Memorandum

To: Papio-Missouri River Natural Resources District Programs Projects and Operations Subcommittee

From: Paul W. Woodward, PE, Groundwater Management Engineer

Date: February 7, 2020

Re: Agreement with Aqua Geo Frameworks for Airborne Electromagnetic Surveys

The District has been a partner of the Eastern Nebraska Water Resources Assessment (ENWRA) project for 13 years. During this time, ENWRA projects have provided valuable insight into the complex geology found in Eastern Nebraska and our District. Airborne Electromagnetic Survey (AEM) flights completed in the spring of 2015 included several cross sections flown in western portions of our NRD, shown as red lines in Figure 1. In 2016, the District along with support from ENWRA and a Water Sustainability Fund (WSF) grant completed a detailed AEM survey in Sarpy County, shown as a grey shaded area in Figure 1. In 2018, the P-MRNRD again participated with ENWRA in a large WSF funded AEM survey that collected a 3-mile framework grid in southern Washington County and northern and western Douglas County as well as block flight lines just west of Tekamah, all shown as blue lines in Figure 1. All total, ENRWA and the PMRNRD have collected over 2,500 miles of AEM survey for a total cost of roughly \$1,400,000. Of this total, the PMRNRD has paid approximately \$270,000 (~19%).

The P-MRNRD submitted a WSF grant in 2019 for a total project cost of \$700,000 to complete an estimated 870 miles of detailed AEM survey across southern Washington and western Douglas Counties, see Figure 2. The purpose of this block survey is to provide a detailed 3D representation of the Platte and Elkhorn River alluvium and its potential connection to sand and gravel aquifers below the Arlington area. The P-MRNRD has received notice of approval of the WSF grant in the amount of \$420,000 (60% cost-share).

As with past AEM flights, the District is proposing to work directly with James Cannia, a registered geologist with Aqua Geo Frameworks (AGF), to complete the data collection and analysis. Mr. Cannia provided the initial airborne flight plan for this 2020 project. It is recommended that the District's consultant selection process be waived in this instance due to AGF's past experience performing AEM surveys.

Additionally, District staff requested that AGF provide a survey plan and potential cost to include a 3-mile framework grid across the remaining portions of the four northern counties in our District. The purpose and need for this additional geological data have arisen at this time for the following reasons:

- The northern four counties of the Papio-Missouri River NRD are without AEM data as shown on the most recent ENWRA Airborne Survey Map, see Figure 3. This is inconsistent with surrounding NRDs and now presents an issue as AEM data is being used by the Nebraska DNR (NDNR) and other NRDs to produce better defined and more accurate groundwater models.
- NDNR's current regional Lower Missouri River Tributaries Model, which does not
 incorporate AEM data, has produced preliminary results that seem inaccurate or
 inconsistent with known geologic information in the region. See preliminary hydraulically
 connected areas to the Platte and Elkhorn River from NDNR as Figure 4 and a UNL
 CSD geologic cross section as Figure 5. Figure 5 shows that most tributaries along the
 western border of the P-MRNRD are embedded in glacial till and would not be expected

to be hydrologically connected to the Platte or Elkhorn River. So, in this case, new AEM data would be used to document that creeks and streams in the northern portion of the NRD are not hydrologically connected to an aquifer that effects flow in the Platte or Elkhorn River.

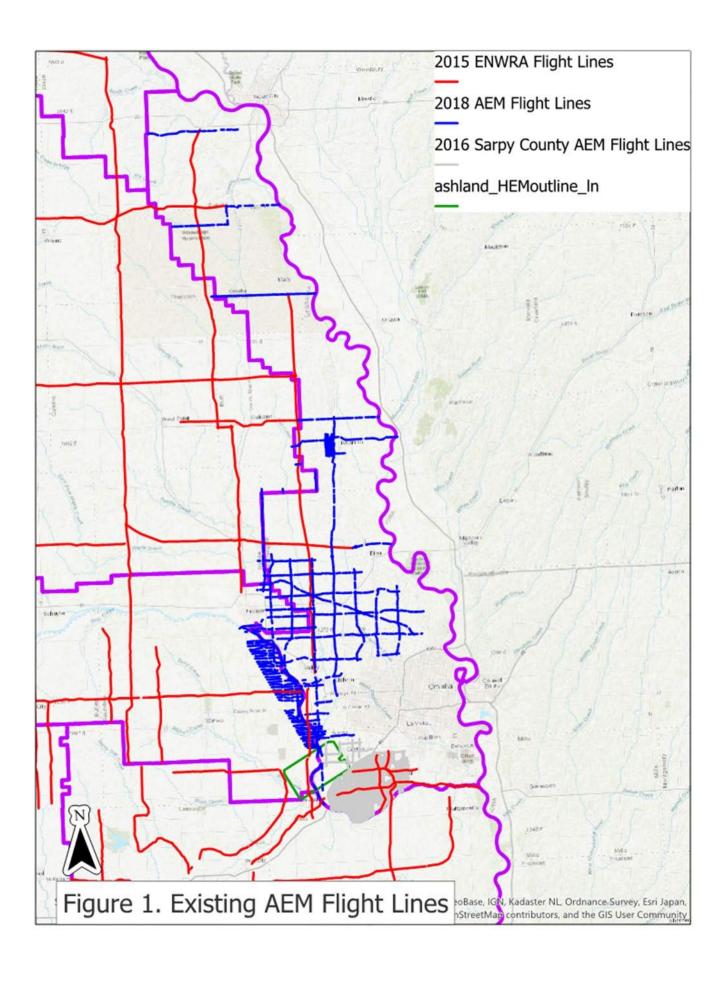
- The Lower Elkhorn NRD (LENRD) is in the process of preparing a groundwater model for their entire NRD that incorporates their existing AEM data. NDNR is participating with LENRD on this model and has accepted their technical approach for improving the model and its accuracy using the AEM data. Figure 6 shows a detailed map of the LENRD model area and depicts their need to have continued AEM data within the P-MRNRD in order to accurately complete their groundwater model.
- Since the LENRD and NDNR are moving forward with modeling that could include portions of our District, it is most beneficial to requisite consistent AEM data as part of this 2020 project with AGF. Waiting until the next grant cycle would likely result in the P-MRNRD data not being incorporated into the regional groundwater model. This would likely cause our District to have inaccurate hydrologically connected areas that could result in overly conservative water quantity accounting records as part of our Lower Platte River Basin Plan and likely place an undue regulatory burden on overlying landowners. NDNR plans to have modeling ready to analyze the next 5-year increment of the Lower Platte Basin by the end of 2023.
- Collection of this additional AEM data was not included in the PMRNRD's 2019 WSF grant application because it was unclear at that time if NDNR was going to utilize AEM data in the update of their groundwater models.

