

**RESOLUTION NO. 1762**

**A RESOLUTION OF THE CITY OF NEVADA, MISSOURI, ACCEPTING THE BID AND AUTHORIZING PAYMENT TO KIMHEC, OF ST. LOUIS, MISSOURI FOR PFAS TESTING**

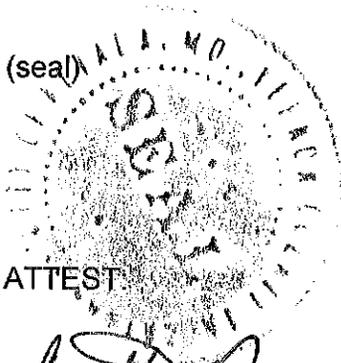
**WHEREAS**, On June 15, 2022, the US EPA released new "interim" health advisory levels for these two chemicals that were in the parts per quadrillion range and issued new "final" health advisories for two additional chemicals, PFBS and HFPA., and;

**WHEREAS**, On March 14, 2023, EPA proposed "final" National Primary Drinking Water Standards for PFOA and PFOS. They also issued a new combined standard for four additional compounds: PFNA, PFHxS, PFBS, and HFPO-DA. This is the first time in over 25 years that EPA has issued a new Primary Drinking Water Standard., and;

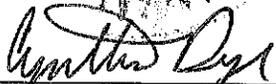
**WHEREAS**, the Missouri Department of Natural Resources operating permits renewals for the City of Nevada's Wastewater and drinking water include PFAS testing conditions.

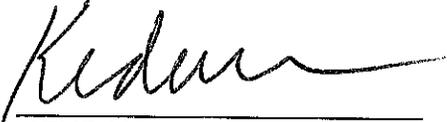
**NOW THEREFORE BE IT RESOLVED**, by the City Council of the City of Nevada, Missouri authorized the City Manager to make payment to KimHEC of St Louis Missouri in the amount not to exceed \$27,000.00 for PFAS testing and training.

**PASSED, APPROVED AND ADOPTED**, by the City Council of the City of Nevada, Missouri, this 6th day of February 2024.



ATTEST

  
\_\_\_\_\_  
CYNTHIA DYE, CITY CLERK

  
\_\_\_\_\_  
KENDALL VICKERS, MAYOR

## AGENDA ITEM

February

Subject: PFAS Testing

Department: Water and Wastewater Departments

Due to new EPA rules and regulations related to our Water and Wastewater permit renewal, PFAS testing is required.

Bids were solicited with two companies responding:

Company	Location	Testing	Amount
KimHEC	St Louis, MO	Quarterly Testing	\$26,092
Environmental Works	Springfield, MO	Bi-Annual Testing	\$29,000

### Manager Notes:

- **Recommendation for KimHEC to provide testing.** Their proposal also includes employee training so we can conduct testing in the future. The City of Nevada has utilized KimHEC services since 2016.
- PFAS compounds have been extensively used for more than 70 years in applications such as: non-stick coatings; stain-resistant carpeting; water-repelling clothing and fabrics; paper packaging for food; metal plating operations; and aqueous fire-fighting foam.



# Environmental Works, Inc.

\$29,000

August 10, 2023

Mr. Joe Tipper  
Water Treatment Plant Supervisor  
City of Nevada  
1300 W Cherry St.  
Nevada, MO 64772  
via electronic mail: [jtipper@nevadamo.gov](mailto:jtipper@nevadamo.gov)

**RE: Proposal for PFAS Sampling & Management Program  
City of Nevada, Missouri**

Mr. Tipper,

Thank you for the opportunity to meet with you, City Manager, Mark Mitchell, and your public water and wastewater engineering consultants on Friday, July 21, 2023. As requested in that meeting, Environmental Works, Inc. ("EWI") is providing this letter of recommendations and proposal for the preparation and execution of a program to evaluate and manage that class of chemicals known as "PFAS" in the City of Nevada public water supply ("PWS") and wastewater treatment plant ("WWTP"). As you know, PFAS is a class of chemicals that the U.S. Environmental Protection Agency ("USEPA") is investigating as "emerging contaminants." The USEPA, Missouri Department of Natural Resources ("MoDNR"), and other regulatory and health agencies are gathering data, issuing recommendations, and considering regulations and regulatory levels for PFAS chemicals. We are pleased to work with the City of Nevada to proactively gather information on the potential presence of PFAS in your systems and to help you develop a strategy to manage this issue.

