Memorandum

BURNS McDONNELL

EXHIBIT 41

Date: September 24, 2015
To: Mr. Toby Dougherty
From: Brian Meier
Subject: R9 Ranch Conceptual Development Summary

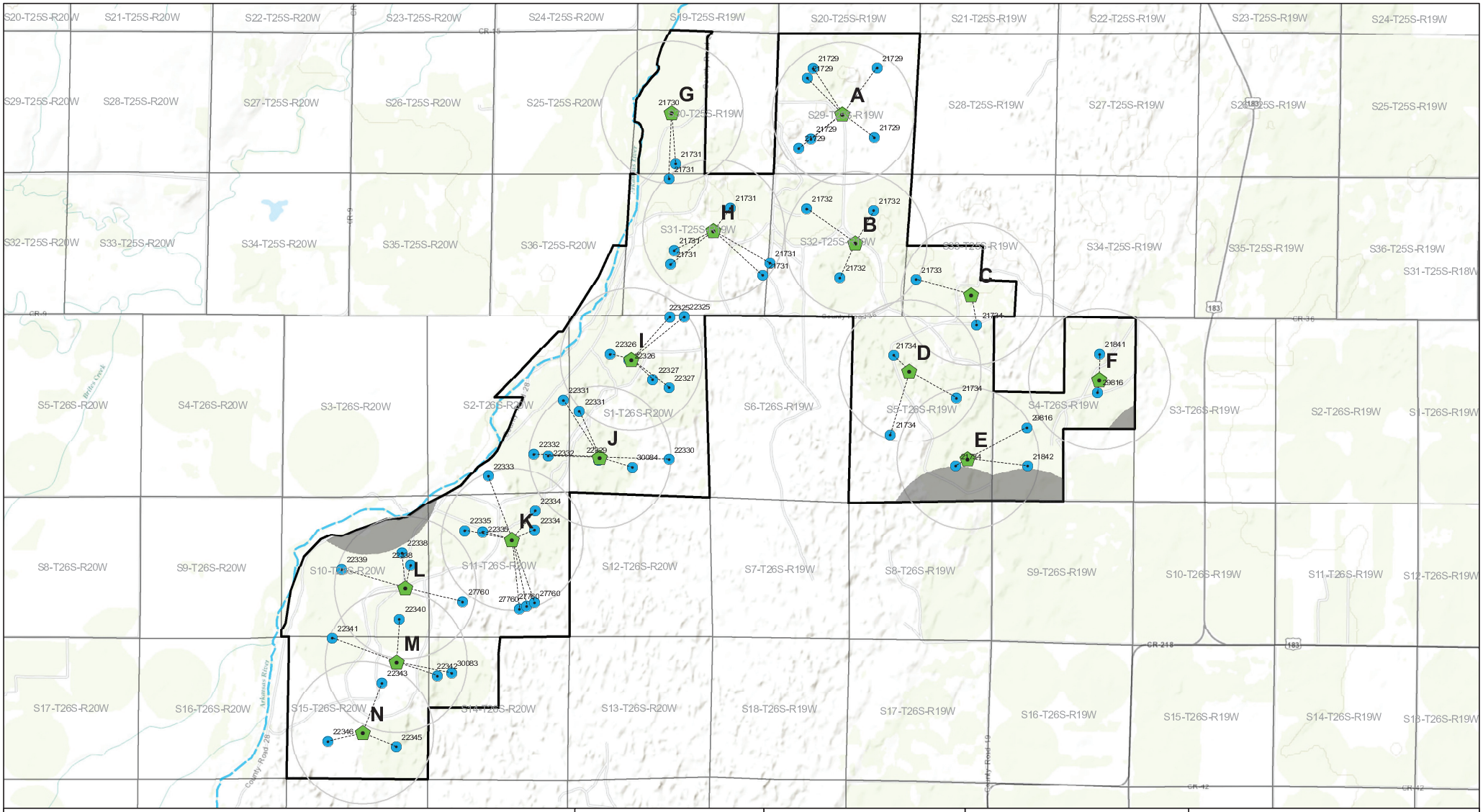
The R9 Ranch was acquired for development as a supplemental water supply resource for the Cities of Hays and Russell as well as other potential regional participants. The water rights on the R9 Ranch are and have always been utilized for irrigation. A review of the existing water rights and irrigation well capacities on the Ranch indicate that the permitted annual quantities and available well yields are viable for development as a long-term municipal water resource.

Photo 1 - Center pivot system located on the R9 Ranch

This memo generally lists the project elements and required infrastructure associated with developing the R9 Ranch as a municipal water supply well field, in addition to general descriptions of essential project features at the preliminary planning level.

Total initial average projected capacity of the R9 Well Field (R9WF) is approximately 4.0 million gallons of water per day (MGD) and is planned to be completed in phases. Further development and future capacity will also be considered to meet additional growth and regional demands. Full development of the Ranch involves installation of 10 to 14 public water supply wells, well houses, power distribution, raw water collection piping, a water storage tank and a high service pump station (HSPS). Figure 1 illustrates a preliminary wellfield layout.

The largest piece of required infrastructure will be a new 65-mile pipeline, which will tie into the existing Hays Smoky Hill River Well Field (SHRWF) pipeline near Schoenchen, KS. The SHRWF is also the area where a pipeline connection will be made to deliver water to the City of Russell raw water collection system.


