, gross alpha and PCBs

f. DP Canyon: Impaired for aluminum, copper, gross alpha, and PCBs.

g. Arroyo de la Delfe: Impaired for aluminum, copper, gross alpha, and PCBs.

h. Three Mile Canyon: Impaired for gross alpha

i. Canada del Buey: Impaired for gross alpha and PCBs.

j. Canon de Valle: Impaired for gross alpha and PCBs.

k. Chaquehul Canyon: Impaired for PCBs.

50. The New Mexico Environment Department ("NMED") has concluded that in many of these areas urban runoff is the cause of these water pollution problems. NMED has repeatedly noted that impervious surface/parking lot runoff, post-development erosion and

sedimentation, and industrial/commercial site stormwater discharge, are causing, or at least contributing to, these issues.

51. For example, in its 2012-2014 report on water quality issues in the state, the State of New Mexico found that water quality in Sandia, Mortandad, Pajarito, and Pueblo Canyons is impaired because of urban-related causes such as impervious surfaces, parking lots, construction, and development. NMED data also shows substantial water quality impairment in Los Alamos Canyon downgradient from most of the urbanized areas at LANL.

52. In addition, LANL has published two detailed studies of stormwater runoff from the Pajarito Plateau, focusing respectively on PCB contamination and metals contamination. Los Alamos National Laboratory, Polychlorinated Biphenyls in Precipitation and Stormwater within the Upper Rio Grande Watershed 2 (May 2012) (LA-UR-12-1081) ("PCB Report") and Los Alamos National Laboratory, Background Metals Concentrations and Radioactivity in Storm Water on the Pajarito Plateau Northern New Mexico 2 (April 2013) (LA-UR-13-22841) ("Metals Report"). These studies show a significant contribution of both PCBs and metals from urban runoff on the Pajarito Plateau.

53. Specifically, the LANL PCB Report found 40 of the 41 Los Alamos urban stormwater samples were above the New Mexico Human Health water quality criteria for PCBs and 19 of the 41 Los Alamos urban stormwater samples were above the New Mexico Wildlife Habitat water quality criteria for PCBs. The LANL report concluded that suspended PCBs carried by urban runoff from the Los Alamos Townsite were 10 to 200 times more enriched with PCBs than at non-urban influenced Pajarito Plateau sites.

54. These findings are consistent with information gathered by NMED in 2006 and

2007. There, NMED collected stormwater samples from urban sites containing PCBs as high as 255 times the state's PCB Human Health water quality criteria. NMED sampling data in 2006 and 2007 show levels of PCBs in stormwater draining off of urban areas in Los Alamos Townsite to be more than 34,000 times greater than the New Mexico Human Health water quality criteria.

55. With respect to metals, LANL's Metal Report, which studied metal contamination in stormwater runoff from urban areas at LANL and the Los Alamos Townsite, found exceedances of New Mexico water quality criteria for cadmium, copper, and zinc. In addition, the LANL Metals Report demonstrated that values for copper, zinc, and nickel in urban stormwater runoff in Los Alamos County substantially exceeded non-urban influenced Pajarito Plateau stormwater concentrations.

56. The LANL studies of PCB and metal-contaminated runoff tie these contaminants to the urban areas of the Pajarito Plateau.

B. Amigos Bravos' Petition

57. On June 30, 2014, Amigos Bravos' petitioned EPA for a determination that stormwater discharges in Los Alamos County contribute to water quality standards violations and require a Clean Water Act permit. Exhibit A.

58. On March 17, 2015, EPA made a "preliminary determination" that discharges of stormwater on LANL property and urban portions of Los Alamos County are causing or contributing to "exceedances of state water quality standards, including impairment of designated uses, or other significant water quality impacts such as habitat and biological impacts." Letter, R. Curry, Regional Administrator, EPA Region 6 to R. Conn, Projects

Director, Amigos Bravos (March 6, 2015).

59. EPA subsequently held a public comment period on the preliminary designation. 80 Fed. Reg. 13,852 (Mar. 17, 2015). The comment period closed on June 15, 2015.

60. Since that time, EPA has made no apparent progress on issuing a final determination to designate these discharges as requiring NPDES permit coverage.

CLAIMS FOR RELIEF

First Claim for Relief

(Violation of CWA—Failure to Respond to the Petition)

61. The allegations made in all preceding paragraphs are re-alleged and incorporated by this reference.

62. Under the Clean Water Act's implementing regulations any person may petition the EPA to require a NPDES permit for a discharge which is composed entirely of storm water which contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States within 90 days. 40 C.F.R. § 122.26(f)(2).