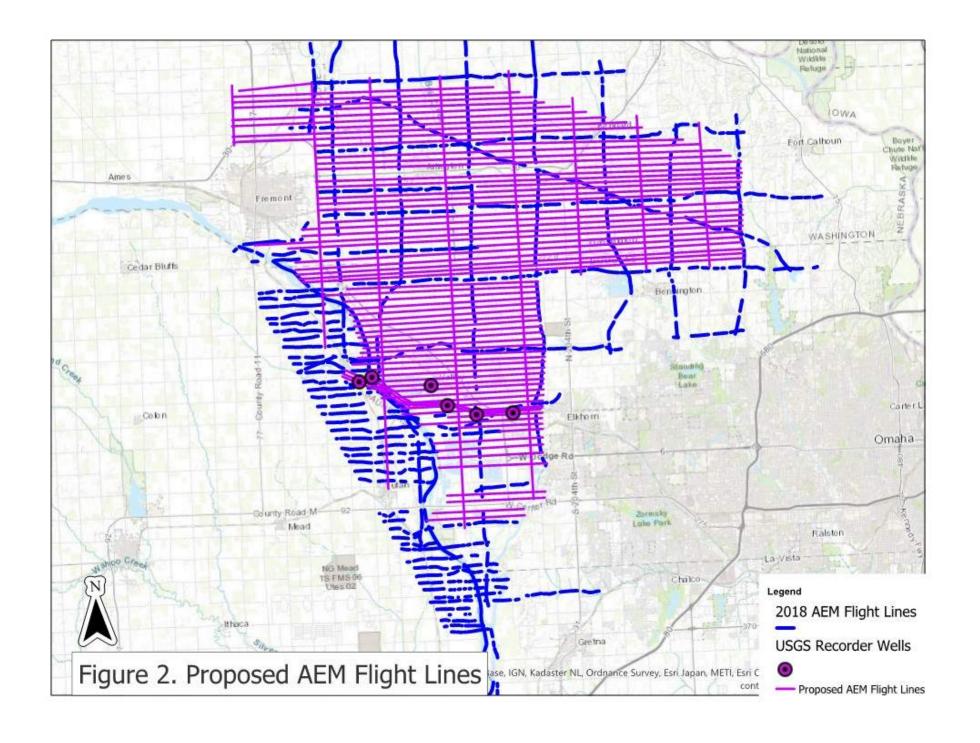
The additional 3-mile framework is estimated to require an additional 780 miles of AEM Survey, see Figure 7. District staff and legal counsel have worked with Mr. Cannia to prepare a professional services agreement (attached) with AGF to complete the aerial surveys, interpret the findings, and produce final deliverables including a report and digital submittals for a total cost of \$1,100,000. This cost is to be paid as follows:

