




LOWER PLATTE SOUTH natural resources district

3125 Portia Street | P.O. Box 83581 • Lincoln, Nebraska 68501-3581
P: 402.476.2729 • F: 402.476.6454 | www.lpsnrd.org

Agenda Item #11

Memorandum

Date: July 16, 2020
To: Each Director
From: Paul D. Zillig, General Manager 
RE: Water Resources Subcommittee Meeting Minutes.

The Water Resources Subcommittee met via video/teleconference at 5:30 p.m. on Wednesday, July 15, 2020. Subcommittee members participating included Bob Andersen, Chelsea Johnson, Karen Amen, Greg Osborn, David Landis, Vern Barrett, and Dan Steinkruger. Others accessing the meeting included Larry Ruth, Gary Aldridge, Gary Vocasek with the Village of Hallam, Jeff Schaefer & Bob Nitsch of NPPD, Dale Slautman of EA Engineering, Nathan Kuhlman, Tracy Zayac, Dick Ehrman, Maclane Scott, Craig Matulka, Dan Schulz, Mike Murren, David Potter, Jared Nelson, and myself.

Chair Andersen opened the meeting, welcomed those in attendance, and moved to the first item, Report on the Monolith Nebraska Preliminary Well Permit. Andersen reported on the application and Monolith's facility being constructed near Hallam. He also reviewed other groundwater use in the area and that a preliminary permit was approved July 10th so they could begin the analysis of groundwater availability and pumping. Andersen and myself reviewed the attached background information, the Preliminary Well permit, and reported that funding has been included in the Budget for an independent review of the results of the modeling analysis that will be submitted.

Dale Slautman of EA Engineering reported on the work they will be doing for Monolith to analyze groundwater resources. Slautman reported that Monolith's volume of groundwater to be pumped has not been determined as they need to complete installing the observation well, the production well, and conduct the pump test. Slautman reported that until Monolith reviews this information there won't be many more facts available.

The Subcommittee is very interested in hearing of Monolith's groundwater needs, plans for the site, and disappointed that very little information is available. They are concerned about what impact this use can have on the future of the aquifer, Hallam, NPPD, domestic users, and irrigators in the area.

The next item on the agenda was to review the bids received for the Upper Salt 3-A / SW 2nd Street Road Relocation Project. Murren reported that earlier this month 2 bids were received:

- **Van Kirk Bros. Contracting, Sutton, NE \$1,826,113.75 and**
- **Commercial Contractors, Lincoln, NE \$2,094,254.15**

Murren reported that while Van Kirk Bros has not done work for LPSNRD, they have done work for other NRDs and those NRDs have been pleased with their work. If approved, Van Kirk Bros would start construction in early September.

It was moved by Landis, seconded by Osborn, and unanimously approved by the Subcommittee to **recommend the Board of Directors approve the low bid from Van Kirk Bros. Contracting of Sutton, Nebraska in the amount of \$1,826,113.75 for the Rehabilitation of Floodwater Structure Upper Salt 3-A / SW 2nd Street Road Realignment Project.**

The second action item was to consider hiring professional services for the design, permitting, bidding, and construction observation of Upper Salt 6-1. Matulka reported that this grade control structure in the Sprague-Hallam area was built in 1959 and the principal spillway pipe and riser will need to be replaced due to continued corrosion. Matulka referred to the attached proposal from FYRA Engineering to do the necessary work for approximately \$21,538. It was moved by Osborn, seconded by Landis, and unanimously approved by the Subcommittee to **recommend the Board of Directors authorize the General Manager to approve an engineering services agreement with FYRA Engineering for the design, permitting, bidding, and construction phases for the repair of Upper Salt 6-1 at a cost not to exceed \$21,538, pending legal counsel review.**

The next action item was to consider a modification to our contract with EA Engineering to complete a Groundwater Verification Study for the Greenwood, Emerald, & Pleasant Dale communities. A copy of the Modification is attached. Ehrman reported on the additional, unplanned work that was needed to complete the work at Emerald. Two landowners decided to not allow the installation of monitoring wells, additional cost resulted in obtaining County approval to use road right-of-way for those wells, and several wells were required to be drilled deeper than proposed. It was moved by Landis, seconded by Osborn, and unanimously approved by the Subcommittee to **recommend the Board of Directors approve Modification No. 1 to EA Engineering & Science's Groundwater Verification Study contract at an additional cost of \$18,900.**

The next item was a report by Zayac on existing agreements to allow pumping of water stored in an NRD dam. Zayac reviewed the attached report on Storage-Reservoir Irrigation Rights in the LPSNRD and the 14 dams with current agreements/permits. It was reported that most of these permits date back to the 1970's and 1980's. The Subcommittee discussed that there needs to be public benefit before we allow landowners to irrigate from these dams and that there should be a benefit to the NRD. Staff will further review the agreements and report back to the Subcommittee.

Murren then gave a report on construction at Oak-Middle 82-B. Work is going slow, as the riser constructed did not meet specs, and had to be removed. The contractor, Goes Construction, is currently delayed until they dewater the site and re-pour the riser. The contractor is approximately 1 month behind schedule. We will keep the Subcommittee informed of the status of this project.

There being no additional business the meeting adjourned at 6:55 pm.