Legend
Proposed Municipal Wells (A-N)
Existing R9 Ranch Points of Diversion
1/2 Mile Buffer Around Proposed Wells
Water Rights Consolidation Lines
Area Excluded From Proposed Wells
River Centerline
R9 Ranch Property Boundary
PLSS Sections
1:40,000
N
0 0.25 0.5 1
Miles
HAYS KANSAS
BURNS McDONNELL
Figure 1

Construction of the R9WF will be in phases with a 4.0 MGD average daily production capacity utilizing 10 to 14 wells by the third phase. This phased approach and associated infrastructure is described in Table 1 below. Planning and development will consider the entire project, so that infrastructure constructed in early phases will incorporate design features to accommodate the future potential development capacity of later phases.

Table 1 - Anticipated Required Infrastructure

Phase	Yield MGD	Wells Required	Transmission Pipeline	Pump Stations	Storage Tanks	Collection Piping	Power Distribution	Civil Improvements
I	2.0	6 - 8	65 Miles	1	1	Yes	Yes	Yes
II	1.0	2 - 4	None	None	None	Yes	Yes	Yes
III	1.0	2	None	None	None	Yes	Yes	Yes

Phase 1 wells will be constructed in the north and eastern portions of the Ranch where investigations have identified the area as having the highest potential with respect to both water quantity and quality. Phase 2 wells and infrastructure will be constructed in the central area of the Ranch, and Phase 3 will be in the southwest portion.

Wells

New wells will comply with Kansas Department of Health & Environment (KDHE) Public Water Supply (PWS) regulations. Expected lithology includes unconsolidated sands, gravels, and intermittent clays obtained from the Arkansas River Alluvium and reworked High Plains/Ogallala aquifer.

The concept design for the new public water supply wells at the Ranch anticipates drilling and construction of gravel packed wells completed with 18-inch diameter screen and casing installed concentrically in a 30-inch diameter borehole. Groundwater quality samples obtained from observation wells on the Ranch, and existing irrigation wells indicate the groundwater has potential corrosive characteristics. To protect against corrosion and increase expected well life, wells will be constructed utilizing PVC casing and column pipe as well as stainless steel wire-wrapped screen. A stainless steel submersible pump and motor combination is recommended to reduce required maintenance and increase equipment longevity.

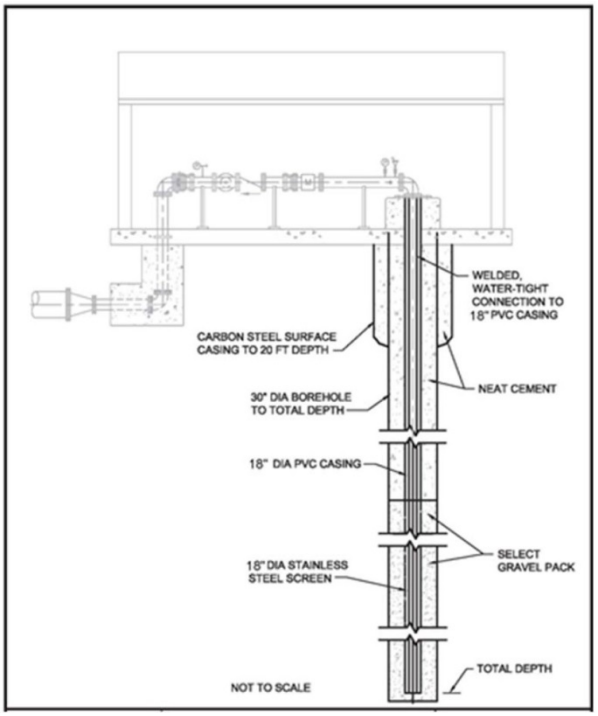


Photo 2 – Typical well construction diagram

Well Houses

The conceptual design for the well houses is a basic concrete structure sized to accommodate the required equipment for operation, maintenance, and control of each well. Concrete well house construction provides the required durability for the sandy environment and isolated conditions found at the Ranch. The well houses will be secured with a lockable metal door and will enclose items such as:

- Motor Control Centers
- Variable Frequency Drives
- Flow meters
- Check valves
- Isolation Valves
- Testing Tees
- Sample ports
- Pressure gages
- Communication Equipment
- Air relief valves
- Supervisory Control and Data Acquisition system (SCADA) controls

Photo 3 – Example SCADA screen interface

Three phase, 480-volt power is required to operate the submersible pumps and motors. A variable frequency drive (VFD) controller will be used to adjust the speed of the pump motors and provide flow control. VFD's provide many benefits for operation of a well system, including: maximum power efficiency, the ability to control drawdown, increased motor life, and decreased power loading on startup. Ninnescah Electric Cooperative, whose service area covers a substantial portion of the Ranch, has indicated they require VFDs on 35 horsepower and greater motors within their service area.

SCADA

SCADA data will be transmitted to a central location on the Ranch that will then relay the data to the main water treatment plant (WTP) in Hays. Other SCADA requirements, such as door alarms and leak detection, will be examined during the detailed design process.

