



United States Department of the Interior

U.S. GEOLOGICAL SURVEY

CENTRAL MIDWEST WATER SCIENCE CENTER

MISSOURI

ILLINOIS

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400 S. Clinton St. Rm 269
Iowa City, IA 52240

October 30, 2023

Mr. Anthony Dahl
Operations Supervisor
City of Independence Municipal Services
14700 East Cement City Road
Independence, MO 64058

Dear Mr. Dahl:

Attached is our standard joint-funding agreement for the Hydrologic Monitoring of Groundwater Quality and Groundwater Movement of the Missouri River Alluvial Aquifer near the City of Independence Municipal Well Field, 2024-2027, for the period October 1, 2023, through September 30, 2027, in the amount of \$601,300 from your agency. U.S. Geological Survey contributions for this agreement are \$257,800 for a combined total of \$859,100. Please sign and return a copy to Julie A. Asher via e-mail.

Federal law requires that we have a signed agreement before we start or continue work. Please return the signed agreement by **November 17, 2023**. If, for any reason, the agreement cannot be signed and returned by the date shown above, please contact Katie (KT) Hulsey by phone number (816) 554-3489 or email khulsey@usgs.gov to make alternative arrangements.

This is a fixed cost agreement to be billed quarterly via Down Payment Request (automated Form DI-1040). Please allow 30-days from the end of the billing period for issuance of the bill. If you experience any problems with your invoice(s), please contact Julie Asher at phone number (573) 308-3558 or email at jasher@usgs.gov.

The results of all work performed under this agreement will be available for publication by the U.S. Geological Survey. We look forward to continuing this and future cooperative efforts in these mutually beneficial water resources studies.

Sincerely,

Kelly Warner
Acting Director

Enclosure
24NEJFA224

Form 9-1366
(May 2018)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
Water Resource Investigations

Customer #: 6000001462
Agreement #: 24NEJFA224
Project #: NE00H64
TIN #: 44-6000190

Fixed Cost Agreement YES[X] NO[]

THIS AGREEMENT is entered into as of the October 1, 2023, by the U.S. GEOLOGICAL SURVEY, Central Midwest Water Science Center, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the City of Independence Municipal Services party of the second part.

1. The parties hereto agree that subject to the availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation, the **Hydrologic Monitoring of Groundwater Quality and Groundwater Movement of the Missouri River Alluvial Aquifer near the City of Independence Municipal Well Field, 2024-2027**, 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) include In-Kind-Services in the amount of \$0.00.

- (a) \$257,800 by the party of the first part during the period October 1, 2023 to September 30, 2027
- (b) \$601,300 by the party of the second part during the period October 1, 2023 to September 30, 2027
- (c) Contributions are provided by the party of the first part through other USGS regional or national programs, in the amount of: \$0.00.

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.

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 cost, 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. The Parties acknowledge that scientific information and data developed as a result of the Scope of Work (SOW) are subject to applicable USGS review, approval, and release requirements, which are available on the USGS Fundamental Science Practices website (<https://www2.usgs.gov/fsp/>).

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
Water Resource Investigations

Customer #: 6000001462
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Project #: NE00H64
TIN #: 44-6000190

9. Billing for this agreement will be rendered quarterly. Invoices not paid within 60 days from the billing date will bear Interest, Penalties, and Administrative cost at the annual rate pursuant the Debt Collection Act of 1982, (codified at 31 U.S.C. § 3717) established by the U.S. Treasury.

USGS Technical Point of Contact

Name: Katie (KT) Hulsey
Hydrologist
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U.S. Geological Survey
United States
Department of Interior

City of Independence Municipal Services

Signature

By  Date: 10/30/2023

Acting for: Name: Amy Beussink
Title: Director, Central Midwest WSC

Signatures

By _____ Date: _____

Name:
Title:

By _____ Date: _____

Name:
Title:

By _____ Date: _____

Name:
Title:



A PROPOSAL SUBMITTED TO:
City of Independence Municipal Services

Hydrologic Monitoring of Groundwater Quality and Groundwater Movement of the Missouri River Alluvial Aquifer near the City of Independence Municipal Well Field, 2024-2027



U.S. Geological Survey
Central Midwest Water Science Centers

USGS Contacts: Katie Hulsey (khulsey@usgs.gov), Judith Thomas (juthomas@usgs.gov)
Date: 06/21/2023

Hydrologic Monitoring of Groundwater Quality and Groundwater Movement of the Missouri River Alluvial Aquifer near the City of Independence Municipal Well Field, 2024-2027