PDZ/pz

cc: Steve Seglin & Corey Wasserburger

Groundwater in the Hallam Area

- University of Nebraska, Conservation & Survey Division refers to the Dorchester-Sterling paleovalley aquifer (up to 200' saturated thickness).
- LPSNRD locally manages groundwater, including the Crete-Princeton-Adams Groundwater Reservoir in the LPSNRD portion of southern Lancaster County (part of the Dorchester-Sterling aquifer). Good groundwater quantity & quality for Southeast Nebraska.

Approximate large ground water users in the area (see map):

- Hallam – 11 million gallons/year
- Irrigation – 10-15 million gallons/year/pivot (approx. 2 months)
- NPPD Sheldon Station – 500 million gallons/year

Monolith Nebraska LLC Well Permitting Application

April 29, 2020	Consultant (EA Engineering) called the NRD asking about well permitting requirements for a potential large ground water user in southern Lancaster County (GW R&R on back).
June 9, 2020	Consultant (EA Engineering) called and identified the potential Monolith well permit application(s), northeast of Hallam. Interest in pumping 2.3 to 4.6 billion gallons/year.
June 9, 2020	Contacted Lancaster County Planning and Village of Hallam concerning Monolith project approval and information on anticipated water use.
June 12, 2020	Received preliminary well construction permit from Monolith Nebraska, LLC for 1 well @ 800 gpm (Class 2 Permit).
June 30, 2020	Monolith starts drilling test hole on site.
July 1, 2020	Met with Hallam Village Board.
July 2020	NRD approve Preliminary Well Construction Permit for one well to enable Monolith to prepare an aquifer test and a hydrogeologic analysis report.
Fall/Winter 2020	Receive reports and additional information from Monolith on groundwater needs, additional water well permits for co-mingled wells to be utilized, the need for a Nebraska Industrial Groundwater Transfer Permit(?), and additional hydrogeologic analysis reports, etc.

PAUL D. ZILLIG

General Manager

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natural resources district

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DICK EHRMAN

Water Resources Specialist

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dehrman@lpsnrd.org
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Rule 2

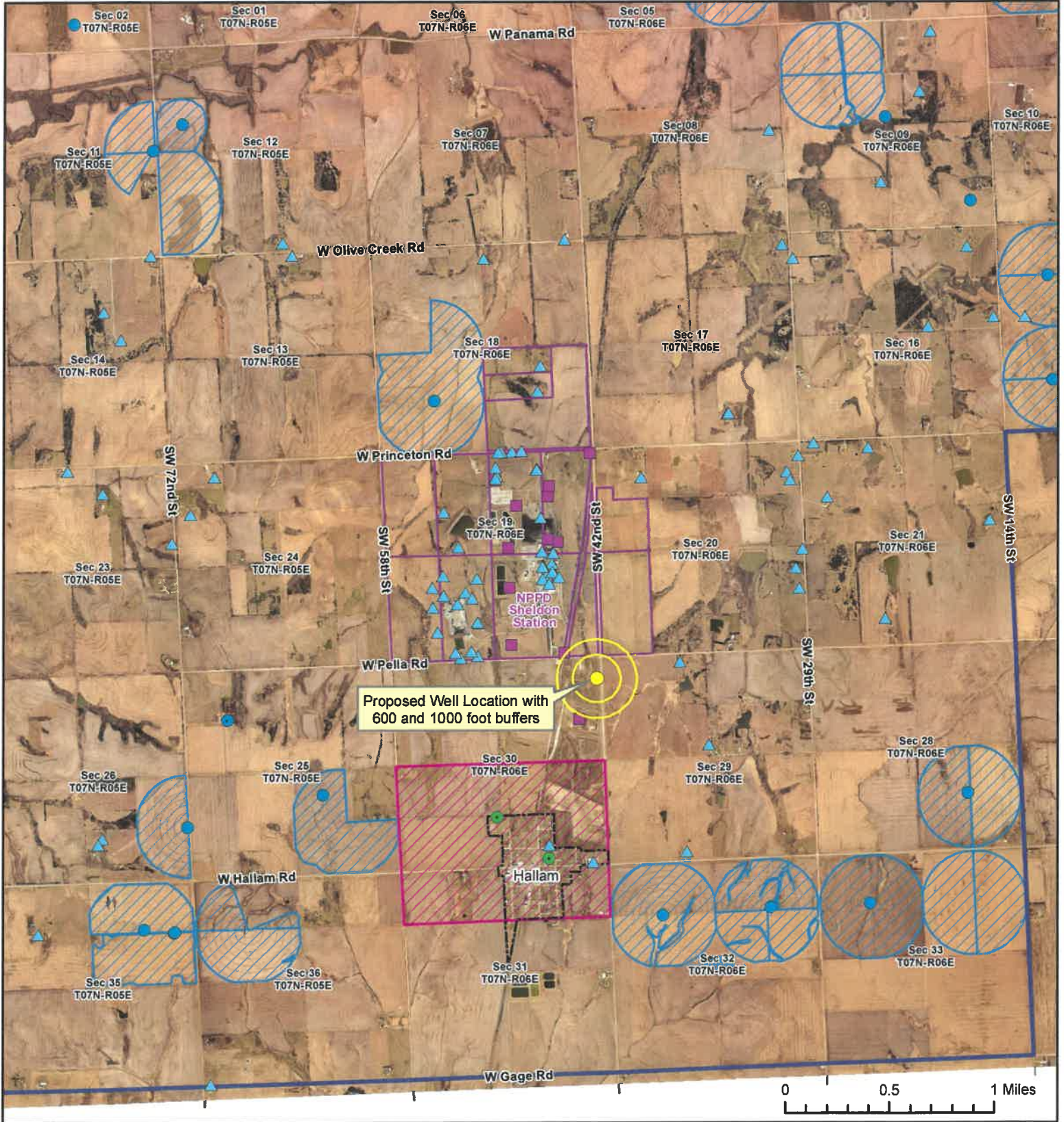
Classes of Well Permits and Required Hydrogeologic and Water Quality Information