Typical SCADA controls include:

- Remote Well Start-Stop
- Flow Rate Indications
- Water Level Feedback
- Remote Valve Control
- Storage Tank Levels
- Line Pressure Monitoring

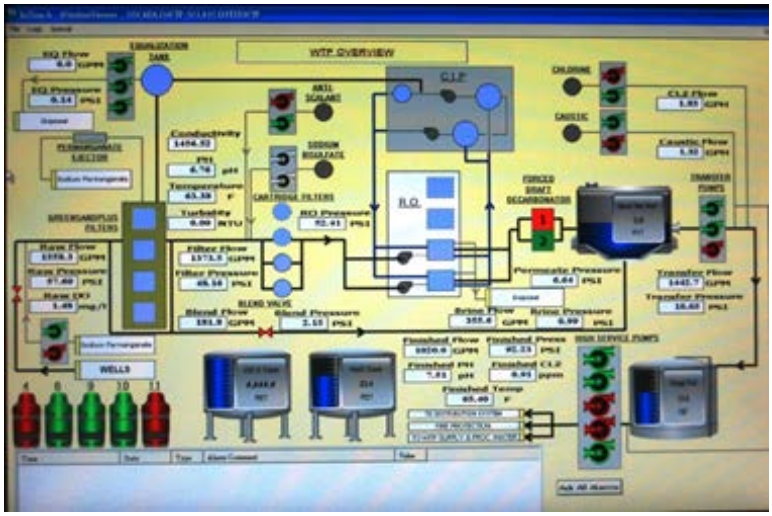


Photo 4 – Example SCADA screen interface

Power Distribution Network

The Ranch is located in the service areas of two electrical cooperatives, Ninnescah Electric Cooperative and Victory Electric. Based on discussion with these electric providers, power for the wells will have to be supplied by the respective co-op in the coverage area where the well is physically located. Power lines supplying the wells will likely be installed as overhead lines and will generally follow the same route as the well site access roads.

Construction cost, maintenance, and others factors will be considered prior to finalizing electrical distribution construction parameters. In addition to the power lines, transformers will be required at each well location. Upgrades to the co-op owned substation may be required, dependent on the total electric load at the time of development.

Access Roads

Access roads will be required to reach each of the well locations. The access roads will likely be gravel or graded sand construction and must support vehicles for construction and maintenance of the wells, power lines, and pipelines. Road design and construction will be compatible with the intended use as well as the highly dynamic and erodible surface conditions that exist at the Ranch.

Raw Water Collection System

The raw water collection system on the Ranch will convey the water from the newly constructed municipal wells to the storage tank. Pipeline sizes depend on the amount of flow required and the resulting pipe hydraulics. The collection system pipes will likely range from 6 to 12-inches in diameter, and be constructed of PVC or ductile iron. Flow velocity, head loss, material cost and expected material lifetime will determine the pipeline materials. Pipelines will likely follow the same alignment as the access roads within the Ranch boundaries to simplify maintenance and access.

Raw Water Storage Tank

The concept design includes an above ground, 1.0 million gallon storage tank for flow control at the Ranch. The tank is anticipated to be constructed of glass-lined bolted steel or pre-cast concrete.

High Service Pump Station

It is currently projected that a single pump station will be required. The pump station is expected to have the following features:

- Custom-built station with a prefabricated below grade enclosure with electrical control systems;
- Four pumps in each station (3 duty pumps, one standby);
- A monorail crane for pump installation and removal through hatches placed above each pump;
- Variable frequency drives for each pump;
- Telemetry system to communicate with existing system;
- Back-up power generator/source and appropriate site security measures

Photo 5 - Example of a High Service Pump Station

R9WF Monitoring Network

An existing network of monitoring wells constructed on the Ranch in the mid 1990's is currently being used to monitor water levels and to collect water quality data. It is anticipated that the existing monitoring network or a potentially expanded monitoring network will be used to facilitate future data collection.

Raw Water Transmission Pipeline

The water transmission line for R9WF development is projected to be 20 inches in diameter and approximately 65 miles in length. The use of either ductile iron pipe (DIP) or polyvinylchloride (PVC) pipe for the R9WF pipeline would be acceptable.

A water transmission pipeline will also be required to connect the City of Russell to the system. This pipeline will run from the Schoenchen area to Russell's Pfeiffer well field, and is projected to be 10 to 12 inches in diameter.

Photo 6 - Example of water transmission line construction and installation

Operation & Maintenance (O&M)

The currently planned operation of the R9WF is based on delivering a constant volume of water to supply a percentage of the base-load water requirements of both Hays and Russell. The percentage of base-load is expected to fluctuate depending on the condition of other available water resources. The total annual quantities produced are expected to increase as demand grows. Supplemental base demand and peaking requirements will be satisfied from other existing water supply sources.

Operation of wells in the R9WF will be rotated based on observed water levels, mechanical considerations, and maintenance requirements. This will ensure that all of the wells are operated regularly to exercise the mechanical equipment.

Final Notes & Discussion

Note that the project elements identified in this memo are general in nature and are intended only as an outline of the required infrastructure anticipated with the development of the R9 Ranch as a municipal water supply well field. Specific project elements will be sized and designed during the engineering phase of the project.