CENTRAL MIDWEST WATER SCIENCE CENTER

Background/Introduction

The City of Independence, Missouri operates a well field within the city limits of Sugar Creek, Missouri, in the Missouri River flood plain (fig. 1). The well field draws groundwater from the Missouri River alluvial aquifer and supplies more than 250,000 people in several communities (City of Independence, 2023). Since 1995, the USGS and the City of Independence, Missouri have completed several studies in response to potential groundwater contamination. In a study completed in 2010, water-quality results indicated that agricultural land use, nearby use of road salt, and seasonal changes in water quality of the Missouri River can affect water quality of the alluvial aquifer near the Independence well field (Kelly, 2010). The report identified existing development and point sources near the well field including landfills, permitted hazardous waste, commercial development, highway construction, highway and rail line traffic, fly ash used for mine stabilization, a closed oil refinery, land application of solid waste, a demolition landfill, off-channel sand dredging, municipal wastewater treatment facilities, and agricultural activity (Kelly, 2010). In 2012, the groundwater sampling plan (Wilkinson, 2012) was updated to incorporate observations from the ~2010 evaluations of source-water contributions, contributing recharge areas, groundwater travel times, and alluvial water-quality conditions and trends.

A USGS report by Kay (2022) completed an analysis of long-term spatial and temporal trends in water-quality over a 20-year period (1997-2018). The report noted several inorganic constituents, including arsenic, antimony, barium, lead, selenium, and uranium, exceeded maximum contaminant levels (MCL) in at least one sample collected during 1997-2018. Notably, the median concentration of arsenic exceeded the MCL at five monitoring wells. Concentrations of iron and manganese exceeded secondary maximum contaminant levels (SMCL) for the majority of samples collected at nearly all sites. Changes in groundwater quality in the monitoring network can aid in identifying the movement of contaminants before those contaminants can reach supply wells, which can reduce treatment costs and allow time for mitigation efforts, if necessary.

In addition to routine groundwater sampling (Wilkinson 2012), an initial PFAS sampling campaign was completed in 2022 to investigate if PFAS compounds were present in the

groundwater monitoring field. A total of 26 total groundwater samples and quality assurance samples were collected and analyzed for PFAS compounds by the National Water Quality Laboratory. PFAS are a group of man-made chemicals that are of emerging concern. These constituents are known to be persistent in the environment and the human body and evidence suggests they may lead to adverse human health effects (Boone and others, 2019; U.S. Environmental Protection Agency [EPA], 2019). Many studies have detected PFAS in source water and treated drinking water samples (Boone and others, 2019; Fisher and others, 2019; Glassmeyer, 2019). The EPA has proposed MCL for six PFAs compounds (EPA, 2023). Legislation has been received by Congress to require the Administrator of the EPA to designate PFAS as hazardous substances (Congress, 2020).

Initial PFAS concentration results, from 2022 sampling campaign, indicated three PFAS compounds detected at relatively low concentration. No samples indicated PFAs compound concentrations above any of the current EPA proposed MCL (EPA 2023). Additional PFAS samples are required for confirmation and statistical analysis.

The Missouri River alluvial aquifer provides the primary municipal and drinking water for Independence, Missouri, several surrounding communities, and regional agriculture and industry. Continued evaluation of groundwater movement and water-quality trends for this water resource is critical for guiding Independence city planners.

Problem

To optimally manage the current water resource demands on the Missouri River alluvial aquifer near Independence and provide tools for future planning decisions a thorough understanding of groundwater movement must be established and groundwater quality must be analyzed for known and emerging contaminants of concern. The City currently utilizes a groundwater model developed in 2010 and many of the monitoring wells in the wellfield were installed based on groundwater model simulations done in 1996. Changes since the last model update over the last 13 years in water supply demands, precipitation, land use, and infrastructure have not been included in this model. Also, the monitoring wells that are used to assess changes in water levels and water quality have not been fully inspected and redeveloped to make sure the connection to the aquifer is representative of the alluvial aquifer in situ water at a specific depth. In addition, many of the monitoring wells were installed based on 1996 model results and wellfield operations at that time. The current effectiveness of the monitoring wells as early warning sentinels for production wells may be outdated given changes mentioned above since the 2010 model update. Additionally, new information on water quality (such as PFAS) may inform understanding of the alluvial aquifer and improve management of the system.

Objectives and Scope

The objective of this project proposal is to improve understanding of groundwater movement and groundwater quality in the Missouri River alluvial aquifer within and near the City of Independence municipal well field by evaluation and updating of the existing groundwater model (Kelly, 2010). The study objective will be accomplished by completing the following major work tasks:

- A. Evaluation of the existing groundwater model and update, as needed, to reflect current understanding of hydrogeologic framework and water resource use.
- B. Evaluate and document wellbore integrity following USGS best practices (WMA policy reference) to assure accuracy of water level measurement and water quality data.
- C. Sample wells in the monitoring network annually and include the collection and analysis for PFAS compounds.