## **PFAS EVALUATION**

We understand that some samples from the City of Nevada PWS were analyzed for PFAS by the MoDNR in 2017. Our understanding is that those results indicated "low levels" of PFAS. We further understand that no more recent data on PFAS in the PWS or WWTP systems is available. More than six years have passed since the last samples were analyzed, and the technology for analysis of PFAS has evolved much in that time. It is also possible that conditions have changed since those samples were analyzed in 2017. Therefore, we recommend that the City of Nevada take an incremental approach to evaluating if PFAS are present in the WWTP and PWS systems today. We recommend that samples first be collected and analyzed to see whether PFAS are present in these systems. Following evaluation of those results, we can assist you in developing actions appropriate for the conditions observed.

We recommend the evaluation start with two events to collect and analyze samples from selected points within the WWTP and PWS systems. We recommend that these events be separated by two to six months, to evaluate the potential for fluctuations in PFAS concentrations, if any. The data from these events will provide a baseline for whether PFAS are present, and if so, what types of PFAS and at what concentrations. This information will provide a good basis for evaluation of appropriate next steps.

LOCATIONS ACROSS THE CENTRAL US

1455 E. Chestnut Expressway, Springfield, MO 65802 | 417.890.9500 | [www.environmentalworks.com](http://www.environmentalworks.com)

Each evaluation event should include collection of samples from the following locations and analysis using the methods indicated below.

***Public Water Supply***

The following recommendations are based on our understanding of the PWS system from the "Water Treatment Plant Improvements – Preliminary Design Report," Black & Veatch, dated November 20, 2019, provided by the City of Nevada. This report summarizes the PWS system as follows:

*"Source water is supplied to the treatment plant by four local groundwater wells located less than a mile away from the plant. The plant utilizes a RO treatment process for removal of radionuclides. RO permeate is blended with well water and delivered to an air stripper for removal of carbon dioxide and hydrogen sulfide. Effluent from the aerator discharges into a treated water reservoir, where chlorine gas is added to oxidize any remaining hydrogen sulfide and meet disinfection requirements."*

<b>Location</b>	<b>Analytical Method(s)<sup>II</sup></b>
1. Wellhead-Deep Well #1	Method 1633 <sup>III</sup>
2. Wellhead-Deep Well #2	Method 1633
3. Wellhead-Deep Well #3	Method 1633
4. Wellhead-Deep Well #4	Method 1633
5. RO <sup>IV</sup> Permeate	Methods 533 and 537.1 <sup>V</sup>
6. Chlorinated Drinking Water	Methods 533 and 537.1
7. RO Concentrate	Method 1633

***Wastewater Treatment System***

8. WWTP Influent representative of total influent load	Method 1633
9. WWTP Effluent prior to receiving RO Concentrate	Method 1633
10. WWTP Biosolids representative of total normal production	Method 1633

***Work Plans and Reporting***

We suggest that for this initial sampling phase, a written sampling and analysis plan is not necessary and would add to the cost of this initial evaluation. However, if the City of Nevada would like, we can prepare a formal, written plan for these two sampling and analysis events.

Following receipt of the results from the first sampling and analysis event, EWI will orally report the results and initial observations to the City of Nevada. Following receipt of the results from the second sampling and analysis event, EWI will prepare a letter report to the City of Nevada, summarizing the sampling

events, results and observations from the data. EWI will also be available to the City of Nevada for consultation throughout this evaluation and management program.