- (a) Any person who proposes to construct a well requiring a permit shall be required to provide certain hydrogeologic and water quality information before a water well permit may be approved. The District shall provide guidelines for required reports which shall be submitted to the District with each permit application.

- (c) **Class 2 Permit:**
 - (i) Applies to any proposed well to be located in a Ground Water Reservoir designed and constructed to pump 1000 gallons per minute or more, or pump 250 acre-feet or more water per year;
 - (A) The requirements for a Class 2 permit shall be as follows and shall be included with the application:
 - (1) A copy of the well log to determine geologic formation;
 - (2) An accurate static water level measurement to estimate saturated thickness of the aquifer;
 - (3) An aquifer test including all necessary drawdown and pumping data as required by the District. The aquifer test must be designed and supervised by a licensed professional geologist or engineer with experience in such analysis;
 - (4) Water quality samples to be collected at the end of a 24-hour pump test. Any well must be pumped at 100% of its designed rate. The samples shall be submitted to a qualified laboratory for analysis of sodium, chloride and total dissolved solids; and
 - (5) A hydrogeologic analysis report considering the impact of the proposed withdrawal on current ground water users and a minimum twenty (20) year impact on the aquifer for potential future users shall be submitted by the Applicant. The report must be prepared by a licensed professional geologist or engineer with experience in such analysis.

LPSNRD 1/15/2020

Well Permit Review - Monolith NE Sec 30, T7N-R6E, Lancaster



Map By:
LPSNRD, sdr
6/26/2020

- | | | |
|------------------------|---------------------|---------------------|
| Proposed Well Location | Certified Irr Acres | Reg Wells |
| Well Spacing Buffers | CWSPA | Irrigation |
| LPSNRD Boundary | NPPD Parcels | Commercial |
| Town Boundary | | Public Water Supply |
| | | Other Wells |



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July 10, 2020

Monolith Nebraska LLC
134 S. 13th Street, Suite 700
Lincoln, NE 68508

Dear Matt:

The Lower Platte South NRD has approved your Preliminary Well Construction Permit for your Water Well Permit application (enclosed is a copy). The Preliminary Well Construction Permit (LPSP-200412) is located in the NE 1/4 of the NE 1/4 of Section 30, Township 7 North, Range 6 East, Lancaster County. The current location and GPS coordinates highlighted on the permit form meet current well spacing requirements. If this location is moved, you must contact the District before beginning drilling to make certain the new location meets well spacing requirements. This is a Class II permit for a well in a Ground Water Reservoir for industrial use. This gives you one year from the date of preliminary approval to complete and submit the information required for the class of permit you are applying for.

Class II Permit Requirements:

- A copy of the well log to determine the geologic formation(s) present.
- An accurate static water level.
- An aquifer test with at least one observation well, and all necessary drawdown and pumping data as required by the District. The aquifer test must be designed and supervised by a licensed professional geologist or engineer with experience in water resources evaluation. The aquifer test must be conducted according to the plan document submitted by EA Engineering, Science, and Technology via email on June 16, 2020.
- Water quality analysis of samples from a qualified laboratory. Samples are to be taken after 24 hour pump test at 100% of the designed pumping rate. Results to be attached include Sodium (Na), Chloride (Cl), and Total Dissolved Solids (TDS).
- A hydrogeologic analysis report considering the impact of the proposed withdrawal on the current groundwater users and the minimum twenty (20) year impact on the aquifer for potential users shall be prepared and submitted. The report must be prepared by a licensed professional geologist or engineer with experience in water resources evaluation.

Additional Information/Comments/Questions:

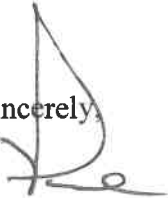
- We understand that there is the likelihood that additional wells will be needed to supply Monolith's needs, and that the water from these additional wells will be commingled.

Under current Nebraska law and LPSNRD regulations, such commingled wells will be considered as a single source and the total output of those wells will be treated as a single, aggregate amount. Given the large scale of this development, please be aware that, depending upon the results of the aquifer test and modeling as well as the number and capacity of any additional well(s) to be installed, additional analysis, including but not limited to additional aquifer testing, longer-term modeling, and additional data collection, may be required by the District.