Approach

To accomplish the project objectives, the study approach will include the following general work tasks.

- A. Evaluation of the existing groundwater model and update, as needed.
- B. Evaluate and document well integrity.
- C. Sample wells in the monitoring network annually including sample collection and analysis for PFAS, a constituent of emerging concern.

Task A: Evaluation of the existing groundwater model will consist of the following activities:

1. Compile and analyze available data; including but not limited to geologic, alluvial aquifer hydraulic properties, supply well operation data, pump tests, river and water-level measurements.
2. Examine existing groundwater model, hydrogeologic framework, and model construction (Kelly 2010).
3. Comparison of existing data (both operational and subsurface) and present hydrogeologic framework to the existing groundwater model construction and model results.
4. Update/construct groundwater model, as needed, to reflect available data, current (2023) supply well operating activities, and future potential supply well operating scenarios and/or future well additions.
5. Calibrate, analyze, interpret any groundwater model results.
6. Documentation and publish data used, model, specifications, and interpretation in a USGS Scientific Investigation Report and archive the model as a USGS data release.

The software MODFLOW 6 (USGS, Langevin and others, 2017), will be used to develop the updated model.

Task B: Monitoring Well Network Integrity Evaluation per USGS best practices (WMA policy memo).

1. Review of historic water level readings and wellbore construction documentation.
2. Collect and document water level reading and total depth measurement (sounding) for all monitoring wells.
3. As needed based on previous step, activities to remove fine debris and documentation on physical wellbore integrity. Monitoring wells can be cleared of debris through careful application of pumping and purging techniques and bailers can physically collect and remove debris. Wellbore cameras can image and record the wellbore casing and screened interval to confirm material integrity and removal of debris.

Task C: Groundwater levels and quality will be determined in the Missouri River alluvial aquifer near the Independence well field from groundwater monitoring wells (fig. 2) and the

analysis of groundwater samples according to the City of Independence Groundwater Monitoring Plan (Wilkison, 2012; table 1).

1. Groundwater levels will be measured and documented.
2. All discrete water samples will be analyzed for field properties and chemical constituents that include major ions, trace elements, and nutrients. Samples from selected wells will be analyzed for fuel-related volatile organic compounds. Specific constituents for each constituent group are listed in appendix A.
3. One PFAS sample will be collected per well cluster that is scheduled to be sampled during 2024 and 2027 per the monitoring plan designed in 2012 (table 1); such that approximately one third of the monitoring wells will be sampled each year (a total of 8 – 10 PFAS samples per year) allowing for continued screening and confirmation dataset for this contaminant. Generally, the shallowest well in each cluster will be sampled and PFAS samples will be collected according to USGS collection and processing techniques.

Quality Assurance Plan

USGS Fundamental Science Practices (FSP) will be followed to provide unbiased, objective, and impartial scientific information. Quality assurance (QA) measures, as described in the FSP and CMWSC Quality Assurance Plan, will be followed to ensure the completeness of the information communicated during the study. The QA objectives for the collection and communication of information will withstand scientific scrutiny, ensure that data are obtained by methods appropriate for its intended used, and ensure that data are representative and of known completeness and comparability.

Data used in the modeling process will be derived from reliable host sources, including the USGS National Water Information System. The data gathered will be quality assured by the project chief. The model performance will be evaluated by comparing modeled and measured groundwater levels and streamgage data. All digital data and models will be reviewed by USGS personnel to ensure proper documentation and technical standards established by the USGS Office of Groundwater (OGW). The models and modeling results will be archived in accordance with Office of Groundwater Technical Memorandum 2016.02 (USGS, 2016). Policies and procedures for archiving groundwater data and project information are also provided in the Central Midwest Water Science Center data management plans. The project and project budget will be reviewed by USGS management on a quarterly basis to ensure project timelines are met.

In addition to Standard USGS Quality Assurance (QA) - Quality Control (QC) methodology described in the original “Groundwater Monitoring and Water Quality in the City of Independence Municipal Well Field, October 2017 – September 2020” proposal, quality control samples for PFAS analysis will be collected and processed. Blank samples will include an equipment and source solution blank, 2 field blanks each year, and a trip blank. Equipment blanks are used to evaluate the equipment as a source of contamination and source solution blanks evaluate the blank water as a source of contamination. Field blanks evaluate the cleaning processes in the field and a trip blank is PFAS-free water that is kept with collected samples during collection, processing, and shipping. Two field duplicates will be collected each year to determine variability, and a matrix spike and matrix spike duplicate will be collected to determine analyte recovery and degradation from matrix interferences.