***Quality Assurance***

PFAS have been widely used in consumer and commercial products and are now found widespread in our environment. In fact, many common materials traditionally used for personal protective equipment, sampling containers, and sampling devices used for environmental sampling and analyses contain PFAS. Therefore, to execute this sampling, EWI will follow our PFAS-specific water sampling standard operating procedure ("SOP") and use materials and equipment specifically selected for PFAS sampling and analysis.

Furthermore, the concentrations currently under consideration by USEPA as concentrations of concern for PFAS are extremely low. PFAS compounds are widespread in our environment and the presence of PFAS compounds in the PWS or WWTP materials is a sensitive matter. Therefore, we recommend that these evaluation events include duplicate and field blank samples to provide quality assurance data, and help validate the results obtained.

**POSSIBLE FOLLOW-UP OPTIONS**

Following evaluation of the results of these two initial sampling and analysis events, we recommend discussing the implications of these results with the City of Nevada to consider appropriate options for next steps in your ongoing management of this issue. The nature of these steps will depend on the amount and types of PFAS observed during this initial phase. The following are a few possible options that may be considered. Further evaluation of appropriate options will be considered once the data are in hand.

***Non-Detect or Low-Level Concentrations***

If the concentrations of PFAS are below detectable limits or are significantly below the proposed regulatory and health-based levels, the City of Nevada may want to consider a periodic monitoring program. This will provide assurance that levels continue to be within acceptable ranges. Periodic monitoring will also allow the City to observe trends and respond proactively to changes in PFAS conditions.

***Higher Concentrations***

If the concentrations of PFAS are near or above proposed regulatory and health-based levels, the City of Nevada may want to consider further investigation of the nature and concentrations of PFAS within the PWS and WWTP systems in more detail. It may also be appropriate to investigate further the possible sources of PFAS observed in these systems. If such an investigation is pursued, the City of Nevada may consider a program to cooperatively involve commercial and industrial users in this effort. We suggest that such a cooperative approach will provide better information, timelier, and with less direct cost to the City of Nevada.

We will work closely with the City of Nevada to evaluate these and other appropriate options, considering the City of Nevada's various goals and objectives.

**BUDGET AND SCHEDULE**

EWI is prepared to provide service to the City of Nevada, including mobilizing and preparing for the initial sampling described above, consultation, and other requested services, following receipt of written notification to proceed. We will work closely with the City of Nevada to plan and coordinate sampling

**Proposal for PFAS Sampling & Management Program  
City of Nevada, Missouri**

**August 10, 2023**

events, meetings, consultation, and other services to accommodate your schedule and objectives, to the extent practicable. We propose to provide the services for this program on a time-and-materials basis.

Based on our recommendations and our understanding, described herein, we estimate that the two initial PFAS evaluation sampling and analysis events, described above, will cost approximately \$14,500 per event. Please note that approximately 55% of this cost is for the laboratory analyses. As discussed above, we suggest that a formal written sampling plan is not necessary for the first phase of PFAS evaluation. If the City of Nevada prefers that a written sampling and analysis plan be prepared, we will confer with you regarding the scale and nature of the plan desired and provide an estimate of the cost for such a plan.

\$29,00

Additional services, including consultation, meetings, response to requests or inquiries, and all other services requested by the City of Nevada, will be provided on a time-and-materials basis. EWI will work closely with you and the City of Nevada to monitor the costs under this program. As additional information becomes available, we will be better equipped to predict the costs for the path(s) that are determined to be appropriate, in consideration of the results of this initial evaluation and the City of Nevada's objectives and preferences.

This work will be performed according to EWI's standard terms and conditions, available here: <https://www.environmentalworks.com/terms-and-conditions/>. To formally authorize performance of this work, please sign below and return this signed document to me.

**SUMMARY**

We greatly appreciate the opportunity to support you and the City of Nevada in your evaluation of this issue and to develop a reasonable and effective plan for long-term management of this evolving and sensitive class of chemicals. If you have any questions or would like to discuss any aspects of these recommendations or our proposed scope of work, please do not hesitate to contact me at 41.225.8040 or by email at [kcassil@environmentalworks.com](mailto:kcassil@environmentalworks.com).