- What is Monolith's ultimate, long-term plan for managing their total water use requirements as well as ensuring that nearby groundwater users (e.g. the Village of Hallam, domestic/other private well owners, irrigators, Nebraska Public Power District, etc.) are not adversely impacted by Monolith's groundwater withdrawals? LPSNRD understands that such planning will depend on the results of aquifer testing, groundwater modeling, and other factors, but initiating planning for the long term now will help avoid possible conflicts in the future.
- All groundwater users and NRDs are concerned about the effect additional large scale groundwater pumping may have on groundwater quality. LPSNRD has information indicating that groundwater in the vicinity of the Monolith facility may be elevated in certain constituents such as total dissolved solids (TDS). The source of TDS is generally thought to be deeper bedrock aquifers, and given the amount of groundwater Monolith may eventually be withdrawing, saltwater intrusion is a possible concern. The potential degradation of groundwater quality needs to be evaluated to insure the wellfields can be managed and operated properly without inducing the intrusion of groundwater of poorer quality.
- What is Monolith's plan for reaching out to and informing the public and other water users (e.g. the Nebraska Public Power District) in the general area? LPSNRD understands that Monolith has had contact with the Village of Hallam through the zoning/planning process, but it's clear very little information has been provided previously by Monolith to the NRD, community, or the area about your estimated groundwater needs to operate your facility.

Once you have gathered all the information necessary, please send it to the Lower Platter South NRD office along with the permit application form (enclosed). After all items have been received, your application will be considered for Final Approval. Please remember that all newly permitted wells must be equipped with a water meter. Cost share is available on the water meter. Also, the District requires that all irrigated acres be certified by the District prior to irrigating. Please contact myself or Maclane Scott at (402) 476-2729 if you have any questions.

Sincerely,



Paul D. Zillig
General Manager



Lower Platte South
Natural Resources District



**PRELIMINARY WELL CONSTRUCTION PERMIT
LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT**

1. Fill out #'s 1-10 on the attached Water Well Permit Application.
2. Sign below and submit to the District.

I, Matthew Rhodes (print name) acknowledge that I have received and read the guidance document, aquifer test procedures, and the water well permit classes flow chart. I also acknowledge this Preliminary Well Construction Permit is for constructing a well to gather the required information to complete a Water Well Permit application. I also acknowledge that approval of this Preliminary Well Construction Permit by the District does not assure me that I will receive a Water Well Permit, and I understand there is one year to complete the Water Well Permit application.


Signature

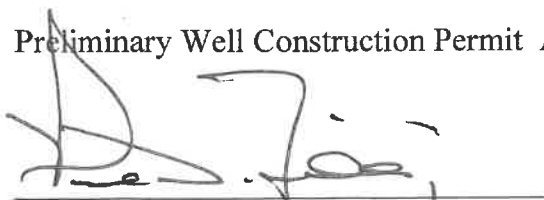
6/12/2020
Date

NRD – Preliminary Well Construction Permit site inspection by:


Inspector

6-25-20
Date

Preliminary Well Construction Permit Approval


Paul D. Zillig, General Manager

LPSP-200412
Preliminary Permit Number

July 10, 2020
Date

APPLICATION FOR A PERMIT TO CONSTRUCT A WATER WELL IN THE LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT

GROUNDWATER RESERVOIR PERMIT FORM

1. **PERMIT CLASS (indicate one)**
 Class I (50 gpm < X < 1000gpm and < 250 acre-feet/ year)
 Class II (≥ 1000gpm and/ or ≥ 250 acre-feet/year)
- Is this well intended to pump salt water for a beneficial use? () Yes No
 If Yes, then application will be considered for a Salt Water Well Permit
2. **IS THIS PERMIT FOR A SERIES OF WELLS?** () Yes No
 If Yes, how many wells? _____

DNR & NRD USE ONLY	
Permit No. <u>LPSP-200412</u>	
Reg. No. _____	

3. **NAME AND ADDRESS OF APPLICANT:**

Monolith Nebraska, LLC

 134 S 13th St Ste. 700

 Lincoln, NE 68508

 Phone (319) 541 _____ — 1554 _____

4. **NAME AND ADDRESS OF WELL DRILLER:**

Cahoy Pump Service, Inc.

 24568 150th Street

 Sumner, IA 50674

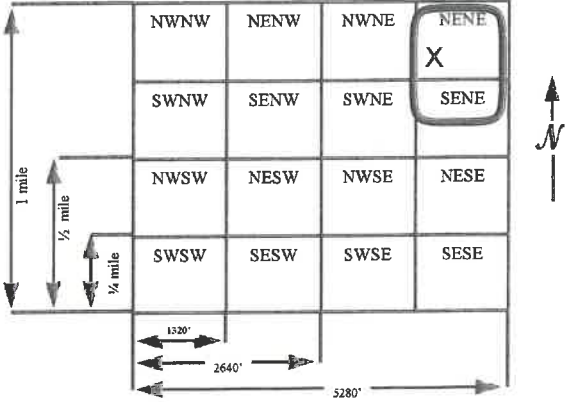
 Phone (563) 578 _____ — 1130 _____

5. **PURPOSE OF WELL (indicate one)** () Public Water Supply () Irrigation () Domestic () Livestock
 () Dewatering (over 90 days) () Geothermal () Monitoring () Aquaculture Industrial
 () Recovery () Other _____
- 40.550568, -96.780457

6. **IDENTIFY THE LOCATION OF THE PROPOSED WELL:**
 Lancaster County,
 Township 7 North, Range 6 East, Section 30

The box at the right represents one square mile, (section). Indicate with an "X", the proposed location of the well. Outline the proposed water use area, if water is to be used outside the above written legal description, give legal description of water use area,
 Township _____ North, Range _____ East, Section _____

The well will be located _____ feet from the North/South section line, and will be _____ feet from the East/West section line.