Monitoring wellbore redevelopment activities will provide assurance of wellbore integrity and support assurance of data accuracy, both water level and water quality. Wellbore redevelopment activities will be conducted per USGS guidance and procedures (USGS, 2011)

Deliverables

1. Annual groundwater sample results will be quality assured and entered into the USGS National Water Information System (<https://waterdata.usgs.gov/nwis>), which is a publicly accessible permanent repository for all USGS hydrologic and water-quality data.
2. USGS Scientific Investigation Report describing and documenting the evaluation and update of groundwater model end of fiscal year 2027.
3. Monitoring well redevelopment activities to evaluate wellbore integrity and fine debris removal to be completed primarily throughout 2024.

Timeline and Budget

Activity	FY ¹ 2024				FY 2025				FY 2026				FY 2027			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Groundwater sampling and data QA			X	X			X	X			X	X			X	X
Monitoring well redevelopment		X	X													
GW Model Evaluation: data compile		X	X	X	X											
GW Model Evaluation: existing model comparison				X	X	X	X									
GW Model Evaluation: model update/construction					X	X	X	X	X	X	X	X				
GW Model Evaluation: calibration/interpretation								X	X	X	X	X	X	X		
GW Model Evaluation: documentation and archive												X	X	X	X	X

Funding	FY ¹ 2024	FY 2025	FY 2026	FY 2027	Total
City of Independence	\$117,300	\$145,300	\$173,800	\$164,900	\$601,300
USGS match ²	\$50,300	\$62,300	\$74,500	\$70,700	\$257,800
Total	\$167,600	\$207,600	\$248,300	\$235,600	\$859,100

¹FY = Federal fiscal year, October 1 – September 30.

²USGS Match funds are estimated, actual USGS contribution will depend on the availability of funding

Personnel

Hydrologist GS-11 - Project manager, lead modeler, report lead

Hydrologist GS-12 - Modeling mentor

Hydrologist GS-12 - Assist GS-11 and GS-7 in project, provide guidance on USGS policy and Fundamental Science Practices

Hydrologist GS-7 - Support modeler, report support, monitor wellbore redevelopment activities

