

Agenda Item: 8.

Memorandum

To: Papio-Missouri River Natural Resources District Programs Projects and Operations Subcommittee
From: Paul W. Woodward, PE, Groundwater Management Engineer
Date: January 2, 2018
Re: Review and Recommendation on Groundwater Monitoring Joint Funding Agreement with USGS

Since 1992, the District has implemented a groundwater quality monitoring program as part of the Groundwater Management Plan through a joint funding agreement with the US Geological Survey (USGS). The latest joint funding agreement expires on March 31, 2018. The program samples and analyzes the groundwater of the four aquifer systems within the District: the Missouri River alluvium, the Platte and Elkhorn River alluvium, the Dakota Aquifer, and the Upland alluvial aquifer, on a rotating basis. The program includes sampling private wells (Network Wells) in addition to sampling dedicated monitor sites.

As part of the monitoring program, the District has installed and maintained clusters of dedicated monitoring wells with 2 or 3 wells screened at various depths in multiple locations across the District, see Figure 1. The current dedicated monitoring wells include 44 wells at 16 different sites. Twelve of these cluster sites are within community wellhead protection areas. Within the last year, NDEQ has requested that each NRD specify a set of monitoring wells that can be repeatedly monitored on a long-term basis and at a sampling interval not greater than every two years. The previous program with USGS only monitored these sites once every four years based on the aquifer rotation. So in order to work with NDEQ and use the 16 monitoring well cluster sites as the P-MRNRD's continuous monitoring network, sampling of the cluster wells will need to be increased.

This also helps meet the recommendations presented in the new Groundwater Management Plan to increase monitoring in groundwater quality areas of concern. These areas of concern include the Platte River alluvium south of Springfield, the Dakota sandstone aquifers between Springfield and Gretna, Tekamah's wellhead protection area, and the Platte River alluvium in western Douglas and Sarpy Counties. Finally, USGS is also proposing to expand the number of constituents tested at specific sites near urban influences to include contaminants of emerging concern, such as pharmaceuticals and steroids.

The existing agreement covered four years of monitoring from 2014 through 2017 for a total cost of \$685,000. The proposed Joint Funding Agreement splits P-MRNRD payments to USGS out over five fiscal years (FY 18 - FY 22) and covers monitoring during 2018 – 2021 (see sampling plan and cost summary attached). The maximum cost to the District is \$582,800, see table below.

Program	District	USGS	Total
Previous Agreement	\$517,175 (74.5%)	\$167,825 (24.5%)	\$685,000
Proposed Agreement	\$582,800 (84.3%)	\$108,700 (15.7%)	\$691,500

Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute the Joint Funding Agreement with USGS for the 2018-2021 Groundwater Quality Monitoring with a not to exceed amount of \$582,800, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.