If possible mark (with a flag) the well site in the field

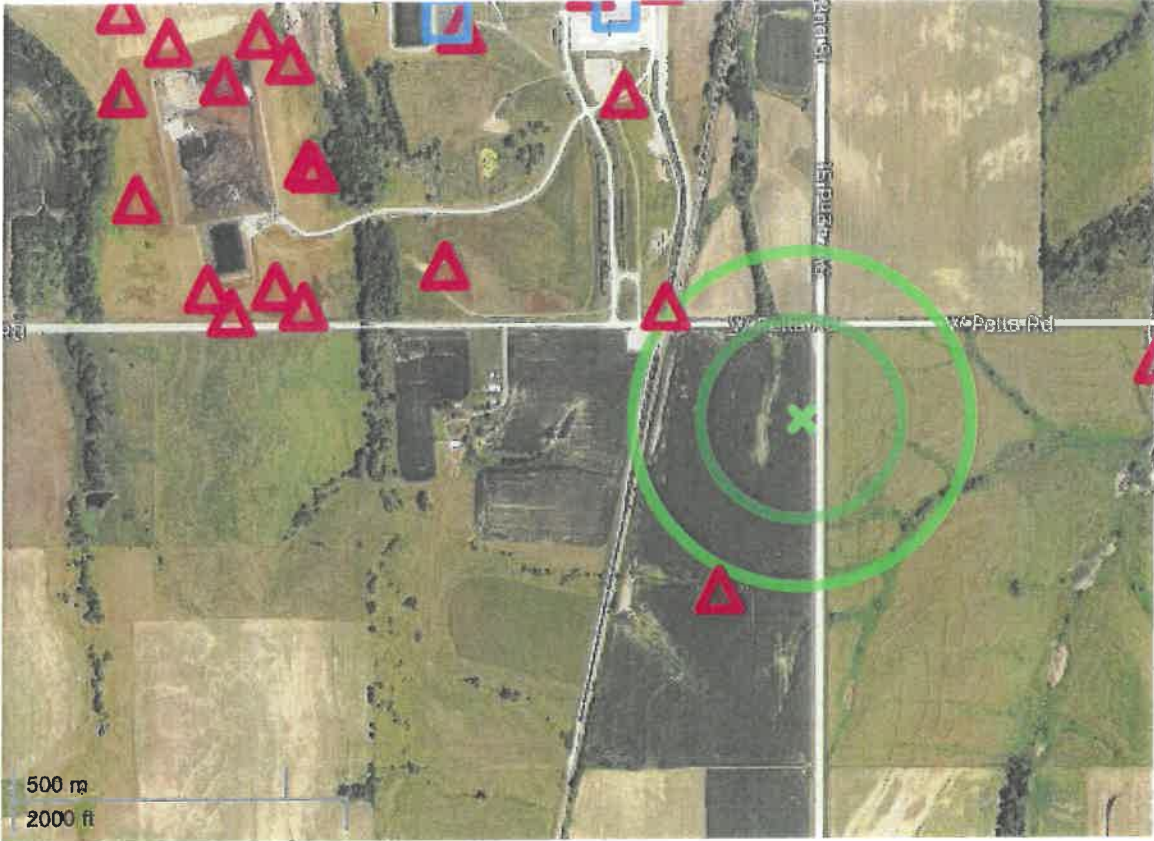
7. **COMMINGLED, COMBINED, CLUSTERED, OR JOINED WELLS:**
 Will the proposed well be connected to another well(s) or be used to supplement an existing water use from another well? () Yes No
 If yes, list registration numbers of other well(s) _____
8. **IRRIGATION WELLS:**
 How many acres will be irrigated? 0
 Type of irrigation system: () Center Pivot () Gravity () Other (specify) _____
 Will Fertilizer, Chemicals or Animal Waste be applied through the system? () Yes () No
9. **REPLACEMENT AND ABANDONMENT WELL INFORMATION:**
 Is this a replacement well? () Yes No Registration number of well to be replaced: _____
 Well to be replaced was last operated _____, 20____ Replacement well is _____ feet from the original well.
 Will new well water the same tract of land or provide water for the same use as the decommissioned well? () Yes () No
10. **SPECIFICATIONS OF INTENDED WELL AND PUMP:**
 Approximate date when construction will begin: June 22, 202020
 Estimated total well depth ³¹⁰ _____ feet. Estimated water well capacity: ⁸⁰⁰ _____ gallons per minute
 Pump column diameter: ⁶⁻⁸ _____ inches. Well casing diameter: ¹² _____ inches.

DO NOT BEGIN CONSTRUCTION UNTIL AN APPROVED PRELIMINARY WELL CONSTRUCTION PERMIT FORM IS RETURNED TO THE LANDOWNER



LOWER PLATTE SOUTH
natural resources district

District Preliminary



Selected / Unselected Well from
600 and 1000 feet



Selected / Unselected Permit
from 600 and 1000 feet

WELL INFORMATION

PERMIT INFORMATION

11. I certify that I am familiar with the information contained in this application, and its restrictions, rules and regulations and that to the best of my knowledge and belief such information is true, complete and accurate. The necessary supporting material, under the district's Groundwater Rules and Regulations (Section B), is attached for the well permit class to which I am applying. A copy of the Groundwater Rules and Regulations is available upon request.