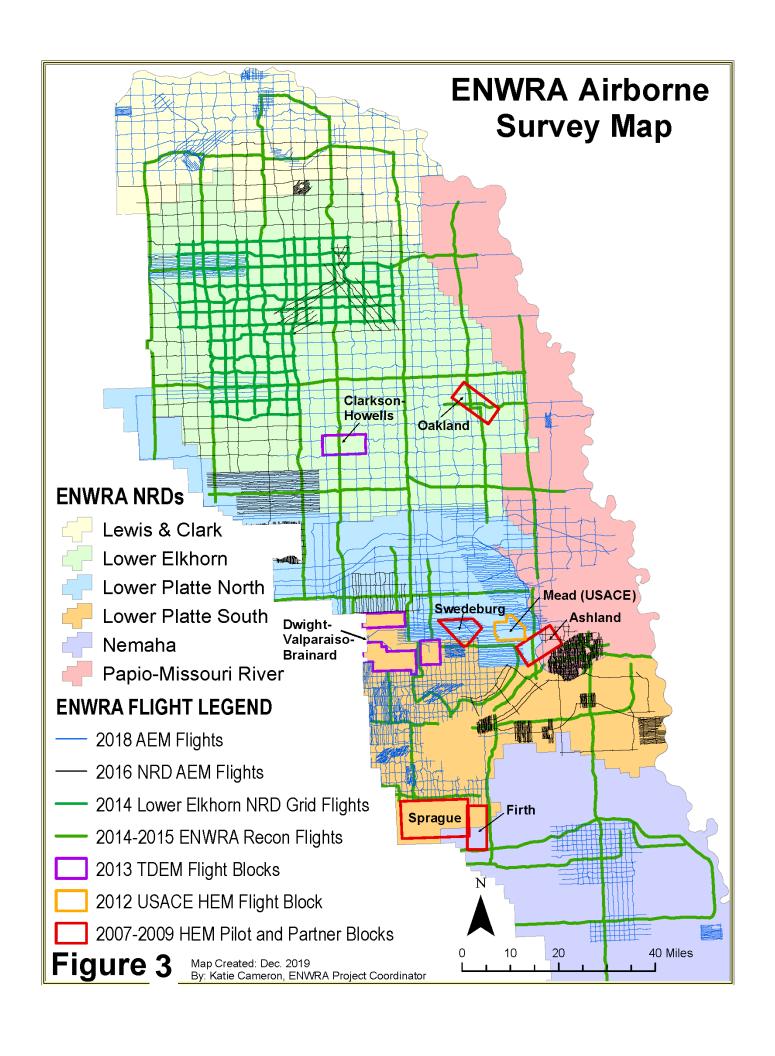
	Total	Total Project (1,650		R WSF			
	miles)	miles)		Reimbursement		NRD Cost	
FY 20	\$	330,000.00	\$	126,000.00	\$	204,000.00	
FY 21	\$	770,000.00	\$	294,000.00	\$	476,000.00	
TOTAL	\$	1,100,000.00	\$	420,000.00	\$	680,000.00	

Flights are expected begin in June based upon the availability of WSF funds and upfront funding is needed to secure the helicopter and equipment. However, the District does not currently have adequate funds budgeted for the WSF grant plus the additional survey. The current ENWRA budget for AEM surveys is \$220,000 in FY 20. Therefore, the Board would need to authorize the ENRWA budget (Account No. 01 05 191 4195) to exceed 110% in order to expend \$330,000 and request \$126,000 of that back from the WSF prior to the end of FY 20. Adequate funding would be proposed in the budget for FY 21.

Staff recommends that the subcommittee recommend to the Board of Directors that the District's procurement procedure Policy 15.2 be waived and the General Manager be authorized to execute a professional services agreement with Aqua Geo Frameworks, LLC in the amount of \$1,100,000; and that Account No. 01 05 191 4195, ENWRA – Contributions/Reimb/Cost Shares, be allowed to exceed 110% of the budgeted amount up to \$330,000.00, all for the 2020 AEM Survey project, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.







