

Agenda Item: 6 a.-c.

Memorandum

To: Papio-Missouri River Natural Resources District Programs Projects and Operations Subcommittee
From: Paul W. Woodward, PE, Groundwater Management Engineer
Date: May 2, 2016
Re: Contract for Aerial Electromagnetic Survey of Southwestern Sarpy County (Dakota Aquifer) with Aqua Geo Frameworks

The District has been a partner of the Eastern Nebraska Water Resources Assessment (ENWRA) project for 10 years. During this time, ENWRA projects have provided valuable insight into the complex geology found in Eastern Nebraska and our District. The most recent Airborne Electromagnetic Survey (AEM) flights were completed in the spring of this year with a final report and data delivered in September. During this survey, several cross sections were flown in western portions of our NRD as shown in the attached Figure 1-1. Of particular interest is the tic-tac-toe pattern of cross sections in Southwestern Sarpy County aimed at defining the extents of the shallow Dakota aquifer that is mostly used for municipal and domestic (acreages) supply, see attached Figure 1 and example cross section.

This potentially isolated Dakota aquifer has been under increasing demand as a drinking water supply, yet has seen areas of high nitrates during water quality testing, see Figure 2 attached. Many of the existing domestic wells have screens near the bottom of the aquifer since it is fairly shallow (between 100' and 200'), but it is anticipated that nitrate contamination near the upper portion of the aquifer may eventually cause concerns. Also, other than potential mapping that can be done using credible well or test hole logs and the recent AEM cross sections, the physical extent and depth of this aquifer cannot be completely defined. Actually knowing and mapping the extent and volume of this aquifer would provide great management benefits. For example:

- Existing residents can determine where their well falls in relation to the actual depth of the aquifer and may decide to drill their well deeper if problems arise.
- New wells can be constructed in better ways to avoid potential issues.
- Recharge of groundwater from the surface can be better understood and managed.
- Water quantity issues can be mapped within the aquifer.

Working together with ENWRA and other interested NRDs, multiple small project Water Sustainability Fund (WSF) applications were submitted in December to secure funding for AEM surveys. The Natural Resource Commission has approved each of these applications including \$240,000 for the District to complete the proposed survey as shown in Figure 1. Final agreements between NDNR and the District will be needed to award the funding and should be authorized by the Board.

As in past ENWRA flights, each NRD is proposing to work 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 area and produced a cost estimate of \$400,000. District staff recommend that the District's consultant selection process be waived in this instance due to AGF's past experience with performing AEM surveys in Eastern Nebraska.

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 \$400,000. This cost is to be paid as follows: \$120,000 due 30 days after contract approval, \$200,000 due after data acquisition, and \$80,000 due upon final acceptance of the report.

Flights for the various projects can begin as early as 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 a direct budget item for this project and would need to approve the ENRWA budget (Account No. 01 05 191 4195) over 110% to expend the initial \$120,000 and request \$72,000 of that back from the WSF prior to the end of FY 16.

Staff recommends that the subcommittee recommend to the Board of Directors that the General Manager be authorized to execute grant awards for the Water Sustainability Fund in the amount of \$240,000, waive the consultant selection process, execute a professional services agreement with Aqua Geo Frameworks, LLC for in the amount of \$400,000, and that Account No. 01 05 191 4195, ENWRA – Contributions/Reimb/Cost Shares, be allowed to exceed 110% of the budgeted amount for the AEM Survey of the Southwestern Sarpy County Dakota Aquifer Mapping Project, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.