Sincerely,  
**ENVIRONMENTAL WORKS, INC.**



**J. Kevin Cassil**  
Principal Scientist  
Strategic Services Manager

cc: Mr. Mark Mitchell, City Manager, City of Nevada  
Mr. Andy Horn, Environmental Works, Inc.

**ACCEPTANCE AND AUTHORIZATION TO PROCEED:**

Organization: \_\_\_\_\_

Client Rep: \_\_\_\_\_

Client Title: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

<sup>1</sup> A group of per-and polyfluoroalkyl chemicals associated with manufacture and use of fluoropolymer products. (PFAS is pronounced "P-fass.")

<sup>2</sup> All analytical methods refer to USEPA analytical methods. These methods are suggested based on the current recommendations and requirements of the USEPA for the matrices included in this sampling and analysis program.

<sup>3</sup> The USEPA in partnership with the Department of Defense's (DoD) Strategic Environmental Research and Development Program, is developing Method 1633 "to test for 40 PFAS compounds in wastewater, surface water, groundwater, soil, biosolids, sediment, landfill leachate, and fish tissue. ... The Office of Water encourages laboratories, regulatory authorities, and other interested parties to review and use the draft methods, with the understanding that it is subject to revision."

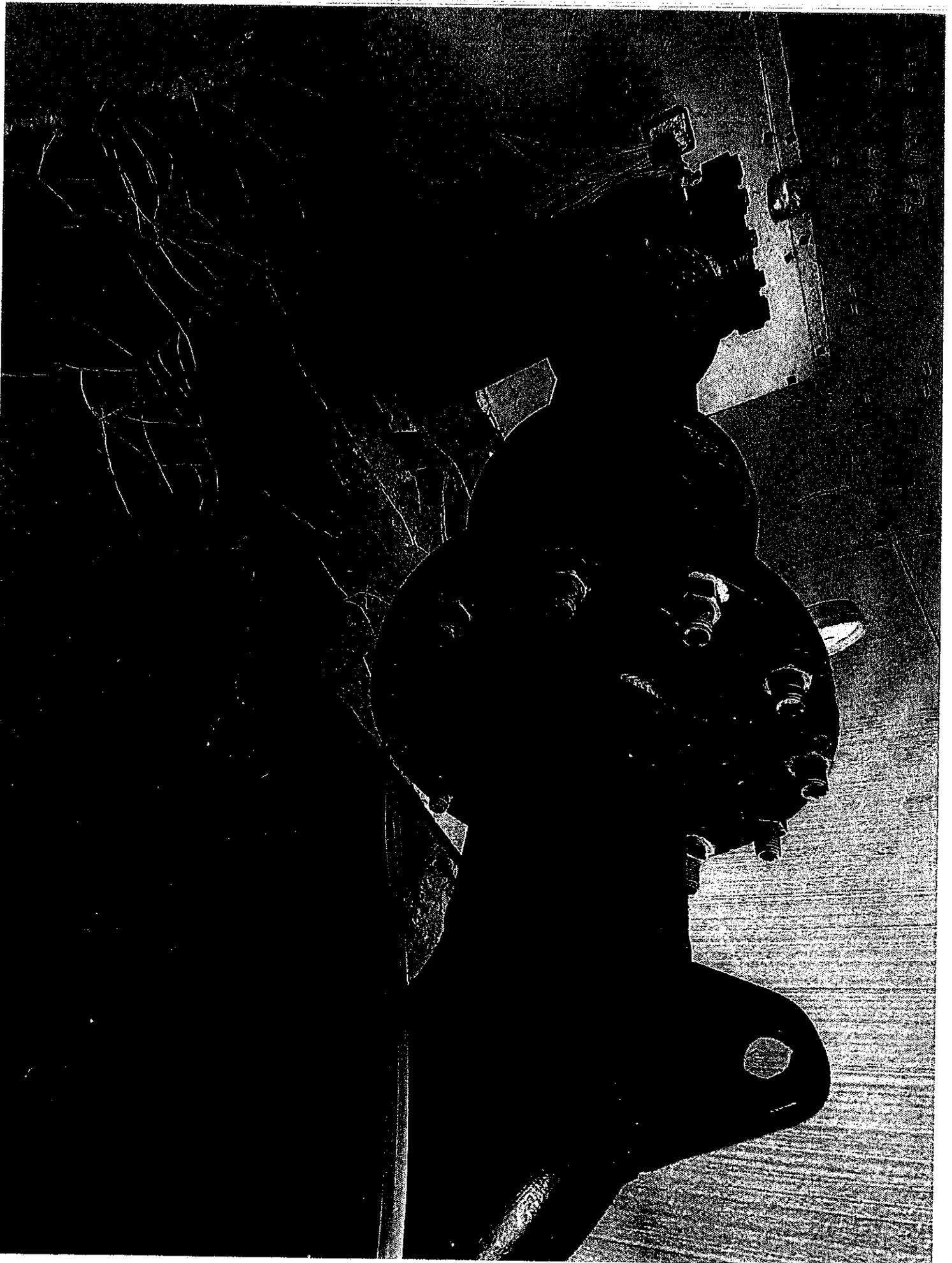
<https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas>