Hydrologically Connected Areas Without Outside Zones

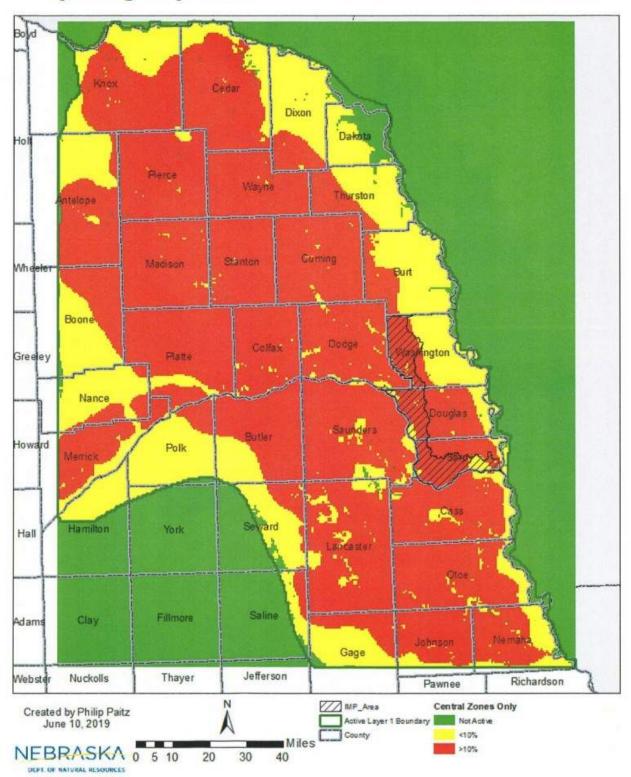


Figure 4

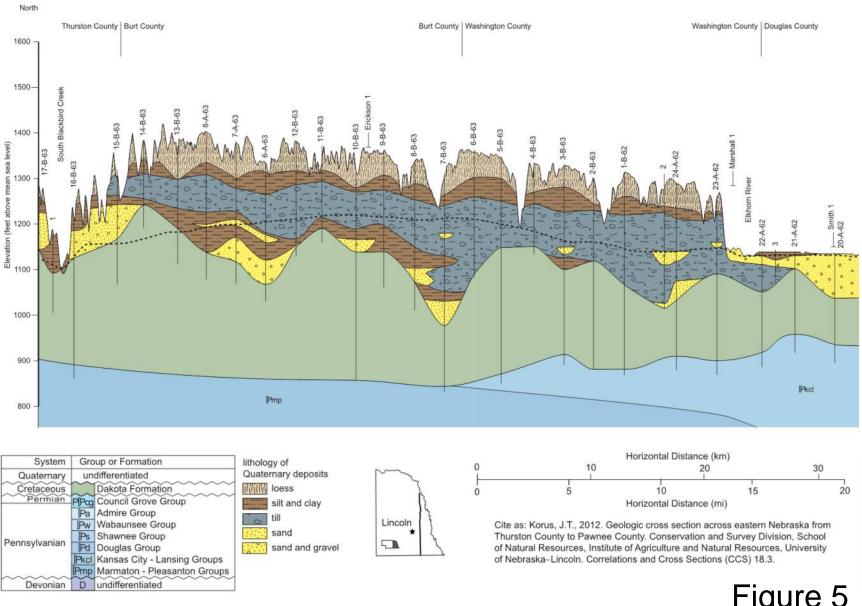


Figure 5

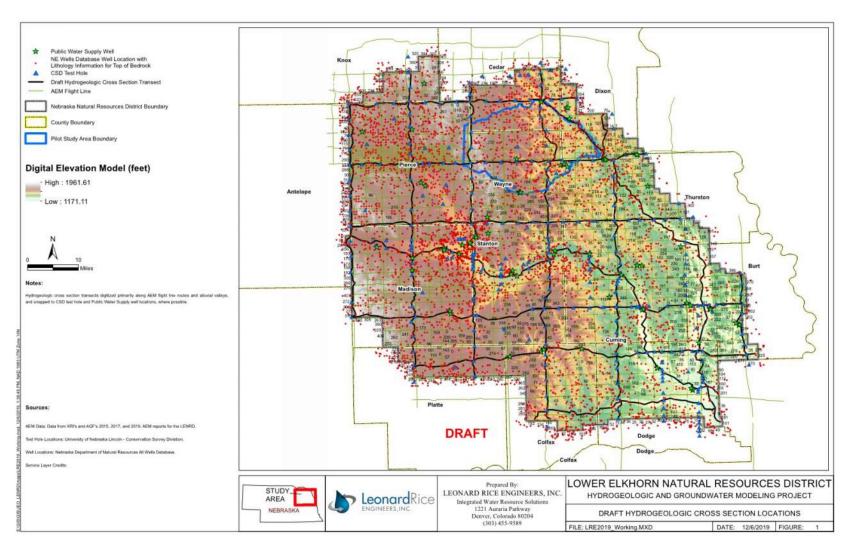
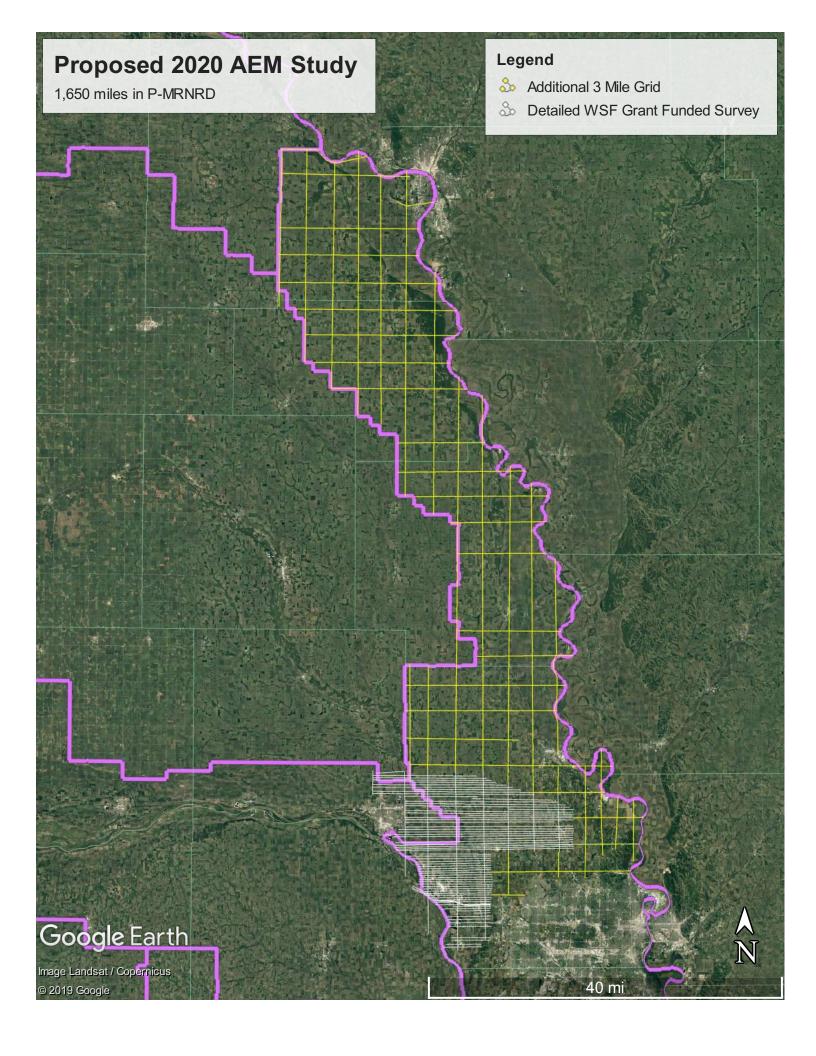