63. Amigos Bravos submitted such a petition to EPA on June 30, 2014.

64. The Clean Water Act's implementing regulations expressly require EPA to make "a final determination on any petition received under [40 C.F.R. § 122.26(f)(2)] within 90 days after receiving the petition." 40 C.F.R. § 122.26(f)(5).

65. EPA has failed to provide Amigos Bravos with a final determination on its Petition.

66. EPA's failure to act is a violation of the Clean Water Act and its implementing regulations.

Second Claim for Relief

(Violation of CWA—Failure to Respond to the Petition)

67. The allegations made in all preceding paragraphs are re-alleged and incorporated by this reference.

68. Under the Clean Water Act's implementing regulations any person may petition the EPA "for the designation of a large, medium, or small municipal separate storm sewer system as defined by paragraph (b)(4)(iv), (b)(7)(iv), or (b)(16) of this section." 40 C.F.R. § 122.26(f)(4).

69. Amigos Bravos submitted such a petition to EPA on June 30, 2014.

70. The Clean Water Act's implementing regulations expressly require EPA "shall make a final determination on the petition within 180 days after its receipt" of any petition under 40 C.F.R. § 122.26(f)(4) to designate a small MS4. 40 C.F.R. § 122.26(f)(5).

71. EPA has failed to provide Amigos Bravos with a final determination on its Petition.

72. EPA's failure to act is a violation of the Clean Water Act and its implementing regulations.

Third Claim for Relief

(Violation of APA—Failure to Respond to the Petition)

73. The allegations made in all preceding paragraphs are re-alleged and incorporated by this reference.

74. The APA requires agencies to conclude issues presented to them "within a

reasonable time" and empowers reviewing courts to "compel agency action unlawfully withheld or unreasonably delayed[.]" 5 U.S.C. §§ 555(b), 706(1).

75. Amigos Bravos' submission of its Petition to EPA in June 2014, triggered EPA's duty under the APA to conclude the issues presented in Amigos Bravos' Petition within a reasonable time.

76. As of the filing of this Complaint, EPA has not responded to the Petition.

77. EPA's failure to respond to the Petition represents a failure to conclude the issues presented in that Petition within a reasonable time.

78. EPA's failure to respond to the Petition constitutes an unreasonable delay of agency action under 5 U.S.C. § 706(1).

RELIEF REQUESTED

WHEREFORE, Plaintiff Amigos Bravos respectfully requests that this Court:

A. Declare that Defendants have violated the Clean Water Act and its implementing regulations, and/or the APA by failing to respond with 90 days to Plaintiff's Petition to require a NPDES permit for a discharge which is composed entirely of storm water which contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States;

B. Declare that Defendants have violated the Clean Water Act and its implementing regulations, and/or the APA by failing to respond with 180 days to Plaintiff's Petition to designate areas with Los Alamos County as Small MS4s;

C. Order Defendants to issue, by a reasonable date certain, a final determination on the Petition to require a NPDES permit for a discharge which is composed

entirely of storm water which contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States;

D. Order Defendants to issue, by a reasonable date certain, a final determination on the Petition to designate areas with Los Alamos County as Small MS4s;

E. Award the Plaintiffs their fees, costs, and other expenses as provided by applicable law;

F. Provide any further relief that the Court views as just and equitable.

Respectfully submitted this 16th day of September 2019,

/s/ Kelly E. Nokes
Kelly E. Nokes (NM Bar ID. 152525)
WESTERN ENVIRONMENTAL LAW CENTER
208 Paseo del Pueblo Sur, Suite 602
Taos, New Mexico 87571

Andrew Hawley (*pro hac vice application pending*)
WESTERN ENVIRONMENTAL LAW CENTER
1402 3rd Avenue, Suite 1022
Seattle, Washington 98101

Counsel for Plaintiffs

Attachment A. A Petition by Amigos Bravos for a Determination that Storm Water Discharges in Los Alamos County Contribute to Water Quality Standards Violations and Require a Clean Water Act Permit (June 30, 2014)

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing PETITION FOR REVIEW was served on all counsel of record through the Court's ECF system on this 16th day of September 2019.

/s/ Kelly E. Nokes

Counsel for Plaintiff

Clean Water Act Section 401 Proposed Rule – Factsheet

Overview
This month, the Environmental Protection Agency signed a proposed rule that would undercut state and tribal authority under section 401 of the Clean Water Act, which authorizes states and tribes to review the impacts of many different types of federally-licensed projects on waterways within their borders and to put limits or stop unacceptable projects. It will soon be published for a public comment period of 60 days.

New Mexico is, once again, one of the hardest hit states
New Mexico is one of the few states that does not have authority to write our own National Pollutant Discharge Elimination System (NPDES) permits. EPA still writes NPDES permits in New Mexico. NPDES permits control discharges from wastewater treatment plants, mines, industrial activities all over this state. That means that we depend on the Clean Water Act Section 401 authority to provide state and tribal oversight of these permits. This proposed rule would limit this authority.

