

WSF 2020 Final Report # 5255

(April 15th, 2021)

1. Project progress to date for the first report, then progress since the last annual report for future reports, including where you are relative to completing the project.

- AEM flight data collection was completed.
- Preliminary LCI (laterally constrained inversion) profiles and 3-dimensional fences were created and delivered daily after each prior days flight.
- Final report from Aqua Geo Frameworks was completed and turned over to the Nemaha NRD.

2. List project related activities planned for the coming year.

- AEM flights began data collection on August 12, 2020.
- Preliminary LCI profiles and 3-dimensional fences were provided each day following data collection flights.
- AEM flight data collection ended on August 16th, 2020.
- The final hydrogeologic framework report was completed for the surveyed area and delivered to the Nemaha NRD on March 15th, 2021.

3. Forecast or projected cash flow for remainder of the project. This should be high level, not a detailed list, to give the Commission a projection of the fund's cash flow.

- March 6th, 2020 AGF invoice in the amount of \$118,050 (WSF - \$70,830 + NNRD - \$47,220) was sent to NRD accounting for Contractor's 30% down payment of the project.
- March 20th, 2020 reimbursement claim #1 for \$70,830 was sent to WSF for reimbursement.
- August 24th, 2020 AGF invoice in the amount of \$196,750 (WSF - \$118,050 + NNRD - \$31,480) was sent to NRD accounting for Contractor's 50% payment of the project.
- April 15th, 2021 reimbursement claim #2 for \$118,050 was sent to WSF for reimbursement.
- March 25th, 2021 AGF invoice in the amount of \$78,700 (WSF - 47,220 + \$31,480 - NNRD) was sent to NRD accounting for Contractor's final 20% payment of the project. Due to NRD cash flow, mailing of final payment to AGF has been delayed to April 16th, 2021 (estimated). Final reimbursement request will be sent to WSF after payment is cashed by Contractor and copy of cashed check is received by NRD.

4. Reassessment of the likelihood that benefits projected in the application will be realized and, for the “Final Report”, a description of benefits realized or reasonably expected to be realized as compared to those stated in their application.

- The primary tangible benefits of this project are similar to testhole drilling for geologic logging but at a fraction of the cost and time. UNL Conservation & Survey Division (CSD) estimates the cost for drilling to produce the same amount of data at over \$58 million and would take over 350 years. The AEM data collected provides a record of the geologic material present from ground surface to deep into bedrock. The outcome of the AEM data collection is also enhanced by ground truthing the results by comparing UNL CSD testhole logs, the Nebraska Department of Natural Resources registered water well database and prior AEM work completed.
- The AEM data also provides an ancillary benefit of identifying areas of low and high groundwater recharge. This data can be used to foster on the ground projects in high recharge areas thus augmenting groundwater supplies & availability.
- The AEM data helps to identify and define aquifer system interrelationships from one another by revealing confining layers that effect groundwater usage, recharge, discharge rates and potential contamination threats. Also, the AEM data pinpoints the boundary extents of the paleovalley alluvial aquifer system which would be very difficult to detect using traditional testhole drilling.
- The above geologic understanding will be used to drive groundwater quality and quantity management decisions ensuring the long-term conservation and protection of the water resource.