Figures

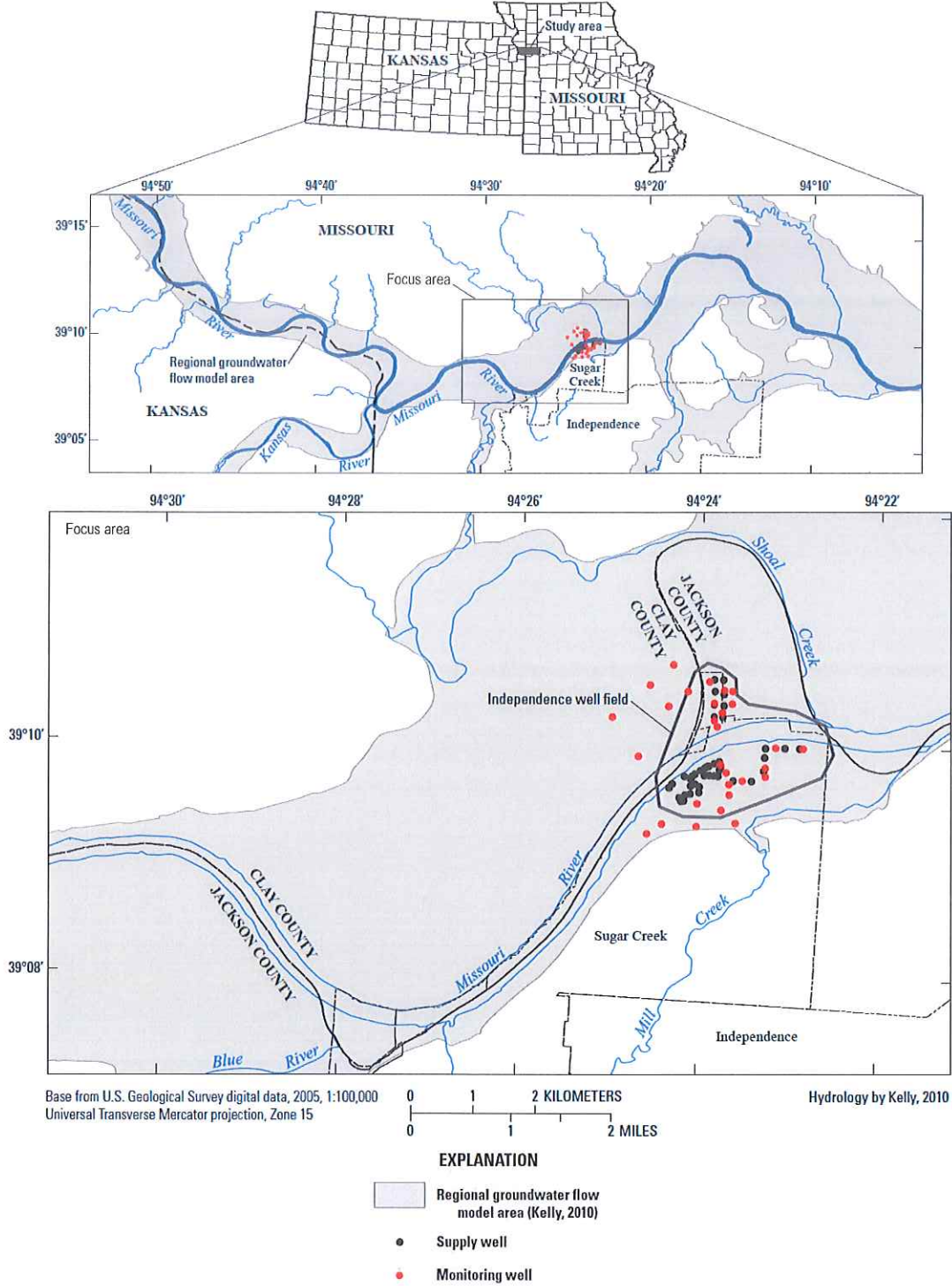


Figure 1. Modified from Kelly, 2010. Focus area and location of City of Independence well field in relation to regional groundwater flow model.