This form must be completed in full and be accompanied by a non-refundable \$50.00 filing fee (payable to the Lower Platte South Natural Resources District). Forward this application and filing fee to Lower Platte South Natural Resources District, P.O. Box #83581, 3125 Portia Street, Lincoln, Nebraska 68501-3581. Please take the time to fill out the information correctly. An incomplete or defective application will be returned by the District, with 60 days being allowed for resubmission. All permits shall be issued by the District with or without conditions attached, or denied no later than 30 days after receipt of a complete and properly prepared application pursuant to §46-736.

Date: 6/12/2020

Signature of Applicant: _____



Date Approved: _____ Date Denied: _____ Reason for Denial Attached _____ NRD Representative: _____

PERMIT RESTRICTIONS & TERMS

- Water well permits are required prior to completing construction and use of the water, if construction and use of the water well is commenced prior to obtaining a permit, a late permit must be obtained from the District along with a \$250.00 application fee.***
- Any person who, on or after August 13, 1996, commences or causes construction of such a water well for which the required permit has not been obtained, or who knowingly furnishes false information regarding such permit, shall be guilty of a Class IV misdemeanor pursuant to §46-602.02 and §46-613.02.
- Prior to construction of a water well, a water well contractor shall take those steps necessary to satisfy himself or herself that the person for whom the well is to be constructed has obtained a permit pursuant to §46-602.
- No irrigation or industrial water well or water well of any other public water supplier shall be drilled within 1,000 feet of any registered water well of any public water supplier; No water well of any such public water supplier shall be drilled within 1,000 feet of any registered irrigation or industrial water well; No irrigation water well shall be drilled within 1,000 feet of a registered industrial or within 600 feet of a registered irrigation water well; No industrial water well shall be drilled within 1,000 feet of a registered irrigation or industrial water well pursuant to §46-609 and §46-651. These spacing requirements shall not apply to water wells owned by the same person. Any person may apply to the Nebraska Department of Natural Resources for a special permit to drill a water well without regard to the spacing requirements pursuant to §46-653.
- This permit does not register the water well with the Nebraska Department of Natural Resources. All water wells are required to be registered by the water well contractor constructing the well with the Nebraska Department of Natural Resources within 60 days after the water well is completed pursuant to §46-602.
- A replacement water well is one which replaces an abandoned water well that has been operated within the last three years, and is constructed to water the same tract of land as the abandoned water well which is being replaced. As of August 13, 1996 replacement wells **DO** need a permit from the Lower Platte South Natural Resources District. If a water well is being replaced it must be properly abandoned according to state guidelines. A copy of these guidelines are available from the Lower Platte South Natural Resources District.
- If the water well is not constructed and equipped within a one year period from the date of approval, a new water well permit is required.
- Water wells may not be drilled within 50 feet of a stream bank without first getting a surface water right for that stream from the Nebraska Department of Natural Resources pursuant to §46-637.
- Permits are not required for test holes, temporary dewatering wells with an intended use of less than 90 days, or a single water well designed and constructed to pump (yield) 50 gallons per minute or less pursuant to §46-656.29.
- The issuance by the District of this permit or registration of a water well by the Director of the Nebraska Department of Natural Resources pursuant to §46-602 shall not vest in any person the right to violate any rule, regulation, or control in effect on the date of issuance of the permit or the registration of the water well or to violate any rule, regulation, or control properly adopted after such date.
- All wells permitted after March 31, 2008 must be equipped with a NRD approved flow meter (See Section C, Rule 1 of the District's Ground Water Rules & Regulations)
- All applicants for a water well permit shall, as a condition of the permit, agree to cooperate with the district, at its request, in ground water monitoring activities to include water level measurement and water quality sampling (See Section B, Rule 7 of the District's Ground Water Rules & Regulations)

COMMENTS / RESTRICTIONS / TERMS _____

LOWER PLATTE SOUTH NRD PO BOX #83581 3125 PORTIA STREET
LINCOLN, NE 68501-3581 PHONE (402) 476-2729 www.lpsnrd.org



Scope of Services
Upper Salt Creek Dam Site 6-1
Lower Platte South NRD

Tasks	Sr Engineer	Prj Engineer	El	Expenses	Total
	Sotak	Kaufman	Varies		
	\$205	\$150	\$105		
Project Management					
Landowner Coordination	1				
Monthly Invoicing	3				
Design Coordination with LPSNRD	2		4		
Project Management Total	\$1,230	\$0	\$420		\$1,650
Design					
Review As-builts / Bring into CADD			4		
Site Visit/Inspection	3.5				
Create Base Map			4		
Conduct Hydrology Check	0.5		3		
Final Hydraulic Analysis	0.5		6		
Prepare Construction Plan Set	1		24		
Prepare Project Specifications	4		8		
Develop Engineer's Opinion on Costs	0.5		4		
Design Total	\$2,050	\$0	\$5,565		\$7,615
Permitting					
Prepare and Submit USACE Section 404 Nationwide Permit ¹		8	4		
Coordination with USACE		2			
Prepare NDNR Permit Application	1.5		1		
Correspondance with NDNR	1				
Permitting Total	\$512.50	\$1,500	\$525		\$2,538
Bid Phase					
Pre-Bid Coordination	2				
Project Bidding	4				
Bid Phase Total	\$1,230	\$0	\$0		\$1,230
Construction Phase					
Pre-Construction Coordination	1				
Construction Observation			60	\$750	
Construction Reporting	2		4		
As-Built Drawings			4		
Construction Phase Total	\$615	\$0	\$7,140	\$750	\$8,505
Subtotal Hours	28	10	130		
Subtotal Costs	\$5,638	\$1,500	\$13,650	\$750	\$21,538

Assumptions:

¹Assumes that the existing structure is authorized under 33 CFR 330.3, that rehabilitation limits are immediately adjacent to the existing structure, and that a Nationwide Permit can be issued. Does not include wetland delineation or determination of ordinary high water mark.