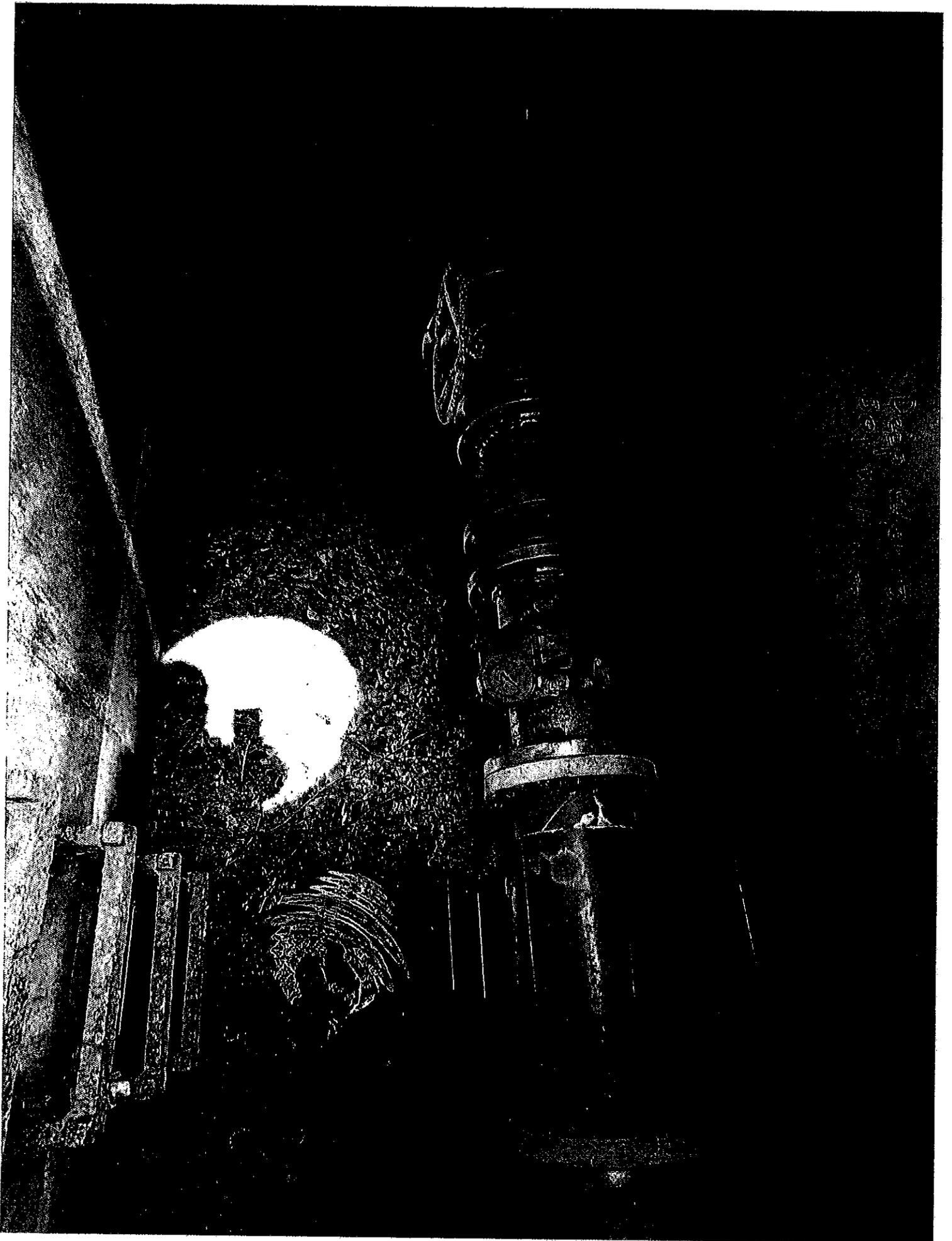
<sup>4</sup> Reverse Osmosis – The PWS system uses an RO system, which passes supply water through a membrane, resulting in two streams: "Permeate" –treated water that has passed through the membrane, and "Concentrate" –the water that has not passed through the membrane and contains the majority of the constituents that were in the supply water, concentrated in this residual fraction.