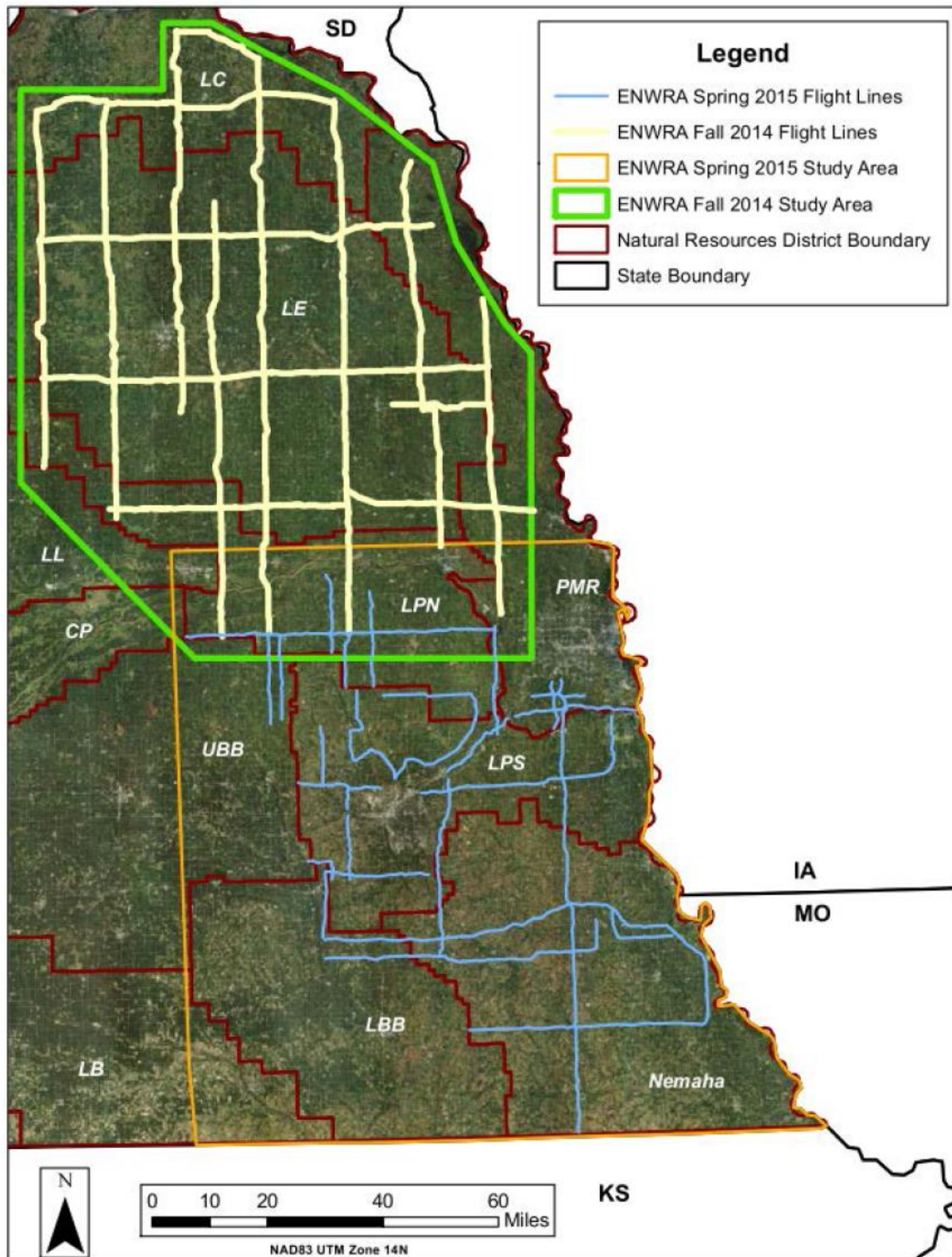
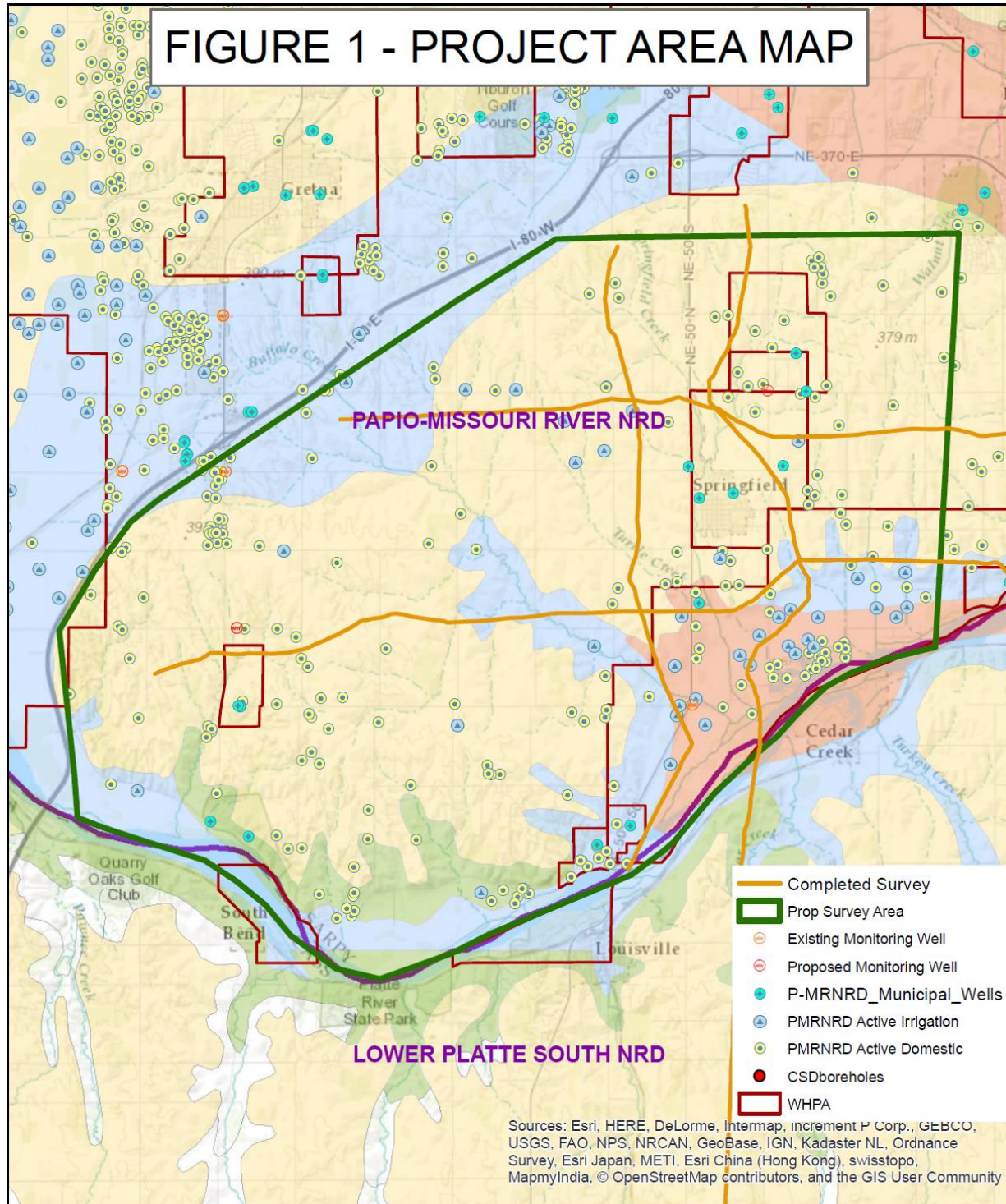