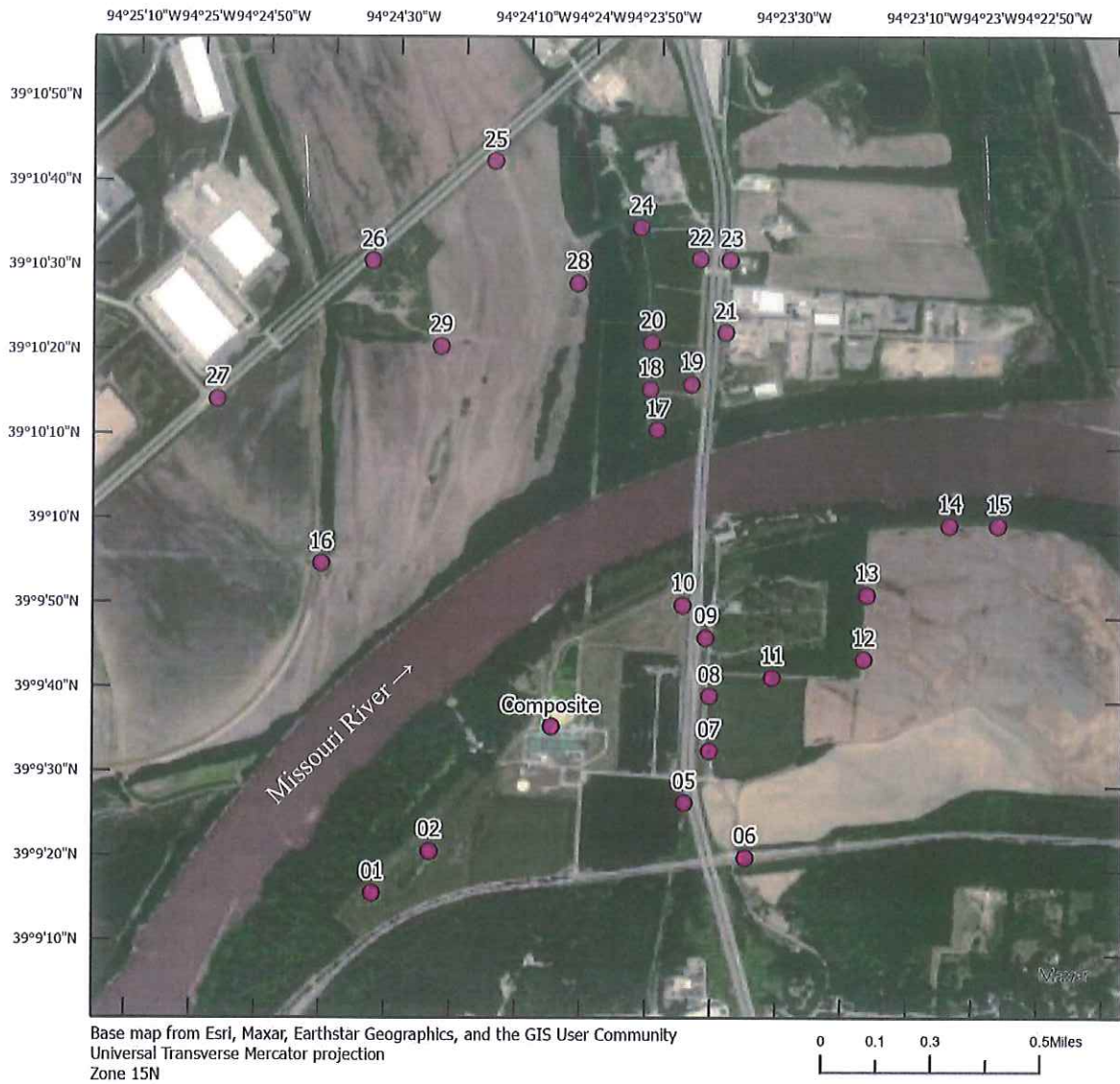


Figure 2. Independence monitoring well cluster locations and well cluster number identifiers. Each well cluster consists of 2-3 individual monitoring wells screened at different vertical depths within the alluvial aquifer. The individual monitoring well identifier includes the well cluster number identifier and letter A, B, or C to indicate the well's depth, deep, medium, or shallow respectively.

TABLE 1. Long-term monitoring schedule for Independence wellfield annual sampling, fiscal years 2023 – 2030. The individual monitoring well identifier includes the well cluster number identifier and letter A, B, or C to indicate screened interval relative depths of deep, medium, or shallow respectively.

USGS Site Number	Monitoring Well Identifier	Fiscal Year						
		2024	2025	2026	2027	2028	2029	2030
390920094243501	1A		X		X		X	
390920094243502	1B ¹	X	X	X	X	X	X	X
390923094242001	2A	X		X		X		X
390923094242002	2B ¹	X	X	X	X	X	X	X
390924094234502	5A	X		X		X		X
390924094234503	5B		X		X		X	
390921094233401	6A		X		X		X	
390936094233901	7A							
390936094233902	7B		X		X		X	
390936094233903	7C	X		X		X		X
390942094233901	8A				X			
390942094233902	8B	X				X		
390948094234001	9A			X				X
390948094234002	9B				X			
390948094234003	9C ¹	X	X	X	X	X	X	X
390951094234501	10A		X				X	
390951094234502	10B	X				X		
390951094234503	10C ¹	X	X	X	X	X	X	X
390945094233001	11A		X				X	
390945094233002	11B			X				X
390945094233003	11C ¹	X	X	X	X	X	X	X
390945094231501	12A	X				X		
390945094231502	12B		X				X	
390950094231501	13A	X				X		
390950094231502	13B		X				X	
391000094230801	14A				X			
391000094230802	14B	X				X		
391000094230803	14C		X				X	
391000094224001	15A			X				X
391000094224002	15B			X	X			X
390955094244001	16A	X		X		X		X
390955094244002	16B		X		X		X	

391009094235901	17A		X		X		X	
391009094235902	17B	X				X		
391014094235701	18A	X	X	X	X	X	X	X
391014094235702	18B	X				X		
391018094234401	19A	X	X	X	X	X	X	X
391018094234402	19B	X	X	X	X	X	X	X
391023094235601	20A	X	X	X	X	X	X	X
391023094235602	20B		X		X		X	
391023094233701	21A				X			
391023094233702	21B		X				X	
391023094233703	21C	X				X		
391029094234501	22A		X		X		X	
391029094234502	22B		X		X		X	
391029094234503	22C	X		X		X		X
391029094233701	23A	X		X		X		X
391029094233702	23B			X				X
391029094233703	23C			X				X
391034094235301	24A	X				X		
391034094235302	24B				X			
391034094235303	24C	X		X		X		X
391042094241701	25A		X				X	
391042094241702	25B			X				X
391042094241703	25C		X				X	
391032094243301	26A				X			
391032094243302	26B	X				X		
391015094245802	27A			X				X
391015094245803	27B	X	X	X	X	X	X	X
391029094240202	28A ¹				X			
391029094240201	28B ¹	X				X		
391021094242302	29A ¹		X				X	
391021094242301	29B ¹			X				X
390939094240201	Composite well field ²	X	X	X	X	X	X	X
	Total sites sampled	29	29	27	28	29	29	27
¹ Well also to be sampled for fuel-related volatile organic compounds (VOCs).								
² Composite sample of raw water inflow to the water treatment plant.								
Yellow highlighted indicates well will also be sampled for PFAs compounds								
Grey highlighted indicates sampling not included as part of this project proposal								