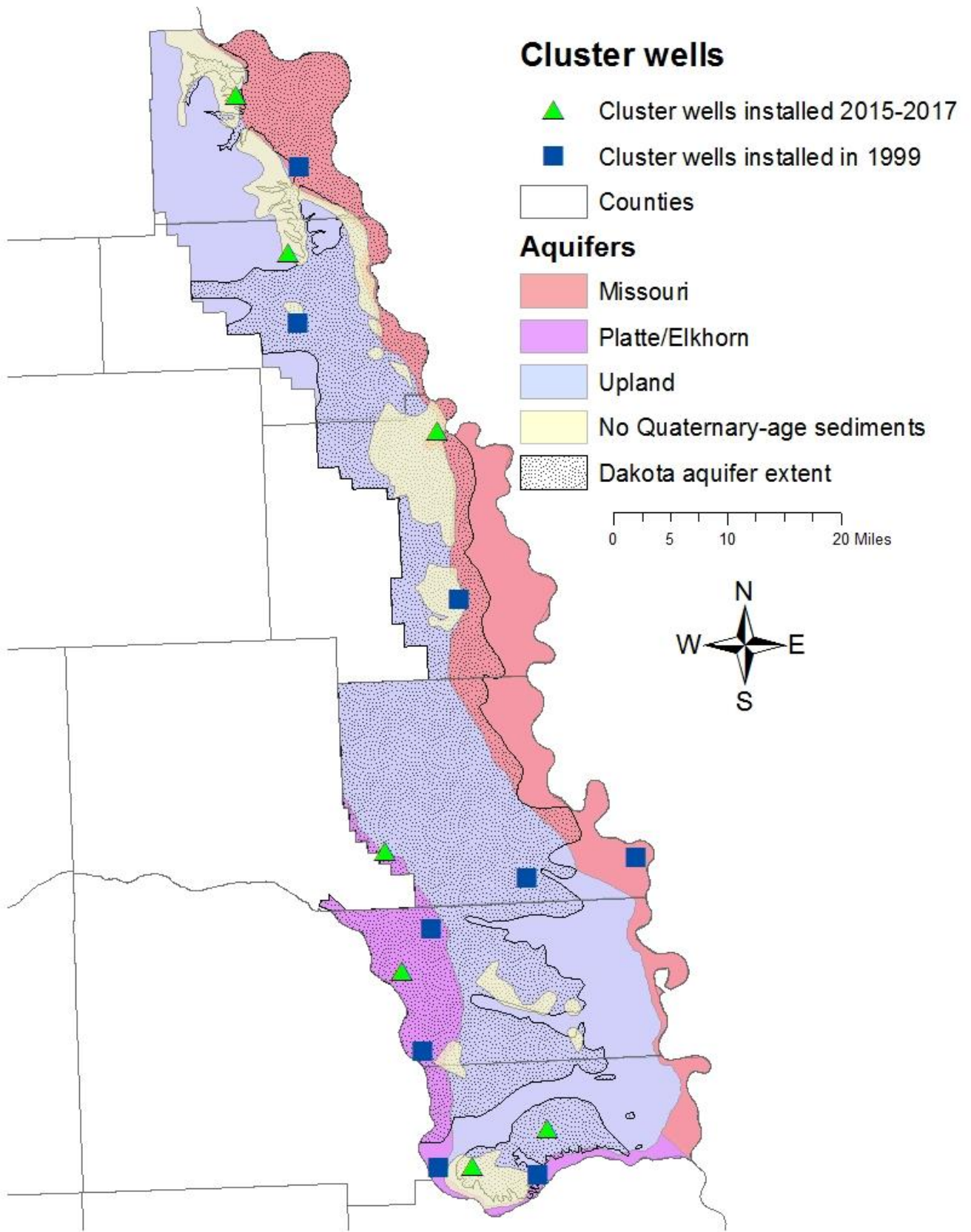


Figure 1. Location of P-MRNRD owned dedicated monitoring wells to be used as biannual network monitoring wells for NDEQ.



United States Department of the Interior

U.S. GEOLOGICAL SURVEY

Nebraska Water Science Center

5231 South 19th Street

Lincoln, NE 68512-1271

January 4, 2018

John Winkler
Papio-Missouri River Natural Resources District
8901 South 154 Street
Omaha, NE 68138

Dear Mr. Winkler:

Enclosed are two copies of Joint Funding Agreement No. 18EMNE000xxx for the groundwater quality sampling, analysis, and reporting for the Papio-Missouri River Natural Resources District. The total amount of the agreement is \$691,500 or \$108,700 for the U.S. Geological Survey and \$582,800 for the Papio-Missouri River Natural Resources District. Please sign one copy of the agreement and return it to this office as soon as possible. The second copy is for your records. Work cannot be started until we receive the signed agreement.

Work performed with funds from this agreement will be conducted on a fixed price basis under the authority of statute 43 USC 36C. Billings will be rendered quarterly. The results of all work under this agreement will be available for publication by the U.S. Geological Survey.

For more information or any questions concerning this agreement, please contact Amanda Flynn at 402-328-4144.

Sincerely,

Jason Lambrecht, Acting Director
USGS Nebraska Water Science Center

3 Enclosures

DUNS No. 949286512

Form 9-1366
(April 2015)

**U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY**

JOINT FUNDING AGREEMENT

FOR

WATER RESOURCES INVESTIGATIONS

Customer #: 6000000134
Agreement #: 18EMNE000xxx
Project #: NR00xxx
TIN #: 47-0542469
Fixed Cost Agreement YES

THIS AGREEMENT is entered into as of the, 1st day of April, 2018 by the U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation for the groundwater quality sampling, analysis, and reporting for the Papiio-Missouri River Natural Resources District herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.
2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of \$0.00
 - (a) by the party of the first part during the period

Amount	Date	to	Date
\$108,700.00	April 1, 2018		June 30, 2022
 - (b) by the party of the second part during the period

Amount	Date	to	Date
\$582,800.00	April 1, 2018		June 30, 2022
 - (c) Contributions are provided by the party of the first part through other USGS regional or national programs, in the amount of:

Description of the USGS regional/national program:
 - (d) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.
 - (e) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.
3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.
4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.
5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.
6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.