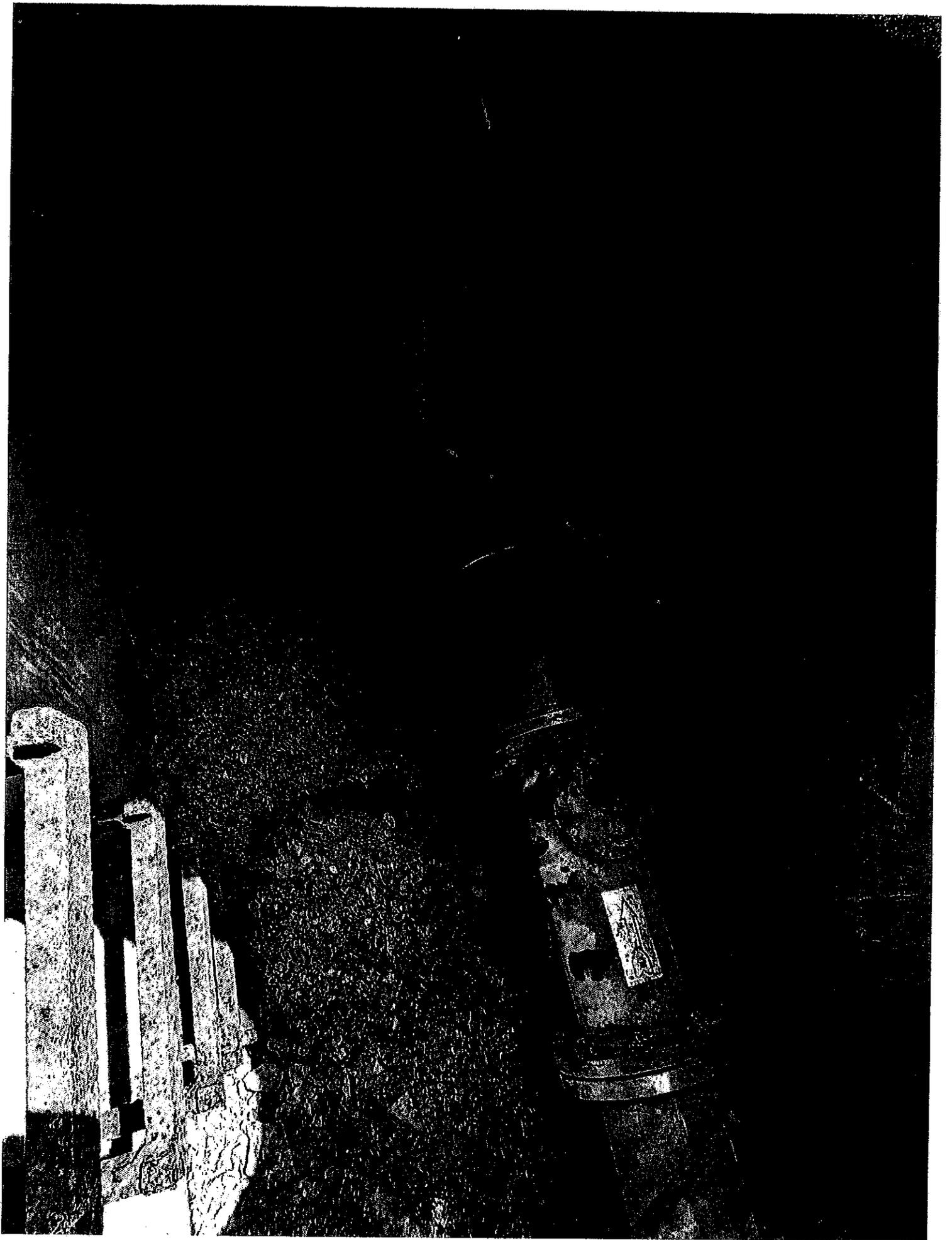
<sup>5</sup> USEPA Methods 533 and 537.1 are designed for the evaluation of PFAS in drinking water. "Both Method 537.1, Rev 2.0 and Method 533 are approved to monitor PFAS during Unregulated Contaminant Monitoring Rule 5 (UCMR 5, 2023-2025)." Since neither method detects and quantifies each of the target PFAS compounds, "using both methods, a total of 29 unique PFAS can be effectively measured in drinking water." <https://www.epa.gov/pfas/epa-pfas-drinking-water-laboratory-methods> and [https://www.epa.gov/sites/default/files/2019-12/documents/table\\_of\\_pfas\\_methods\\_533\\_and\\_537.1.pdf](https://www.epa.gov/sites/default/files/2019-12/documents/table_of_pfas_methods_533_and_537.1.pdf)