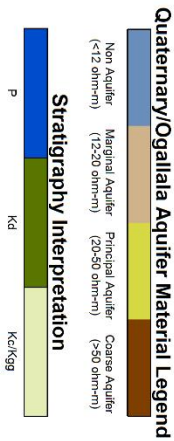
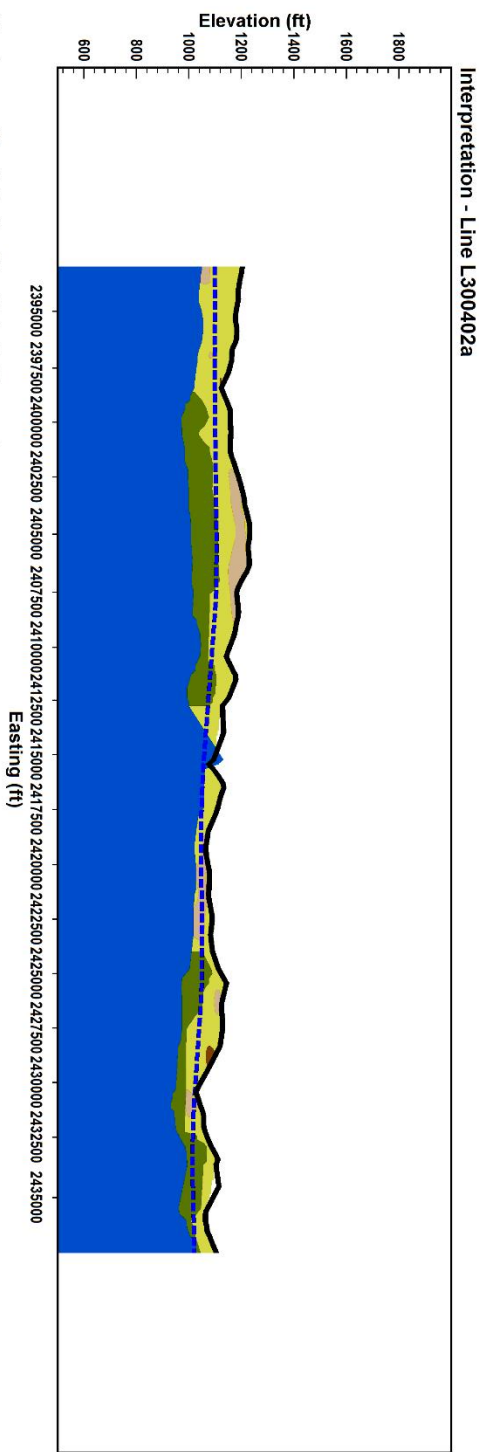
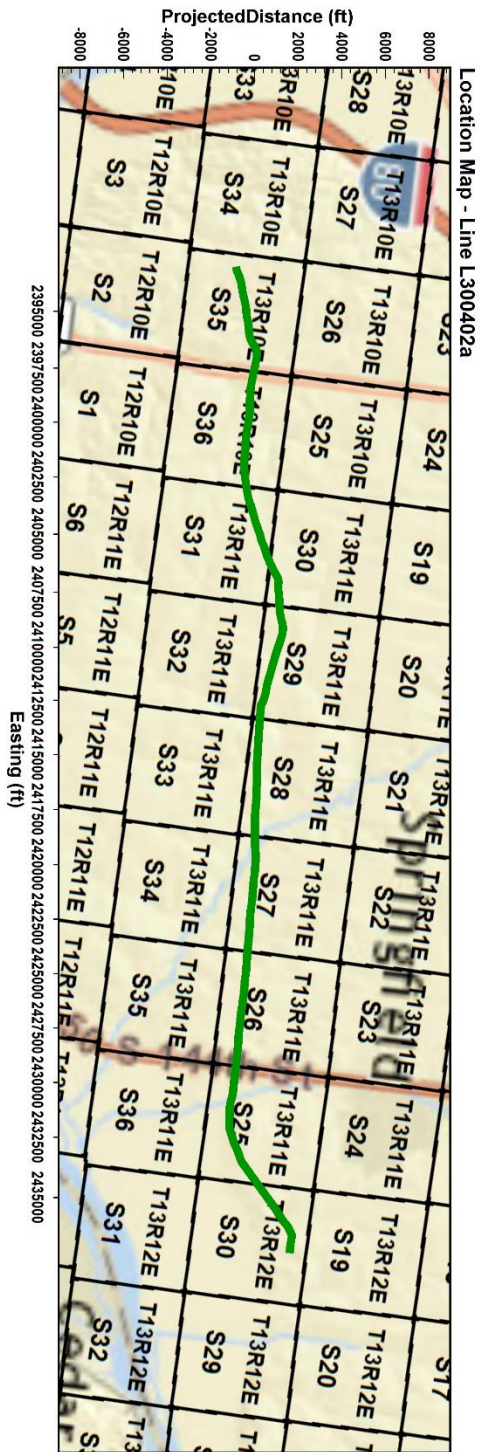