BJM/BJM

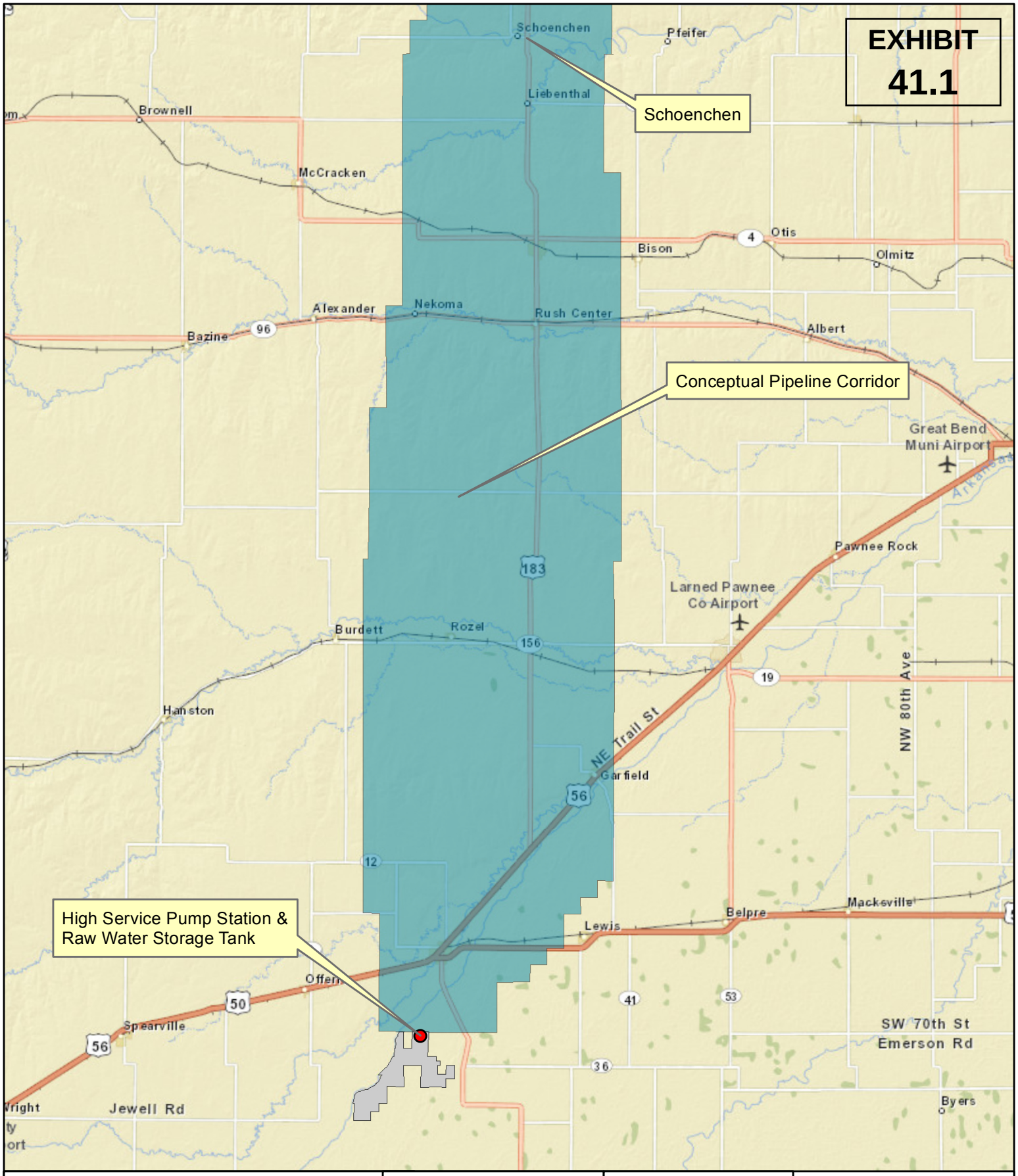


EXHIBIT
41.1
Schoenchen
Conceptual Pipeline Corridor
High Service Pump Station &
Raw Water Storage Tank
Schoenchen
Pfeifer
Liebenthal
Brownell
McCracken
Otis
Bison
Olmitz
Alexander
Nekoma
Rush Center
Albert
Bazine
96
Great Bend
Muni Airport
Pawnee Rock
183
Larned Pawnee
Co Airport
Burdett
Rozel
156
19
NW 80th Ave
Hanston
NE Trail St
Garfield
56
12
Belpre
Macksville
Lewis
Offerle
50
41
53
Spearville
56
SW 70th St
Emerson Rd
36
Jewell Rd
Byers
Conceptual Pipeline Corridor
R9 Ranch Property
1:475,000
0
5
Miles
N
HAYS
KANSAS
BURNS
McDONNELL

EXHIBIT
41.2

BURNS McDONNELL

R9 Ranch
Conceptual Development

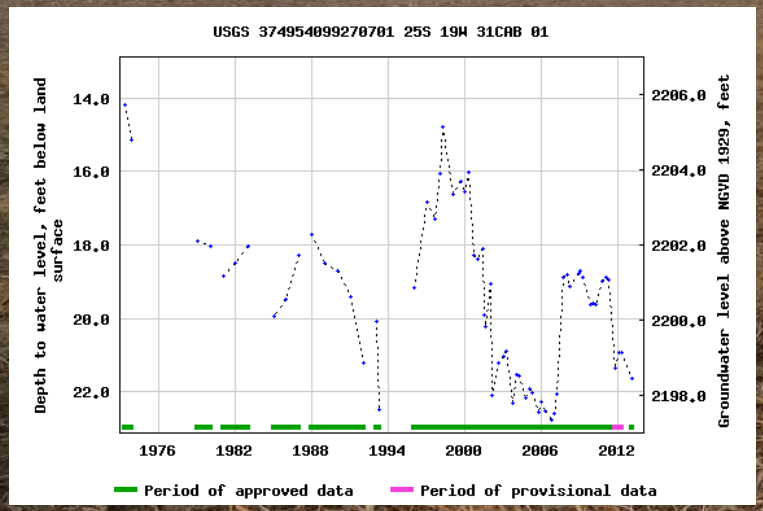
City of Hays, Kansas
City of Russell, Kansas