Figure 6



PROFESSIONAL SERVICES AGREEMENT

This Professional Services Agreement (this "Agreement") is made and entered into as of February ______, 2020 by and between the PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT, a political subdivision of the State of Nebraska, having an office at 8901 S.154th St. Omaha, Nebraska, 68138 (hereinafter called "District") and Aqua Geo Frameworks, LLC., a limited liability company of the State of Nebraska, having its principal office located at 130360 County Road D, Mitchell, NE 69357-2508 (hereinafter called "AGF" or the "Contractor"). The District and Contractor are sometimes referred to below as "Parties" and each of them as a "Party."

WITNESSETH:

RECITALS

A. The District desires to obtain a hydrogeologic framework of selected areas of the District. This work will be accomplished through use of Airborne Electromagnetic (AEM) Surveys in conjunction with existing geologic and hydrogeologic information. There will be approximately 1,367 line-miles (2,200 kilometers) of AEM data collected for the project.

B. AGF is a company qualified and experienced in conducting and preparing surveys and Data Reports and agrees to contract with the District to provide the survey and the Data Report as further described below. AGF is a Nebraska Registered company with Nebraska registered Professional Geologists performing this work.

NOW THEREFORE, in consideration of the above recitals and the mutual promises and covenants contained below, the parties agree as follows:

1. SCOPE OF WORK

- 1.1 An AEM survey will be flown over selected sites within the District. These flights will be provided as preliminary AEM data and as a final product in a data report. The AEM survey will be flown at a spacing appropriate for each site in north-south and east-west directions. Approximately 867 miles of AEM survey will be flown for the District.
- 1.2 Commencing upon signing of the contract between the parties, work shall begin on the project.
- 1.3 The Contractor shall begin project planning upon signing of the project between the parties. This work includes flight plans, database development, and review of hydrogeologic and geologic work for the area. When such information is within the District's control, the District shall assist in providing information such as power line maps, test hole databases, and related aquifer characteristic studies in digital form to the Contractor.

- 1.4 The Contractor shall acquire an AEM survey flown over selected sites within the District to provide the hydrogeological framework, commencing on approximately July 1, 2020 through approximately September 1, 2020. Status reports of the data acquisition will be provided to the Contract Representative of the District daily, including the areas flown, production rates, and flight plan for the following day.
- 1.5 The Contractor shall process and perform quality assurance/quality control (QA/QC) on all of the data collected from the AEM system.
- 1.6 The Contractor shall numerically invert the AEM data and derive 2D and 3D electrical resistivity models of the surveyed area. These inverted georeferenced data will be delivered to the District.
- 1.7 The Contractor shall provide a hydrogeologic framework report that will include maps of aquifer(s) materials, map of aquifer(s) materials relationship to current test holes and production groundwater wells, and a map of estimated potential recharge areas in the surveyed area. The report will also include all data and metadata files. The report will be delivered in PDF digital format.

2. SCHEDULE.

- 2.1 The project planning, AEM data acquisition, QA/QC, and preliminary inversion work shall be completed by approximately September 8, 2020. A letter report on the status of the project shall be given at that time with a presentation at a meeting of the District. Selection of the AEM system and the subcontractor to do the data acquisition will be done by AGF.
- 2.2 Beginning approximately October 1, 2020, the Contractor will begin development of the hydrogeologic framework. At times during its development, interaction with the District staff will be needed to keep both parties apprised of progress. After completion of the framework, a data publication will be produced and reported out to the District. The final report will be delivered and then presented at a meeting with the District on or about January 11, 2021.
- 2.3 Should any unforeseen delays occur due to weather, the completion date for the project schedule above may be delayed by the number of days of the unforeseen weather delay. Any such request for a change will be delivered to the District by email and written notice.