Figure 1-1: Map of the ENWRA project area, with the northern extent of the survey area (Phase I) and flight lines highlighted in green and yellow, respectively. The southern half of the project area (Phase II) is outlined in orange.

FIGURE 1 - PROJECT AREA MAP





Interpreted geologic sections from AEM data and flight line location map provided in conjunction with Google Earth kmz file. Interpreted sections and flight lines have been broken into 10 mile (or shorter) segments. The projected downline distance is equal for the flight line (top image) and the AEM data interpretation (bottom image). The CSD 1995 water table is shown as a dashed blue line on the interpretation image. Additional information regarding the use of these figures and the AEM data may be found in the report titled "Airborne Electromagnetic Geophysical Surveys and Hydrogeologic Framework Development for Selected Sites in the Eastern Nebraska Water Resources Assessment".

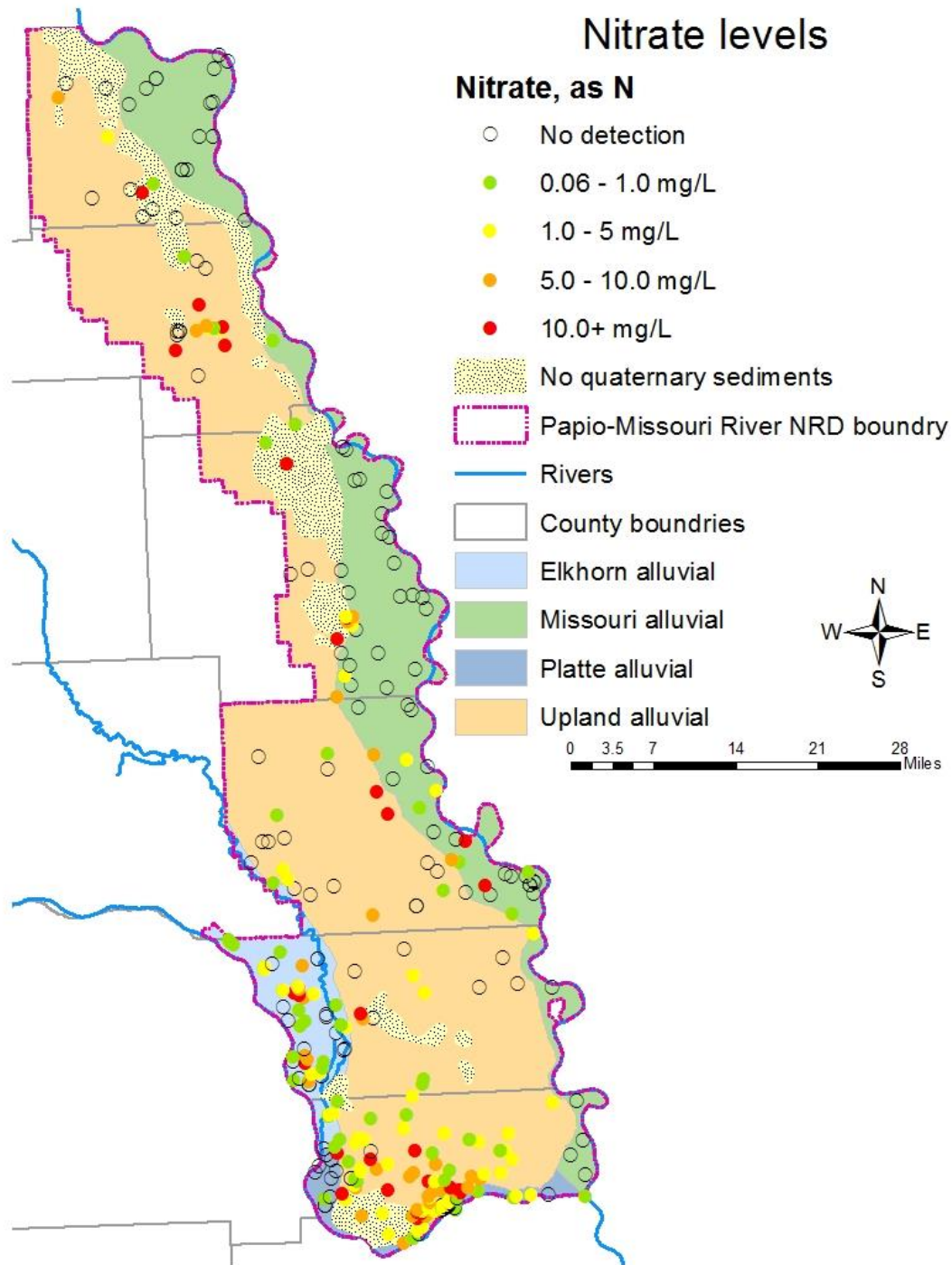


Figure 2. Wells sampled from 1992-2013 (Produced by USGS 2015)

PROFESSIONAL SERVICES AGREEMENT

This Professional Services Agreement (this "Agreement") is made and entered into as of _____, 2016 by and between the PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT, having an office at 8901 S. 154th Street, Omaha, Nebraska, 68138-3621 (hereinafter called "the District") and Aqua Geo Frameworks, LLC., a limited liability corporation 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 Springfield Project Area (SPA), depicted in Exhibit A and attached hereto. This work will be accomplished through use of Airborne Electromagnetic (AEM) Surveys in conjunction with existing geologic and hydrogeologic information. There will be approximately 584 line-miles (940 kilometers) of AEM data collected for the project. The District has applied for a grant in the amount of \$240,000 from the Nebraska Water Sustainability Fund ("WSF") for a portion of the funding for the work described herein.