9-1366 (Continuation) Customer #: 600000134 Agreement #: 18EMNE000xxx

7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.
8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered QUARTERLY. Payments of bills are due within 60 days after the billing date. If not paid by the due date, interest will be charged at the current Treasury rate for each 30 day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983).

U.S. Geological Survey United States Department of the Interior <u>USGS Point of Contact</u>		Papio-Missouri River Natural Resources District <u>Customer Point of Contact</u>	
Name: Amanda Flynn	Name: Marlin Petermann		
Address: 5231 South 19 St Lincoln, NE 68512	Address: 8901 South 154 St, Omaha NE 68138		
Telephone: 402-328-4144	Telephone: 402-444-6222		
Email: aflynn@usgs.gov	Email: mpetermann@papionrd.org		

Signatures and Date

Signature: _____	Date: _____	Signature: _____	Date: _____
Name: Jason Lambrecht	Name: _____		
Title: NEWSC Acting Director	Title: _____		

**Papio-Missouri River NRD 2018 - 2021
USGS Groundwater Quality Sampling Plan**

1. Continue monitoring 4 main aquifers and clustered monitoring wells. Adjust clustered monitoring well sampling to biannual samples, to fulfill monitoring network request from DEQ

- a. 2018: Missouri River wells (*-cluster site part of the aquifer of interest)
 - i. 24 Cluster wells
 - 1. *Boyer Chute
 - 2. *Walthill
 - 3. Venice
 - 4. Springfield (south)
 - 5. Tekamah
 - 6. Blair Airport
 - 7. Arlington Shallow
 - 8. *Decatur Shallow
 - 9. Springfield (city)
 - 10. Valley
 - ii. 17 network wells
- b. 2019: Platte/Elkhorn wells
 - i. 30 Cluster wells (*-cluster site part of the aquifer of interest)
 - 1. *Ashland
 - 2. *Venice
 - 3. *Springfield (south)
 - 4. *Elkhorn Crossing
 - 5. Tekamah
 - 6. Homer
 - 7. Arlington Deep and Medium
 - 8. Jackson
 - 9. Decatur Deep
 - 10. Winnebago
 - 11. West Sarpy
 - 12. *Valley (Valley medium and shallow are Platte)
 - ii. 15 Network wells
 - iii. Collect additional samples (~5), including irrigation wells, in western Douglas and Sarpy Counties to better understand Phase II area
- c. 2020: Upland wells
 - i. 21 Cluster wells (*-cluster site part of the aquifer of interest)
 - 1. *Blair Airport
 - 2. Boyer Chute
 - 3. Walthill
 - 4. Venice
 - 5. Springfield (south)
 - 6. Tekamah
 - 7. *Arlington Shallow
 - 8. *Decatur Shallow
 - 9. Springfield (city)

Papio-Missouri River NRD 2018 - 2021
USGS Groundwater Quality Sampling Plan

- ii. 17 Network wells
- iii. Include extra sites (~4) near Kennard area to better understand paleovalley
- d. 2021: Dakota wells
 - i. 27 Cluster wells (*-cluster site part of the aquifer of interest)
 - 1. *Tekamah
 - 2. *Homer
 - 3. Venice
 - 4. *Springfield (south)
 - 5. Elkhorn Crossing
 - 6. *Arlington medium and deep
 - 7. *Jackson
 - 8. *Decatur Deep
 - 9. *Winnebago
 - 10. *West Sarpy
 - 11. Valley (Valley Deep is Dakota)
 - ii. 12 Network wells
- e. Incorporate new cluster wells as they are developed
 - i. Starting with Valley-establish baseline, then incorporate into monitoring schedule