References

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APPENDIX A

Analyte	CAS Number	Reporting Level	Unit
Nutrients (USGS Schedule 101)			
Nitrogen, ammonia	7664-41-7	0.04	mg/L
nitrogen, nitrite	14797-65-0	0.002	mg/L
nitrogen, nitrite + nitrate	-	0.08	mg/L
phosphorus, phosphate, ortho	14265-44-2	0.008	mg/L
Major Anions (USGS Schedule 7)			
Chloride	16887-00-6	0.04	mg/L
Fluoride	16984-48-8	0.02	mg/L
pH, laboratory	-	0.1	pH
Sp. Conductance Lab	-	5	uS/cm
Sulfate	14808-79-8	0.04	mg/L
Major cations and trace elements (USGS Schedule 1673)			
Aluminum	7429-90-5	4	ug/L
Antimony	7440-36-0	0.12	ug/L
Arsenic	7440-38-2	0.2	ug/L
Barium	7440-39-3	0.2	ug/L
Beryllium	7440-41-7	0.02	ug/L
Boron	7440-42-8	10	ug/L
Cadmium	7440-43-9	0.06	ug/L
Calcium	7440-70-2	0.04	mg/L
Chromium	7440-47-3	1	ug/L
Cobalt	7440-48-4	0.06	ug/L
Copper	7440-50-8	0.8	ug/L

Iron	7439-89-6	10	ug/L
Lead	7439-92-1	0.06	ug/L
Lithium	7439-93-2	0.3	ug/L
Magnesium	7439-95-4	0.02	mg/L
Manganese	7439-96-5	0.8	ug/L
Molybdenum	7439-98-7	0.1	ug/L
Nickel	7440-02-0	0.4	ug/L
pH, laboratory	-	0.1	pH
Selenium	7782-49-2	0.1	ug/L
Silica	7631-86-9	0.1	mg/L
Silver	7440-22-4	2	ug/L
Sodium	7440-23-5	0.8	mg/L
Strontium	7440-24-6	1	ug/L
Thallium	7440-28-0	0.08	ug/L
Uranium	7440-61-1	0.06	ug/L
Vanadium	7440-62-2	0.2	ug/L
Zinc	7440-66-6	4	ug/L
Fuel-related volatile organic compounds (USGS Schedule 4439)			
1-Bromo-4-fluorobenzene (surrogate)	460-00-4		pct
Benzene	71-43-2	0.026	ug/L
Ethylbenzene	100-41-4	0.036	ug/L
m- and p-Xylene	179601-23-1	0.08	ug/L
o-Xylene	95-47-6	0.032	ug/L
tert-Butyl methyl ether	1634-04-4	0.1	ug/L
Toluene	108-88-3	0.2	ug/L
Toluene-d8 (surrogate)	2037-26-5		pct
PFAS compounds (USGS Lab Code 9660)			
11Cl-PF3OUDS	-	16.4	ng/L
4:2FTS	-	17.5	ng/L
6:2FTS	-	52.4	ng/L
8:2FTS	-	19.1	ng/L
9Cl-PF3ONS	-	18.8	ng/L
ADONA	-	2	ng/L
FBSA	-	101	ng/L
FHx-SA	-	38.9	ng/L
FOSA	-	15.6	ng/L
GenX	-	17.7	ng/L
N-EtFOSAA	-	12.2	ng/L
N-EtFOSA-M	-	162	ng/L
N-MeFOSAA	-	15.4	ng/L

N-MeFOSA-M	-	123	ng/L
PFBA	-	16.2	ng/L
PFBS	375-73-5	20	ng/L
PFBS	-	10.1	ng/L
PFDA	-	20.6	ng/L
PFDoA	-	17.8	ng/L
PFDS	-	10.5	ng/L
PFHpA	-	43.1	ng/L
PFHpS	-	18.5	ng/L
PFHxA	-	39.8	ng/L
PFHxS Branched	-	22.8	ng/L
PFHxS Linear	-	11.4	ng/L
PFNA	-	7.8	ng/L
PFNS	-	16.1	ng/L
PFOA	-	5.2	ng/L
PFOS Branched	-	19.8	ng/L
PFOS Linear	-	14.3	ng/L
PFPeA	-	12.8	ng/L
PFPeS	-	12.5	ng/L
PFTeDA	-	24.7	ng/L
PFTTrDA	-	15.6	ng/L
PFUnDA	-	16.2	ng/L



INDEPENDENCE

* WATER DEPARTMENT *

MEMORANDUM

DATE: November 27, 2023

TO: Richelieu Sese, Finance & Administration Dept. Procurement Specialist

FROM: Anthony Dahl Water Production Operations Supervisor

SUBJECT: Courtney Bend Water Treatment Plant USGS Background Information

Since 1996, the United States Geological Survey (USGS) has been sampling and analyzing the monitoring well network surrounding the Independence well fields. The monitoring wells provide early warning of any potential contamination approaching the drinking water wells. This agreement will continue collection and testing of groundwater samples from the monitoring well network for a three year period. The contract will also add sampling of the monitoring wells for emerging contaminants per- and polyfluoroalkyl substances (PFAS). This will provide data regarding the possible presence of these chemicals in the aquifer, prior to that water reaching the Independence drinking water wells.