B. AGF is a Company qualified and experienced in conducting and preparing AEM 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 the SPA Area. 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 approximately 200 to 300 meter spacing in a north-south and east-west directions. Approximately 584 miles of AEM survey will be flown for the area.
- 1.2 Subject to the contingency of the award of the WSF grant, as detailed below, 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 reasonably

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 the SPA to provide the hydrogeological framework, commencing on approximately July 15, 2016 through September 1, 2016. Status reports of the data acquisition will be provided to the Contract Representative of District daily, including the areas flown, production rates, and flight plan for the following day.
- 1.5 The Contractor shall process and perform quality assure/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 in the form as described in the Deliverables listed in Exhibit B and attached hereto.
- 1.7 The Contractor shall provide a hydrogeologic framework report that will include maps of aquifer(s), maps of aquifer(s) 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 in the form as described in the Deliverables listed in Exhibit B and attached hereto.

2. SCHEDULE.

- 2.1 The project planning, AEM data acquisition, QA/QC, and preliminary inversion work shall be completed by approximately September 1, 2016, but no later than December 1, 2016. A letter report on status of project shall be given at that time with a presentation at a meeting of the District and the project partners.
- 2.2 Beginning approximately September, 2016, the Contractor will begin development of the hydrogeologic framework.. After completion of the framework, a data publication will be produced and reported out to the District by approximately January 15, 2017, but no later than March 24, 2017.