Schedule:

Draft project plans to be completed within 45 days of contract execution.
 Permit application to be submitted to USACE upon receipt of NRD comm

23 June 2020

Dick Ehrman
Water Resources Specialist
Lower Platte South NRD
3125 Portia Street
Lincoln, NE 68521

RE: Modification No. 1 to 0702048 and Accompanying Documents
Groundwater Verification Studies
Greenwood, Emerald, and Pleasant Dale Community Water System Protection Areas


Dear Mr. Ehrman:

The purpose of this letter is to forward EA Engineering, Science, and Technology, Inc., PBC's (EA's) requested project modification proposal regarding the Emerald monitoring wells. In summary, EA proposes to modify its services as outlined in the attached documents for an additional price/cost of \$18,900 under the terms and conditions of EA's Consulting Services Agreement, executed on 27 June 2018 with Lower Platte South NRD. Consequently, the inclusion of this modification cost will raise the total project and contract amount to \$297,800.

In accordance with the above-referenced agreement, EA's project modification proposal consists of two elements: *Exhibit Modification A: Modification Scope of Work*, and *Exhibit Modification B: Modification Price Schedule*. Please review the attached documents to verify that they meet your approval. To confirm your agreement with EA's project approach, technical assumptions, and pricing, please acknowledge acceptance of this modification in the "client" space provided on the following page and return this entire document to my attention. I will have the project authorization countersigned by the appropriate EA personnel, and a copy of the documents immediately returned for your records.

If we can be of any further assistance, please do not hesitate to contact me at 402-476-3766.

Sincerely,



Dale Schlautman
Vice President

Attachments

ACCEPTANCE: By my signature below, I hereby agree to the information contained in the Modification Scope of Work and Modification Price Schedule provided in the attached Exhibits, and to the performance of this work under the terms and conditions provided in the EA Consulting Services Agreement referenced above.

**EA ENGINEERING, SCIENCE,
AND TECHNOLOGY, INC., PBC**

**LOWER PLATTE SOUTH NATURAL
RESOURCES DISTRICT**

Signature

Signature

Title

Title

Date

Date

Exhibit Modification A-1: Modification Scope of Work (Agreement No. 0702048)

This Modification Scope of Work is incorporated into the Consulting Services Agreement referenced above between EA Engineering, Science, and Technology, Inc., PBC and Lower Platte South NRD.

SCOPE OF WORK

The purpose of this modification is to address the additional effort needed to complete the monitoring well installation at Emerald, NE. The monitoring well installation task at Emerald has been an unusually challenging task due primarily to difficulty with obtaining landowner property easement agreements. Below is a list of the additional unforeseen work scope items that were beyond our original Scope of Work related to Task 3 – Baseline Groundwater Monitoring.

Investigation of Alternate Monitoring Well Locations

- Monitoring well installation activities had already begun at a site when the landowner changed their mind about allowing the monitoring well. The reason the landowner withdrew permission for the well was due to his understanding of requirements of his CRP contract. The work was immediately ceased at the landowner's request, but significant subcontractor and labor effort had already been expended.
- Extended communications with landowners and LPSNRD staff to find suitable locations for the remaining two monitoring wells after other landowners in the target areas decided to decline permission for installation of a well.
- Significant coordination with the county and state for alternative monitoring well locations in road right-of-way. Two locations in the county road right-of-way were found to be feasible

Right-Of-Way Coordination and Permitting

- Preparation of permitting materials for submittal by the LPSNRD to the county for installation of two monitoring wells in the county road right-of-way. Permit applications were submitted and the permits were eventually approved and received.
- Coordination with the county was provided during well installation at the county's request.

Property Boundary Survey and Mapping

- A boundary survey was necessary to firmly establish location of property boundaries to ensure that the wells would be located properly within the off-set distances required by the county permit at the two well locations.
- The property boundaries were staked in the field.

Communication with Landowners and Utilities

- Coordination with landowners adjacent to proposed well locations within the county road right-of-way to refine locations.
- One of the adjacent landowners expressed interest in moving the monitoring well from the right-of-way to their property. The landowner preferred this option over the proposed right-of-way location and the NRD also preferred to have the well on the property instead of the right-of-way. Provided coordination and conducted an on-site meeting with the landowner and the tenant to finalize the well location and secure an easement while on-site. EA's notary met on-site to witness the signature by the landowner.

- Coordination and site visits to facilitate one-call for utility clearances and monitoring well locations for the two locations in the county road right-of-way. After the well was moved to the adjacent property an additional one-call was coordinated for the new location.

Additional Drilling Costs

- The new locations for the Emerald monitoring wells resulted in depths greater than originally planned; therefore, additional drilling costs were incurred for the additional drilling depth and well installation materials for the additional depth, as well as an additional mobilization.