Project No. 76663

R9 Ranch Data Collection

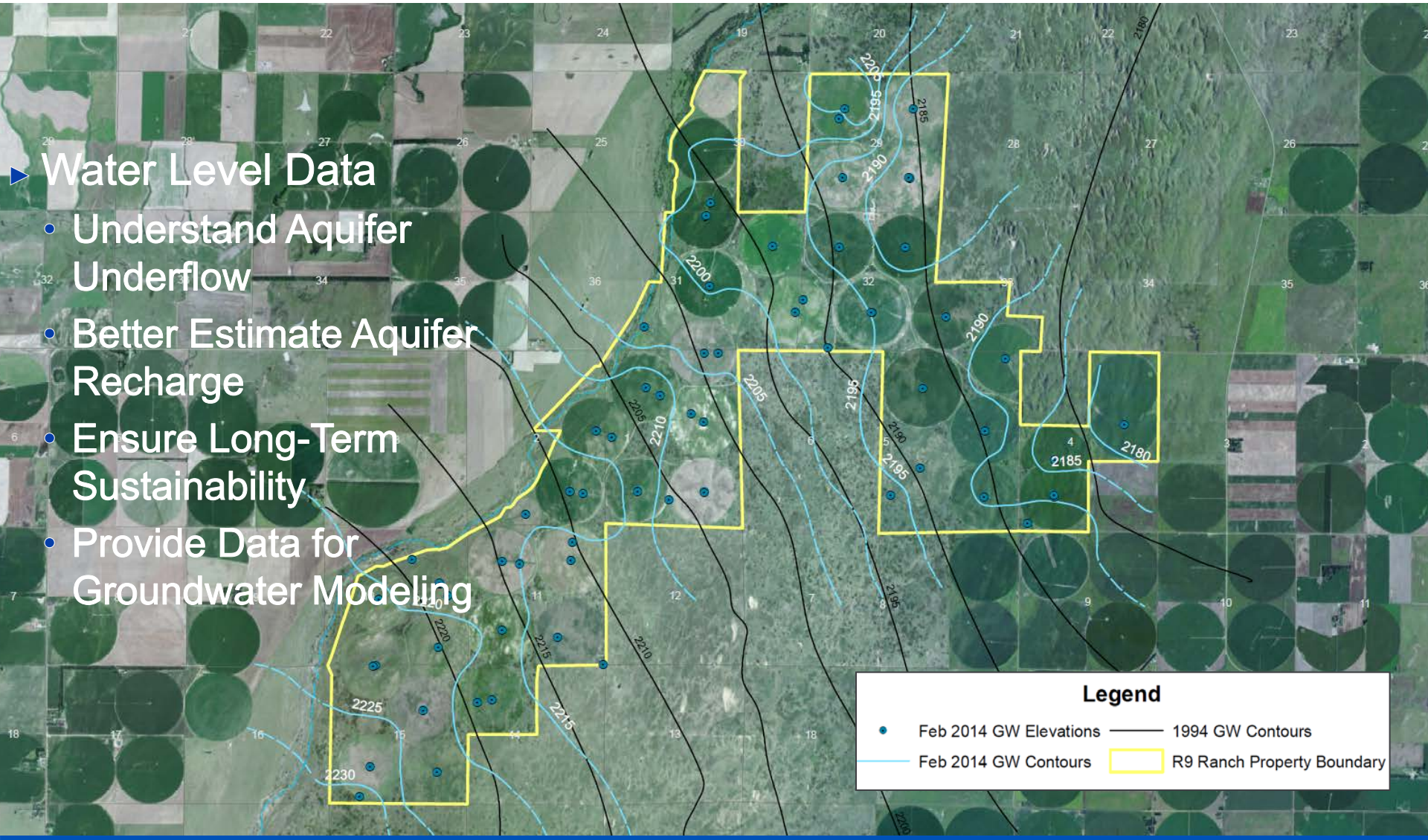
Resource Evaluation

- Water Level Data
  - Quarterly Measurements
  - Examine short and long term trends
  - Better understand aquifer health