3. COMPENSATION.

- 3.1 For the services satisfactorily rendered as set forth in this Agreement, the Contractor will be paid as described below:
 - 3.1.1 The District shall pay a fixed fee of \$1,100,000.00 to be paid as follows:

- 3.1.2 Due within thirty (30) days of signing this Agreement, (30%) \$330,000.00;
- 3.1.3 Due upon completion of the data acquisition by AGF, (50%) \$550,000.00
- 3.1.4 Due upon delivery of completed report of Part 1.7 of section 1 of this Agreement on approximately January 11, 2021 (20%) \$220,000.00.
- 3.1.5 All costs and expenses of whatever kind incurred by AGF including the aircraft are included in the fixed fee and will be paid by AGF.

Total = \$1,100,000.00

3.2 In no event shall the work described here in exceed \$1,100,000.00, unless authorized in writing by the District.

4. TERM AND TERMINATION

- 4.1 This Agreement is effective as of February _____, 2020 and shall continue until the Project is completed, no later than January 11, 2021, unless terminated earlier as provided for in the Agreement, or extended by mutual agreement of the Parties.
- 4.2 If AGF defaults in the performance of its material obligations, the District may, without prejudice to any other remedy it may have, give AGF written notice of its intent to terminate this Agreement, unless AGF remedies the default within ten (10) days after receiving such notice. If AGF has not remedied said default with such time, District may, upon written notice to AGF, terminate this Agreement. In the event the District terminates this Agreement due to AGF's default or breach, the District shall not be obligated to make any further payments to AGF, and AGF shall immediately return any and all monies it has received from the District under this Agreement.
- 4.3 The District may, at its option, terminate this Agreement for reasons other than AGF's default at any time prior to the completion of the Project upon giving AGF thirty (30) days written notice. If the District elects to terminate this Agreement prior to the completion of the Project, then the District shall pay to AGF all costs actually and reasonably incurred by AGF, or for which AGF has become obligated to incur, prior to the date of termination. The District shall not be obligated to make any payments outlined in this section following the date of the notice of termination. Upon termination by the District without cause, if the District has paid AGF monies in excess of the amount AGF has actually and reasonably incurred or has become obligated to incur, AGF shall immediately refund to the District

any such excess.

5. INDEPENDENT CONTRACTOR

It is understood and agreed that AGF is, and shall be deemed and treated as, an independent contractor while engaged in the performance of professional services to the District and none of its employees, agents or subcontractors shall be employees or agents of the District for any purpose. AGF maintains the absolute right to supervise, manage and exclusively control the operation and safety of its personnel, facilities and other equipment and property and the manner and means of performing the rights and obligations under this Agreement. The District shall have no right of direction or control of AGF or its employees or agents, being only interested in the final results of the Project.

6. QUALIFICATION OF CONTRACTOR

The Contractor warrants and represents that it and all employees, agents, and subcontractors are qualified to perform the services described in this Agreement and in compliance with all applicable state and federal laws, policies, practices and procedures.

7. SUBCONTRACTORS

- 7.1 Contractor shall not otherwise transfer any rights, duties and/or obligations under this Agreement without prior written consent of the District. The duties and obligations of the Contractor shall not terminate or transfer upon the use of any subcontractor. The District acknowledges and agrees that to fully perform under this Agreement, the Contractor may use subcontractors for certain services. The Contractor will oversee all subcontractors' efforts and the District will not be liable or responsible for any actions of any subcontractor.
- 7.2 This Agreement is between the Contractor and the District and nothing herein is intended to create any third-party benefit to subcontractors. The Contractor shall ensure that all financial obligations are met between the Contractor and subcontractor and shall ensure there are no liens upon the District or its property arising from subcontractor's actions or deliverables. Privity of contract only exists between the District and the Contractor. Separate privity of contract exists between the Contractor and subcontractor. These are mutually exclusive relationships; accordingly, there is no privity of contract between the District and the subcontractors.

8. GOVERNING LAW

This Agreement shall be governed, construed and interpreted by the laws of the State of Nebraska, excluding any choice of law rules that would otherwise require the application of laws of any other jurisdiction. AGF irrevocably submits to the

jurisdiction and venue of the courts in Sarpy County, Nebraska or U.S. District Court of Nebraska and waives any objection that it may have to either the jurisdiction, venue, or inconvenient forum of such courts.