COMPARISON TO ORIGINAL SCOPE OF WORK

The following provides a comparison to the original Scope of Work related to Task 3 – Baseline Groundwater Monitoring, and identifies the additional work items.

- Subtask 3.2.2 – Original SOW included a total well depth of 252 feet (84 ft x 3). The actual well depth was 299 ft. Resulting in an additional 47 feet of drilling and well completion.
- Subtask 3.2.2 – Original SOW included a total drilling depth of 300 feet (100 ft x 3). The actual well depth was 347 ft. Resulting in an additional 47 feet of drilling and well completion.
- Original SOW did not include permitting for installation of wells in the county road right-of-way.
- Original SOW did not include a boundary survey.
- Original SOW did not include multiple rounds of coordination for relocating monitoring wells.

SCHEDULE

This modification extends the contract period of performance through **31 December 2020**. This is due to the additional time needed to install the monitoring wells and to provide more time to possibly conduct in-person meetings with the communities (instead of virtual meetings, due to COVID-19) to present and discuss project findings.

Exhibit Modification B-1: Modification Price Schedule (Agreement No. 0702048)

The following is a cost breakdown of the services provided by EA Engineering, Science, and Technology, Inc., PBC for the project modification and agreement referenced above.

	Labor Hours	Labor Cost	Subcontractor	TOTAL	ROUNDED TOTAL
Task 3.1 - Investigating Alternative MW Locations	40	\$3,985.00	\$0.00	\$3,985.00	\$4,000
Task 3.2 - ROW Coordination and Permitting	71	\$5,965.00	\$0.00	\$5,965.00	\$6,000
Task 3.3 - Property Boundary Survey and Mapping	6	\$650.00	\$1,594.95	\$2,244.95	\$2,200
Task 3.4 - Communication with Landowners and Utility Locate	29	\$2,910.00	\$0.00	\$2,910.00	\$2,900
Task 3.5 - Additional Drilling Cost	0	\$0.00	\$3,808.09	\$3,808.09	\$3,800
TOTALS	146	\$13,510.00	\$5,403.04	\$18,913.04	\$18,900

Storage-Reservoir Irrigation Rights in the LPSNRD

The LPSNRD owns and operates a number of reservoirs across the District, many of which the NRD constructed for flood-control purposes. The NRD holds storage permits for these reservoirs, granted and administered by the Department of Natural Resources, which allow the NRD to store water behind the dams in these locations; storage permits do not give permission to use the water stored in reservoirs.

In the past, a number of landowners have approached the NRD to request permission to withdraw water from some of these reservoirs for irrigation. To do this, the NRD follows this process:

1. Obtain Board approval to enter into an irrigation agreement with the landowner.
2. Apply for storage-use permit from DNR to be allowed to use stored water for irrigation purposes. Because the NRD owns the reservoir, the NRD must also hold the storage-use permit on behalf of a landowner who wants to irrigate with the water.
3. Receive the storage-use permit from DNR.
4. Execute agreement with landowner, outlining the amount of drawdown allowed and number of acres to be irrigated, along with any other conditions specified in the DNR permit.
5. Collect an annual report from each landowner to document the amount of water withdrawn for irrigation and the lands to which the water was applied.

Following is a list of the reservoirs from which we currently allow irrigation. The oldest of these agreements date from the 1970; the most recent new permit was obtained in 2010. Note that this list represents the landowners who own the lands approved for irrigation under the storage-use permits that the NRD holds for the 15 above-listed reservoirs. Not every landowner is irrigating every year with reservoir water, depending on weather and crop needs.

Storage-reservoir irrigation permits in the LPSNRD

Reservoir	Storage use appropriation	Acres irrigated	Drawdown permitted (ft)	Volume permitted (ac-ft)	Names of landowners
Magee Reservoir	A-18715	2	2	0.1	Don Magee
North Oak 3-A	A-16140	52.8	3	100	Richard Komenda
North Oak 4-C	A-16139 A-17261	238	6.5	82.7 92.9	Michael Hula; Ted Bohac
North Oak 6-A	A-16165	40.5	4	n/a	Phillip Farber; Lavern Fortik
North Oak 6-B	A-14826	52.7	6	n/a	Rudolph Jakub; HIMAC Properties
Oak-Middle 63-D	A-16163	228.8	6	n/a	Richard Coufal; Bonnie Andrews; Shirley Culwell
Oak-Middle 66-A	A-16571 A-17731	87.22	3 3	n/a 21	John Kozisek; David Benes
Oak-Middle 82-B	A-14827	13.8	2.5	n/a	Robert Kunasek
Oak-Middle 86-A	A-16321	128.7	6	n/a	Turtle Creek; Daniel Kouma; Rick Malander
Oak-Middle 87-A	A-14824	20.7	5	n/a	Robert Kunasek
Ruhge Road Structure 2	A-16557	78	5	n/a	Ronald Baxter; R&P Baxter Land
Upper Salt 35-A	A-14825	46.4	5	n/a	Sharon Harlan Trust
Weeping Water 4-J	A-14523 A-18233	273.5	n/a 4.4	16 42	R&P Baxter Land; Baxter Brothers Partnership
Weeping Water 15-B	A-17206	43.41	6.8	30.7	Lori & Jerome Dworak

Total reservoirs with storage-use permits: 15

Total landowners covered by storage-use permits: 24