2. Contaminants of Emerging Concern (CEC) sample collection

- a. Collect CEC samples at monitoring wells close to streams or other potentially impacted areas (landfills, high urban development). Focus on shallower areas. CECs include pharmaceuticals, steroids, urban contaminants
- b. Collect samples twice, once in early June, once in October 2019
 - i. Ashland (3)
 - ii. Venice (3)
 - iii. Springfield (3)
 - iv. Elkhorn Crossing (2)
 - v. Boyer Chute (3)
 - vi. Arlington (1)
 - vii. Springfield (city) (1)
 - viii. Decatur (1)
 - ix. Valley (2)
 - x. Total of 19 sites, sampled twice for pharms, once for hormones = 38 samples, plus 5 blank/rep combos (10 total samples) = 48 samples
- c. SIR of results, published in FY2022

Totals for the project:

Papio-Missouri River NRD 2018 - 2021
USGS Groundwater Quality Sampling Plan

Federal Fiscal Year:

	FFY18 (April 1- Sept 30, 2018)	FFY19 (October 1, 2018- September 30, 2019)	FFY20 (October 1, 2019- September 30, 2020)	FFY21 (October 1, 2020- September 30, 2021)	FFY22 (October 1, 2021-March 31, 2022)	Total
USGS	\$19,300	\$25,900	\$26,700	\$32,000	\$4,800	\$108,700
PMRNRD	\$111,000	\$151,300	\$151,100	\$151,200	\$18,200	\$582,800
Total	\$130,300	\$177,200	\$177,800	\$183,200	\$23,000	\$691,500

State Fiscal Year:

	State FY18 (April 1- June 30, 2018)	State FY19 (July 1, 2018-June 30, 2019)	State FY20 (July 1, 2019-June 30, 2020)	State FY21 (July 1, 2020-June 30, 2021)	State FY22 (July 1, 2021-March 31, 2022)	Total
USGS	\$9,650	\$29,075	\$26,500	\$30,675	\$12,800	\$108,700
PMRNRD	\$55,500	\$168,975	\$151,150	\$151,175	\$56,000	\$582,800
Total	\$65,150	\$198,050	\$177,650	\$181,850	\$68,800	\$691,500

COST SUMMARY: PMRNRD groundwater quality sampling

	FY18	FY19	FY20	FY21	FY22	Total
Salaries	\$37,600	\$50,500	\$50,600	\$62,500	\$10,000	\$211,200
Overtime	\$0	\$0	\$0	\$0	\$0	\$0
Travel	\$1,200	\$1,200	\$2,900	\$3,200	\$0	\$8,500
Vehicles	\$2,000	\$2,100	\$2,200	\$2,200	\$300	\$8,800
Training	\$0	\$1,000	\$1,000	\$0	\$0	\$2,000
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Supplies	\$500	\$500	\$500	\$500	\$0	\$2,000
Other Cost Center	\$7,400	\$0	\$0	\$0	\$0	\$7,400
Contracts	\$0	\$0	\$0	\$0	\$0	\$0
USGS Labs	\$25,700	\$45,500	\$42,700	\$18,400	\$0	\$132,300
non-USGS Labs	\$0	\$0	\$0	\$0	\$0	\$0
Shipping	\$300	\$400	\$600	\$400	\$0	\$1,700
Publications	\$0	\$0	\$0	\$7,900	\$0	\$7,900
SV & Miscellaneous	\$0	\$0	\$0	\$0	\$0	\$0
Total (without Leave or Contingency)	\$74,700	\$101,200	\$100,500	\$95,100	\$10,300	\$381,800
CONTINGENCY FACTOR	\$4,500	\$6,100	\$6,000	\$5,700	\$600	\$22,900
DIST. TRAINING & MISC PROJ TIME FACTOR	\$0	\$0	\$0	\$0	\$0	\$0
LEAVE FACTOR	\$6,800	\$9,100	\$9,100	\$11,200	\$1,800	\$38,000
PROJECT EXPENSES	\$86,000	\$116,400	\$115,600	\$112,000	\$12,700	\$442,700
SCIENCE SUPPORT	\$0	\$0	\$0	\$0	\$0	\$0
BASIS + NET FUNDING REQUIREMENT	\$86,000	\$116,400	\$115,600	\$112,000	\$12,700	\$442,700
COST CENTER	\$27,500	\$36,800	\$38,000	\$45,500	\$6,900	\$154,700
FACILITIES	\$5,600	\$7,600	\$7,800	\$9,400	\$1,400	\$31,800
BUREAU	\$11,200	\$16,400	\$16,400	\$16,300	\$2,000	\$62,300
BASIS+ INDIRECT COSTS Subtotal	\$44,300	\$60,800	\$62,200	\$71,200	\$10,300	\$248,800
BASIS + GROSS	\$130,300	\$177,200	\$177,800	\$183,200	\$23,000	\$691,500
AUGMENTATION REDUCTION	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL INDIRECT COSTS (INCLUDES SS)	\$44,300	\$60,800	\$62,200	\$71,200	\$10,300	\$248,900
ESTIMATED TOTAL PROJECT REQUIREMENTS	\$130,300	\$177,200	\$177,800	\$183,200	\$23,000	\$691,500
USGS Cooperative Matching Funds	\$19,300	\$25,900	\$26,700	\$32,000	\$4,800	\$108,700
Cost to the PMRNRD	\$111,000	\$151,300	\$151,100	\$151,200	\$18,200	\$582,800