3. COMPENSATION.

- 3.1 Subject to the District's award of the WSF grant in an amount of \$240,000, 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 \$400,000.00 to be paid as follows:

3.1.2 Due within 30 days upon signing the Agreement, (30%)
\$120,000.00;

3.1.3 Due upon completion of the data acquisition by AGF, (50%)
\$200,000.00

3.1.4 Following review and satisfactory acceptance of the completed report of Part 1.7 of section 1 of contract by the District the remaining (20%) \$80,000.00. The District shall complete its review of the report within thirty (30) days of receipt of the report.

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 = \$400,000.00

3.2 In no event shall the District be responsible or liable for any costs related to the work described here in excess of the fixed fee amount of \$400,000.00, unless authorized in writing by the District.

3.3 In the event that the District is not awarded the WSF grant in the amount of at least \$240,000, this contract shall be void and the Parties shall have no obligations hereunder. For the avoidance of any doubt, the District shall not be obligated to pay any amounts to the Contractor should this event occur.

4. TERM AND TERMINATION

4.1 This Agreement is effective as of _____, 2016 and shall continue until the Project is completed 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 AGF's receipt of written notice 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. Except as expressly provided in 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 of the courts of the State of Nebraska and waives any objection that it may have to either the jurisdiction, venue, or inconvenient forum of such courts. Nothing in this Agreement shall be construed as a waiver of any of the District's immunities as a governmental entity.

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:

10.2.1 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;

10.2.2 Contractual liability coverage for AGF's obligations hereunder;

10.2.3 Products hazard coverage;

10.2.4 Completed Operations Coverage;

10.2.5 Workers Compensation pursuant to the statutory requirements;

10.2.6 Excess or Umbrella Liability per occurrence of \$2,000,000, and a general aggregate of \$2,000,000.

10.2.7. Professional Liability for each claim made of \$1,000,000, and an annual aggregate of \$2,000,000.

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 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.

10.5 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.

10.6 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.

10.7 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.

10.8 AGF shall require any subcontractor to carry and maintain, during the term of this Agreement, or any extension thereof, the same insurance 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 mediation by a third party neutral who is mutually acceptable to the Parties. The Parties shall equally bear the costs of this mandatory mediation.

13. ACCESS TO RECORDS

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

14. PUBLIC RECORDS. The Parties acknowledge and understand that any and all records and reports generated under this Agreement shall be public records.

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 W. Woodward, P.E. CFM, Phone: 402-444-6222, 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. Mr. Woodward does not have the authority to amend or modify this Agreement or to waive any provision of this Agreement.

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.

19. 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.

21. 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.

22. 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.

23. NOTICE

All notices, demands and consents required or permitted to be given under this 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 Street,
Omaha, NE 68138-3621

Attention: John Winkler
General Manager
Phone: 402-444-6222

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

Attention: James C. Cannia
Member Principle Geologist
Phone: 308-641-2635
Email address: jcannia@aquageoframeworks.com

24. 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.

25. 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.

26. ASSIGNMENT

Neither the Contractor nor the District shall assign, subcontract, pledge, mortgage or otherwise encumber any of its rights hereunder without the prior written consent of the other Party.

27. 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.

28. NONDISCRIMINATION

Pursuant to Neb. Rev. Stat. § 48-1122, Contractor and its subcontractors shall not discriminate against any employee or applicant for employment, to be employed in the performance of this contract, with respect to his or her hire, tenure, terms, conditions, or privilege of employment because his or her race, color, religion, sex, disability, or national origin.

29. IMMIGRATION VERIFICATION

Pursuant to Neb. Rev. Stat. § 4-114, Contractor shall utilize a federal immigration verification system to determine the work eligibility status of new employees physically performing services related to this contract.

IN WITNESS WHEREOF, the Parties to this Agreement have caused it to be executed by their duly authorized representatives as of April 15, 2016

AQUA GEO FRAMEWORKS, LLC

By: _____

James C. Cannia P.G., Member Principal Geologist

PAPIO-MISSOURI RIVER NATURAL
RESOURCES DISTRICT,

By: _____

John Wnkler, General Manager