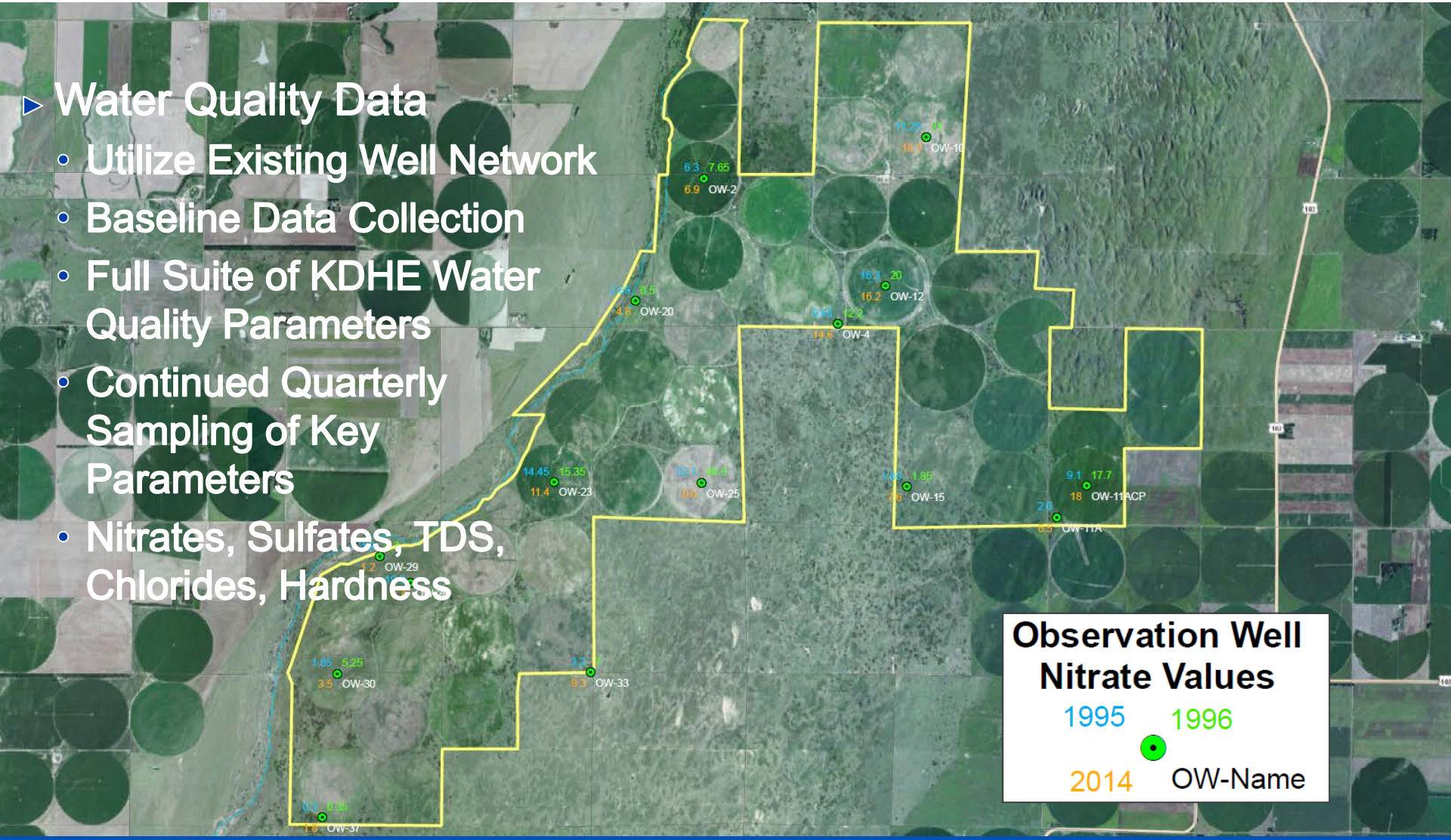
R9 Ranch Data Collection

- Water Level Data
  - Understand Aquifer Underflow
  - Better Estimate Aquifer Recharge
  - Ensure Long-Term Sustainability
  - Provide Data for Groundwater Modeling



R9 Ranch Data Collection

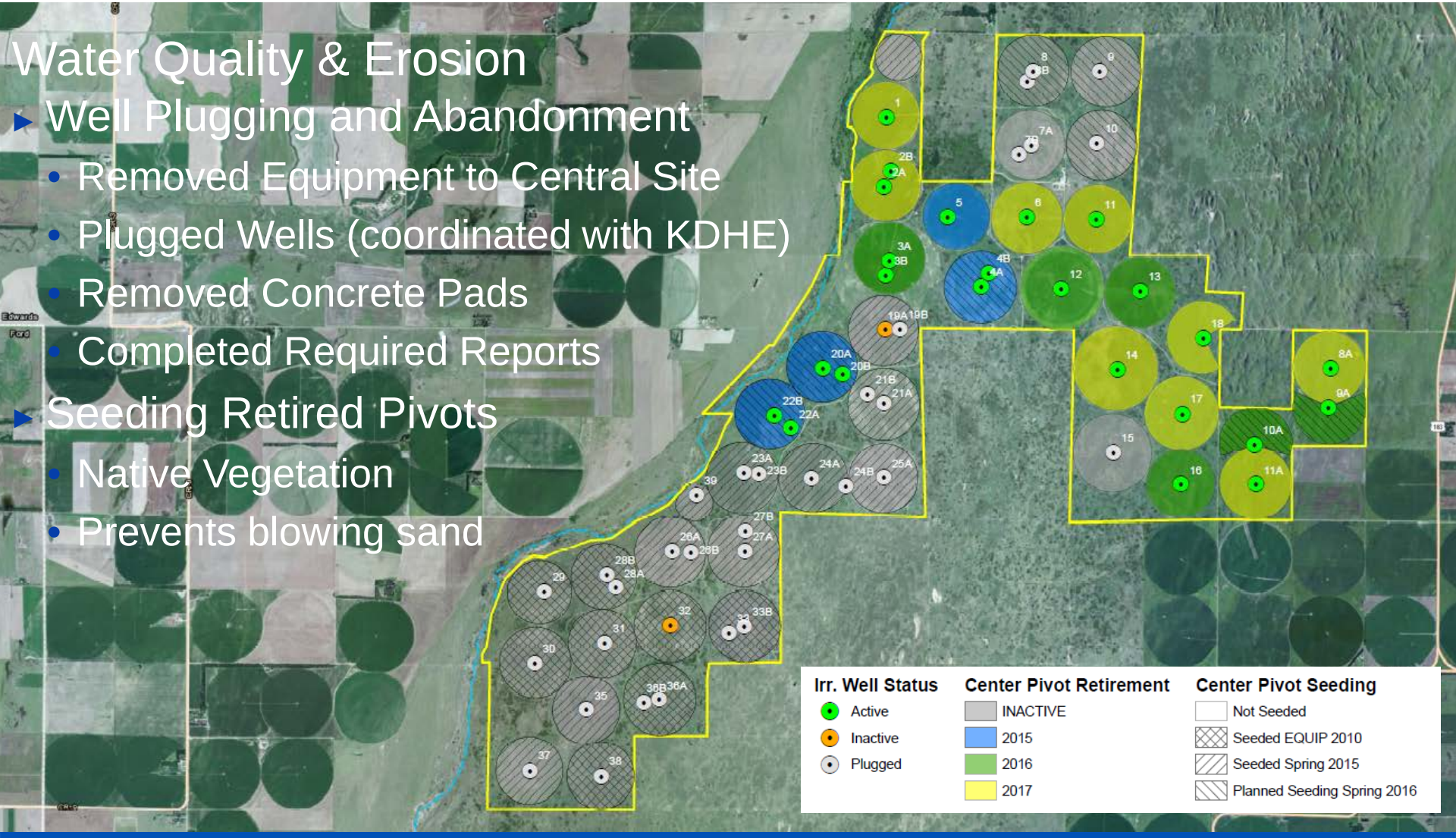
- Water Quality Data
  - Utilize Existing Well Network
  - Baseline Data Collection
  - Full Suite of KDHE Water Quality Parameters
  - Continued Quarterly Sampling of Key Parameters
  - Nitrates, Sulfates, TDS, Chlorides, Hardness