COST SUMMARY: PMRNRD groundwater quality sampling

	FY18	FY19	FY20	FY21	FY22	Total
Salaries	\$44,400	\$59,600	\$59,700	\$73,700	\$11,800	\$249,200
Travel/Vehicles	\$3,200	\$3,300	\$5,100	\$5,400	\$300	\$17,300
Training	\$0	\$1,000	\$1,000	\$0	\$0	\$2,000
Equipment/Supplies	\$7,900	\$500	\$500	\$500	\$0	\$9,400
USGS Labs	\$25,700	\$45,500	\$42,700	\$18,400	\$0	\$132,300
Shipping	\$300	\$400	\$600	\$400	\$0	\$1,700
Publications	\$0	\$0	\$0	\$7,900	\$0	\$7,900
Contingency	\$4,500	\$6,100	\$6,000	\$5,700	\$600	\$22,900
PROJECT EXPENSES	\$86,000	\$116,400	\$115,600	\$112,000	\$12,700	\$442,700
<i>COST CENTER</i>	<i>\$27,500</i>	<i>\$36,800</i>	<i>\$38,000</i>	<i>\$45,500</i>	<i>\$6,900</i>	<i>\$154,700</i>
<i>FACILITIES</i>	<i>\$5,600</i>	<i>\$7,600</i>	<i>\$7,800</i>	<i>\$9,400</i>	<i>\$1,400</i>	<i>\$31,800</i>
<i>BUREAU</i>	<i>\$11,200</i>	<i>\$16,400</i>	<i>\$16,400</i>	<i>\$16,300</i>	<i>\$2,000</i>	<i>\$62,300</i>
INDIRECT COSTS Subtotal	\$44,300	\$60,800	\$62,200	\$71,200	\$10,300	\$248,800
ESTIMATED TOTAL PROJECT REQUIREMENTS	\$130,300	\$177,200	\$177,800	\$183,200	\$23,000	\$691,500
USGS Cooperative Matching Funds	\$19,300	\$25,900	\$26,700	\$32,000	\$4,800	\$108,700
Cost to the PMRNRD	\$111,000	\$151,300	\$151,100	\$151,200	\$18,200	\$582,800

Labor costs: PMRNRD groundwater quality sampling

TASK	STAFF MEMBER	FY17 DAILY RATE	FY18	FY19	FY20	FY21	FY22	Total Days	Total Cost
Data Collection	GS-9	325	40	58	53	43	0	194	\$ 63,100
Data Collection	GS-7	226	40	58	56	43	0	197	\$ 44,500
Data interpretation	GS-11	373	21	24	19	18	10	92	\$ 34,300
Report writing/preparation	GS-11	373	0	35	45	45	10	135	\$ 50,400
Report writing/preparation	GS-9	325	0	23	13	12	10	58	\$ 18,900
Review/Publication	GS-11	373	0	0	17	20	0	37	\$ 13,800
Project Management/Administration	GS-11	373	13	14	13	13	12	65	\$ 24,200
								Total	\$ 249,200.00

	Federal Funds	State or Local
Appropriated	1,458,031	0
Other Federal Agencies	468,521	0
Cooperative Matching Funds	591,119	1,847,548
Total	2,517,671	1,847,548

USGS Nebraska Water Science Center FY16 Funding as of October 6, 2017