Dep. Wash. St.  
1913 W. H. H. H.









<b>Client</b>	City of Nevada, Missouri
<b>Project Location</b>	Nevada, Missouri
<b>Proposal Date</b>	1/8/2024

**Cost Estimates for KimHEC to Provide PFAS Sampling Services - Two (2) Options**

Task Item	Scope Item	Scope Component	Description	Date	Deliverable	Est. Price
Task 1	KimHEC PFAS Sample Training	PFAS	KimHEC to train Nevada staff to conduct PFAS sampling. Assume one site visit to conduct training, a mix of classroom style instruction and field training. KimHEC to coordinate with contract laboratory initially, then Nevada will take over laboratory coordination.	TBD	PFAS sampling training presentation, PFAS sampling fact sheet	\$8,918
Task 2	KimHEC PFAS sampling	PFAS	KimHEC to conduct PFAS sampling, assuming quarterly sampling events and 8 hours to conduct each sampling event. Sampling events include sample collection and contract laboratory coordination.	TBD	PFAS sampling events, documentation, PFAS results	\$17,774

Client	Avg Mo. Invoice	\$0.00
Project Location		
Proposal Date		

Hourly Rate

Task/Item	\$350 SMB	\$225 Principal	\$200 Director	\$175 Engr/Sr Scr	\$135 Scr/Field Tech
Task 1			4	30	
Task 2				36	

Client  
 Project Location  
 Proposal Date

(Mileage)

	\$90	\$500	\$0.67	\$175	\$150	
Task/Item	Admin/Intern	Mtgs/EA	Miles	Est. Travel Time	Hotel	Total Fee
Task 1		1	532	10.64	1	\$8,918.44
Task 2		4	2128	42.56	4	\$17,773.76