9. INDEMNITY

- 9.1 To the fullest extent permitted by law, each Party (the "Indemnitor") shall indemnify, defend, and hold harmless the other Party and its board members, officials, directors, officers, members, managers, agents, and employees (each an "Indemnified Party") from and against all claims, damages, losses, fines, assessments, and expenses, including, but not limited to, attorneys' fees (collectively, "Losses"), arising out of or resulting from: (a) a breach of this Agreement by the Indemnitor; (b) the unlawful acts of the Indemnitor or the Indemnitor's subcontractors; or (c) the negligent or intentional acts or omissions of the Indemnitor or the Indemnitor's subcontractors, provided that, in no event shall an Indemnitor be required to indemnify, defend, or hold harmless an Indemnified Party for Losses to the extent such Losses are caused by the negligent or intentional acts or omissions of the Indemnified Party.
- 9.2 If any claim covered by this indemnity is asserted by a third party, the Indemnified Party shall promptly give the Indemnitor notice of the claim and give the Indemnitor an opportunity to defend or settle the claim with counsel of its choice and at its expense, and the Indemnified Party shall extend its full cooperation in connection with the defense, subject to reimbursement for actual out-of-pocket expenses incurred by the Indemnified Party as the result of a request by the Indemnitor. If the Indemnitor fails to defend a claim within a reasonable time, the Indemnified Party shall be entitled to assume the defense and the Indemnitor shall be bound by the results obtained by the Indemnified Party with respect to the claim, and the Indemnitor shall be liable to the Indemnified Party for its expenses incurred in the defense, including, without limitation, reasonable attorney's fees and any settlement payments.

10. INSURANCE

At all times during the term of this Agreement, Contractor shall carry and maintain at its own expense, work insurance protection of the kinds and the minimum amounts set forth below:

- 10.1 Commercial General Liability (CGL) Insurance. Such insurance shall cover all operations in which the Survey and Data Report may be performed by AGF hereunder and shall include the following:
 - 10.1.1 Limits of liability: not less than \$1,000,000 for death or injury to any one person, \$2,000,000 in the aggregate for all persons injured or killed as the result of any one accident, and \$1,000,000 for loss of or damage to property resulting from any one

accident, for the following;

- 10.1.2 Contractual liability coverage for AGF's obligations hereunder;
- 10.1.3 Products hazard coverage;
- 10.1.4 Completed Operations Coverage;
- 10.2. Workers Compensation pursuant to the statutory requirements.
- 10.3 Professional Liability insurance to cover malpractice of AGF employees, agents or subcontractors in connection with the performance of this Agreement in an amount not less than \$2,000,000;
- 10.4 Aircraft Liability insurance covering all owned, non-owned and hired helicopters and other aircraft used by the Contractor, or any of the Contractor's subcontractors, for purposes of this Contract.
- 10.5 With respect to all such policies of insurance, AGF shall furnish evidence upon request that AGF's insurers waive all rights of subrogation against the District, AGF shall also furnish evidence upon request that the District is listed as an additional insured in such policies, but all rights of the District hereunder, as additional insured or by waiver of subrogation, shall be limited to the extent of AGF's valid and enforceable indemnity obligations in this Agreement.
- 10.6 Each of the forgoing policies of insurance shall include an extra-territorial endorsement to explicitly provide that the coverage extends to the areas where the Survey or services are performed hereunder.
- 10.7 Upon execution of this Agreement, AGF shall furnish the District with certificates of insurance certifying that the insurance required under this Paragraph is in full force and effect. Each certificate shall contain a provision stating that the insurer agrees to give the District thirty (30) days prior written notice in the event of cancellation or material change in the insurance.
- 10.8 The Parties specifically recognize that certain federal or state statutory or case law may obligate or require modification to Paragraph 10 INSURANCE and Paragraph 9 INDEMNITY and that future changes in the law and interpretations of the law during the term of this Agreement may affect the validity or scope of those Paragraphs. Therefore, the Parties specifically agree that, if any provision of Paragraphs 10 or 9 is determined to be unenforceable or in contravention of any applicable law, such provision shall be deemed modified to the minimum extent required to bring such provision into compliance with said applicable law.
- 10.9 AGF shall require any subcontractor to carry and maintain, during the term of this Agreement, or any extension thereof, the same insurance as AGF is

required to carry and maintain for any obligation which such subcontractor is required to perform under any subcontract.

11. FORCE MAJEURE

Any delay or failure in the performance by either Party here under shall be excused if and to the extent caused by the occurrence of a Force Majeure. For purposes of this Agreement, Force Majeure shall mean a cause or event that is not reasonably foreseeable or otherwise caused by or under the control of the Party claiming Force Majeure, including acts of God, fires, floods, explosions, riots, wars, hurricane, sabotage terrorism, vandalism, accident, restraint of government, governmental acts, injunctions, labor strikes that prevent Contractor from performing, and other like events that are beyond the reasonable anticipation and control of the Party affected thereby, despite such Party's reasonable efforts to prevent, avoid, delay, or mitigate the effect of such acts, events or occurrences, and which events or the effects thereof are not attributable to a Party's failure to perform its obligations under this Contract.

12. DISPUTE RESOLUTION

Notwithstanding the provisions of Paragraph 4.2 above, before a Party may bring suit in any court concerning any dispute arising out of or in connection with this Agreement, including any question regarding its existence, validity or termination, such Party must first seek in good faith to resolve the dispute through negotiation or other form of nonbinding alternate dispute resolution mutually acceptable to the Parties.

13. ACCESS TO RECORDS

The Contractor shall be granted reasonable access to the District's records as may be necessary to complete the scope of work.

14. CONFIDENTIALITY

The Parties acknowledge and understand that the District is a government entity subject to the Nebraska Public Records Statutes.