The fiscal impact to the City is \$601,300.00. Funding for the Courtney Bend Water Treatment Plant USGS Well Monitoring Project is included in the fiscal year 2023-2024 proposed budget, page 262, account number 4830-5220-614110. Cost allocation table below.

Funding	FY ¹ 2024	FY 2025	FY 2026	FY 2027	Total
City of Independence	\$117,300	\$145,300	\$173,800	\$164,900	\$601,300
USGS match ²	\$50,300	\$62,300	\$74,500	\$70,700	\$257,800
Total	\$167,600	\$207,600	\$248,300	\$235,600	\$859,100



INDEPENDENCE

* FINANCE & ADMINISTRATION *

PROCUREMENT LIMITED SOURCE JUSTIFICATION Purchases Above \$5,000

A Limited source is defined as:

A purchase that is clearly and legitimately limited to a single source or supply.

- A. If more than one company can respond to your specifications, it is not a Limited source.
- B. The use of Limited source purchases shall be limited only to specific instances, which are totally justified to satisfy compatibility or technical performance needs.

All Limited source purchases shall follow the City of Independence Procurement Policy Section 13.A - B.

I REQUEST THAT THE REFERENCED PURCHASE BE DECLARED A LIMITED SOURCE PURCHASE.

Proposed supplier name and address: US Dept. of the Interior (USGS) 1400 Independence Road Rolla, MO 65401	Estimated cost: \$601,300
Purchase Requisition #:	Munis Vendor ID # 21963 Or attach Supplier's W-9 Form

This is a Limited or Limited source purchase because (Check all that apply):

- Licensed or patented – supplier has a license or patent that makes them the Limited provider.
- One-of-a-kind** – there are no competitive alternatives available on the market.
- Limited Distributor** – Supplier is the Limited distributor for the region or municipality
- Compatibility** – must match existing brand or equipment for compatibility.
- Warranty/Replacement part** – for a specific brand or factory authorized warranty services.
- Grant** – Requirements for specific goods/services established in the grant language. Attach grant for support.
- Unique design** – must meet physical design or quality standards.
- Public Utility Services** – Necessary adjustment of utility facilities
- Other** - _____

- If the justification for Limited source is "Standardization" then additional supporting documentation must be provided. *
- Procurements of items which the City has established a standard of designating a brand name or manufacturer or by pre-approving via testing shall be competitively bid if there is more than one supplier for the item.

Describe the proposed goods or services.	Continuation of routine annual groundwater monitoring testing and sample analyses.
What are the specific <u>necessary</u> features that this supplier provides that are not available from other suppliers?	The monitoring well network was designed by USGS and they have been sampling and providing analytical results since 1996. The federal government also provides some monetary match for this project.
Describe your efforts to identify other potential sources and how similar goods or services are <u>unable</u> to meet the required objective.	The USGS sampling and analysis protocol is top notch. They analyze the data for trends in groundwater quality. They provide a federal match to cover a portion of the work. They provide an independent voice when groundwater quality is questioned and their staff are experts in water modeling and testing.
*Testing and Evaluations performed to support standardization.	
*How will standardization support the department/agency?	

Is this a one-time procurement? <input checked="" type="checkbox"/> No* <input type="checkbox"/> Yes	*On-going Limited Source procurement requires justification to be renewed every two years.
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PRICE REASONABLENESS (Check all that apply and attach back-up documentation)

I reviewed the proposed price to current published catalog, price lists, or market prices as documented in the attachments and the proposed price is similar or less. Attach relevant documentation.

Based on my knowledge of the market, my experience of prior similar proposals, or knowledge imparted by technical experts.

The price is set by law or regulations.

Other: Previous Contract 210-17

Back-up documentation is attached.

STATEMENT OF NEED AND CERTIFICATION:
 My department's recommendation for Limited source is based upon an objective review of the product/service required and appears to be in the best interest of the City of Independence. I know of no conflict of interest on my part or personal involvement in any way with this request. No gratuities, favors or compromising action have taken place. Neither has my personal familiarity with particular brands, types of equipment, materials or firms been a deciding influence on my request to Limited source this purchase when there are other known suppliers to exist.

By submitting this form to Munis, I hereby certify that this justification for Limited source procurement is accurate and complete to the best of my knowledge and belief.

Printed/Typed Name: Anthony Dahl	Title: Operations Supervisor
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Note: If additional space is required, attach additional sheets of paper and submit with this completed form.