More Details:

- The Clean Water Act is the nation's most effective tool to protect clean water for all Americans. Weakening the law's state oversight and review puts the interests of the oil and gas industry before the health and safety of the public, and will jeopardize our wetlands, rivers, and streams.

- Energy projects and other federally authorized development should not come at the expense of state and tribal communities' ability to protect their water sources, provide clean water, and limit risks of contamination from harmful chemicals that threaten the health of kids and families.

- States and tribes have used this Clean Water Act 401 authority to successfully protect their water bodies from projects that create dangerous coal dust pollution, reservoir contamination, and degradation of fish habitat.

- Rolling back environmental review safeguards worsens the condition of water resources meant for recreational fishing, wildlife habitat conservation, and outdoor recreational activities that states depend on to anchor rural economies.

- When it comes to permitting energy infrastructure, the federal and state/tribal governments have different concerns. The Clean Water Act 401 oversight makes sure states/tribes' can't be ignored and that local communities can participate.

- The Clean Water Act is essential to assess the impacts of federal projects on the health of local communities. States and tribes should be encouraged, not impeded, when they seek to protect their water.

Comment Deadline on Proposed Rule: October 21st
For more information on how to submit a comment:
https://www.regulations.gov/docket?D=EPA-HQ-OW-2019-0405

Buckman Direct Diversion

A joint regional project of the City of Santa Fe and Santa Fe County to build a reliable and sustainable water supply.

Memorandum

Date: September 24, 2019

To: Buckman Direct Diversion Board

From: Jamie-Rae, Administrative Assistant – Board Liaison

Via: Shannon Jones, Public Utilities Department Director

ITEM AND ISSUE:

2020 Buckman Direct Diversion Board Meetings Calendar

BACKGROUND AND SUMMARY:

The Buckman Direct Diversion Board meetings are normally conducted on the 1st Thursday of each month with the January being the exception this year. The meetings are held in the City Council Chambers. The following is the proposed 2020 meeting calendar:

DATE OF MEETING

Thursday, January 9, 2020 @ 4:00
Thursday, February 6, 2020 @ 4:00
Thursday, March 5, 2020 @ 4:00
Thursday, April 2, 2020 @ 4:00
Thursday, May 7, 2020 @ 4:00
Thursday, June 4, 2020 @ 4:00
Thursday, July 2, 2020 @ 4:00
Thursday, August 6, 2020 @ 4:00
Thursday, September 3, 2020 @ 4:00
Thursday, October 1, 2020 @ 4:00
Thursday, November 5, 2020 @ 4:00
Thursday, December 3, 2020 @ 4:00

RECOMMENDED ACTION:

For your approval.

Date: **October 3, 2019**

To: **Buckman Direct Diversion Board**

From: **Mackie M. Romero, BDD Financial Manager**

Subject: **2020 FSAC Meeting Calendar**

ITEM AND ISSUE:

2020 Fiscal Services and Audit Committee (FSAC) Meeting Calendar

BACKGROUND AND SUMMARY:

The BDD FSAC meetings are normally conducted within the 1st week of each month, prior to the BDD Board meetings. These meetings are held in the Legal Conference Room of the County Administration Building at 102 Grant Ave, 2nd floor.

The following is the proposed 2020 schedule for the Fiscal Services and Audit Committee meetings:

FSAC	BDDB	BCC
Tuesday January 7th @ 4:30pm	January 9th	January 14th & 28th
Tuesday February 4th @ 4:30pm	February 6th	February 11th & 25th
Tuesday March 3rd @ 4:30pm	March 5th	March 10th & 31st
Monday March 30th @ 1:30pm	April 2nd	April 14th & 28th
Tuesday May 5th @ 4:30pm	May 7th	May 12th & 26th
Tuesday June 2nd @ 4:30pm	June 4th	June 9th & 30th
Monday June 29th @ 1:30pm	July 2nd	July 14th & 28th
Tuesday August 4th @ 4:30pm	August 6th	August 11th & 25th
Tuesday September 1st @ 4:30pm	September 3rd	September 8th & 29th
Monday September 28th @ 1:30pm	October 1st	October 13th & 27th
Tuesday November 3rd @ 4:30pm	November 5th	November 10th & 24th
Tuesday December 1st @ 4:30pm	December 3rd	December 8th & 29th

This schedule was drafted so as not to conflict with Santa Fe County Commission meetings and miscellaneous City of Santa Fe committee meetings and City Council meetings, therefore dates and times are subject to change

ACTION REQUESTED:

For your approval.