15. CONFLICT OF INTEREST

The Contractor warrants that he/she has no interest presently and shall not acquire any interest, direct or indirect, which would conflict in any manner with the performance of the services required under this Agreement.

16. SEVERABILITY OF TERMS

Should any provision of this Agreement be deemed invalid or unenforceable, that provision shall be deemed to be deleted from this Agreement and all remaining provisions shall remain in full force and effect.

17. DISTRICT REPRESENTATIVES

- 17.1 The District designates: Paul Woodward, Phone: (402) 315-1772, Email address: pwoodward@papionrd.org as its representative, to whom AGF's representative may deliver reports and other information and from whom AGF representative will receive instructions, provided such instructions are in accordance with the terms of this Agreement. AGF shall be entitled to rely on the apparent authority of such District representative on the District's behalf to inspect such operations and give instructions to AGF. Such instructions shall be related to the project.
- 17.2 The District's representative may be present during the field phase to monitor the Survey, but shall not have any authority to interfere with the actual logistical aspects of the acquisition or analysis of the data.
- 17.3 All expenses related to the presence of any District Representative shall be paid by the District.

18. LAWS, RULES, AND LICENCES

AGF shall comply with all provisions of applicable law including, federal, state, and municipal laws, ordinances, rules and regulations relating to the performance of the Project. AGF warrants that it is duly licensed and authorized to perform the Project covered under this Agreement, if required by State, Federal or local laws, or that it will be so licensed and authorized prior to commencement thereof.

19. ECOLOGY AND SANITATION

During the course of the Survey, AGF shall keep the site of any Survey and camp areas free from accumulations of waste materials, rubbish or garbage. Upon completion of the Survey, AGF shall remove all tools, surplus materials, rubbish and garbage belonging to AGF, and leave the working area and campsite in a condition comparable to the condition of the site at the start of the Survey.

20. ENFORCEMENT OF DISCIPLINE

AGF shall at all times enforce discipline and maintain good order among its employees and subcontractors, and shall not retain on the job any person not skilled in the task assigned to that person. AGF shall forthwith remove from the Survey any employee of AGF or a subcontractor who is unacceptable, for good cause, to the District.

21. NOTICE

All notices, demands and consents required or permitted to be given under this HB: 4819-1035-7427.1

Agreement shall be in writing and may be delivered personally, transmitted by facsimile or e-mail, or may be forwarded by first class prepaid certified mail, return receipt requested, to the addresses set forth below. Any notice shall be deemed given and received on the next business day after personal delivery or facsimile transmission or email, or if mailed, on the expiration of three (3) days after it is post marked, addressed as follows:

PAPIO MISSOURI RIVER NATURAL RESOURCES DISTRICT 8901 S. 154th St. Omaha, NE 68138

Attention: Mr. John Winkler

General Manager

Phone: (402) 926-8500

AQUA GEO FRAMEWORKS, LLC 130360 County Road D Mitchell, NE 69357-2508

Attention: Mr. James C. Cannia

Member LLC - Principal Geologist Phone: 308-641-2635

Email address: <u>jcannia@aquageoframeworks.com</u>

22. WAIVER

The rights herein given to either Party may be exercised from time to time, singularly or in combination, and the waiver of one or more of such rights shall not be deemed to be a waiver of such right in the future or of any one or more of the other rights that the exercising Party may have. No waiver of any breach of a term, provision, or condition of this Agreement by one Party shall be deemed to have been made by the other Party unless such waiver is expressed in writing and signed by an authorized representative of such Party and failure of either Party to insist upon the strict performance of any term, provision, or condition of this Agreement or to exercise any option herein given shall not be construed as a waiver or relinquishment in the future of the same or any other term, provision, condition or option.

23. ENTIRE AGREEMENT

This Agreement contains the entire agreement between the Parties and supersedes and replaces any oral or written communication previously made between the Parties relating to the subject matter hereof. This Agreement shall not be amended except by written instrument executed by the duly authorized representatives of both parties.

24. ASSIGNMENT

Neither the Contractor nor the District shall assign, subcontract, pledge, mortgage HB: 4819-1035-7427.1

or otherwise encumber any of its rights hereunder without the prior written consent of the other Party.

25. DISCLAIMER

AGF shall conduct this project using the current standards of the geophysical industry and used in-house quality control standards to produce the geophysical survey and products. The geophysical methods and procedures described in the final report are applicable to the particular project objectives, and these methods have been successfully applied by AGF to investigations and projects of similar size and nature. However, field or subsurface conditions may differ from those anticipated, and the resultant data may not achieve the project objectives. AGF's services are performed consistent with the professional skill and care ordinarily provided by professional geophysicists under the same or similar circumstances. No other warranty or representation, either expressed or implied, is made by AGF in connection with its services unless in writing and signed by an authorized representative of AGF.

IN WITNESS WHEREOF, the Parties to this Agreement have caused it to be executed by their duly authorized representatives as of March 6, 2019

By: James C. Cannia P.G., Member - Principal Geologist
PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT,
By:
John Winkler, General Manager

AQUA GEO FRAMEWORKS, LLC