R9 Ranch Well Plugging & Erosion Protection

Water Quality & Erosion

- Well Plugging and Abandonment
  - Removed Equipment to Central Site
  - Plugged Wells (coordinated with KDHE)
  - Removed Concrete Pads
  - Completed Required Reports
- Seeding Retired Pivots
  - Native Vegetation
  - Prevents blowing sand



R9 Ranch Well Plugging

- Equipment Removal
  - Full Inventory Completed
  - Column Pipe
  - Pumps
  - Gear Drives
  - Meters
  - Shed Structures
  - Burial of Concrete Pads
  - Site Grading Restoration

R9 Ranch Well Plugging

- Well Plugging and Abandonment
  - Cutoff Casing 3 Feet Below Land Surface
  - Chlorinated Sand to Water Level
  - Concrete Grout to Surface
  - Return to Existing Grade
  - Completed KDHE Reports

R9 Ranch Conceptual Development Summary

- Multiple Phase Approach (3 phases)
- 20” Transmission Line
- High Service Pump Station
- Storage Tank
- Wells, Well Houses & SCADA
- Wellfield Collection Piping
- Monitoring Well Network
- Power Distribution
- Access Roads

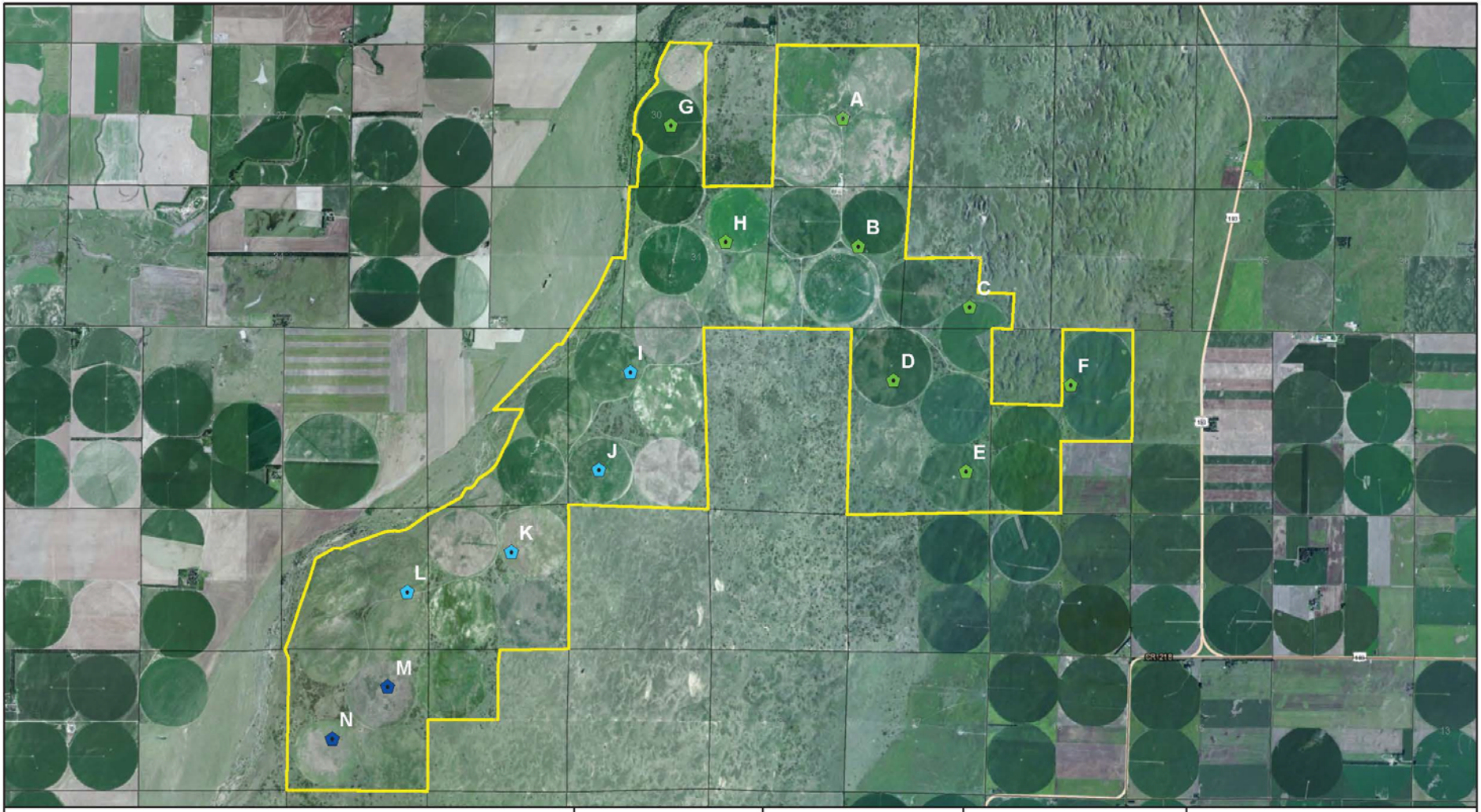
R9 Ranch Conceptual Development

Phased Development

Phase	Yield MGD	Wells Required	Transmission Pipeline	Pump Stations	Storage Tanks	Collection Piping	Power Distribution	Civil Improvements
I	2.0	6 - 8	65 Miles	1	1	Yes	Yes	Yes
II	1.0	2 - 4	None	None	None	Yes	Yes	Yes
III	1.0	2	None	None	None	Yes	Yes	Yes

- Phase I – 2 MGD
  - Eastern Half of the Ranch
  - Eastern areas have better water quality
  - Higher producing wells
  - Closer proximity to power network and planned storage tank
- Phase II – 1 MGD
  - Moving West/Southwest
- Phase III – 1 MGD
  - Southwest portion of Ranch

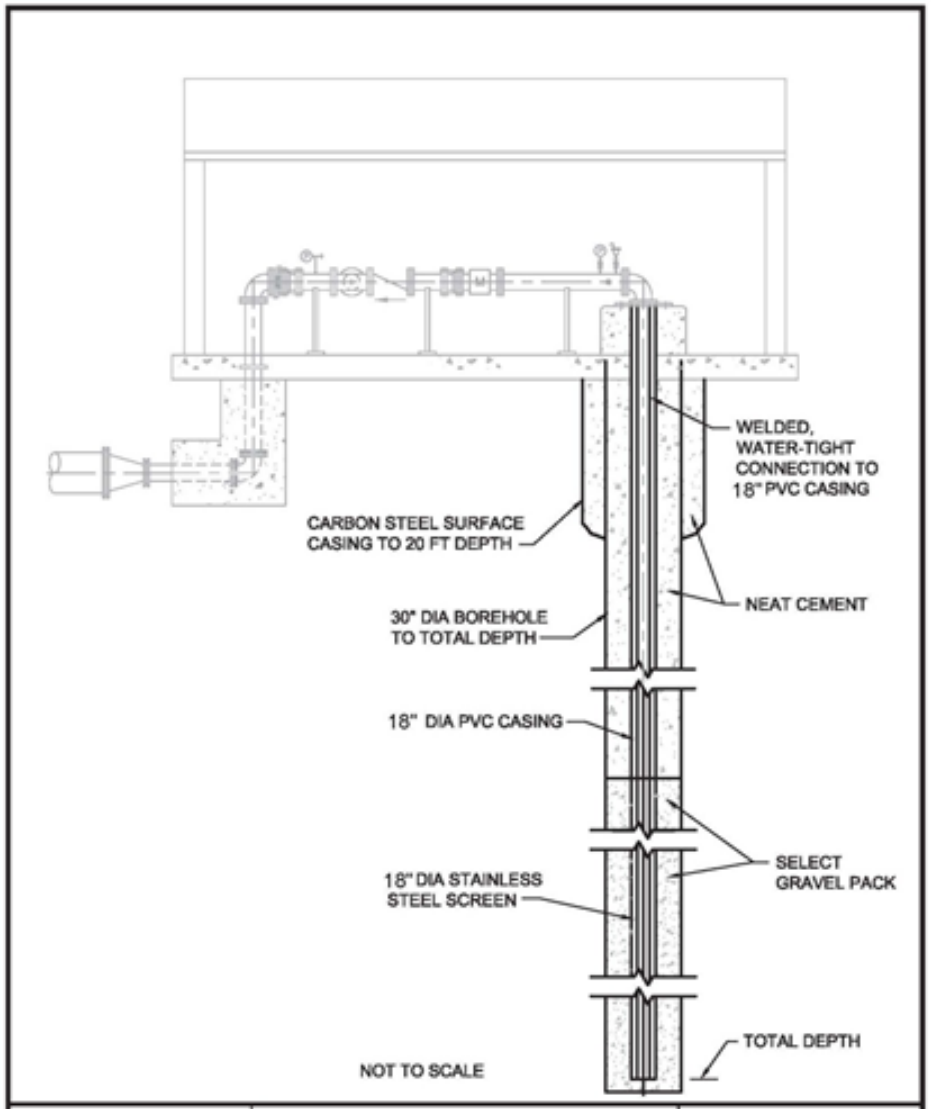
R9 Ranch Conceptual Development



R9 Ranch Conceptual Development

Groundwater Wells

- KDHE construction standards
- 18 Inch Diameter Casing
  - PVC Solid Casing
  - Stainless Steel Wire Wrap Screen
  - Resistance to Corrosion
- 30 Inch Borehole
  - Unconsolidated Sands & Gravels
  - Formation Contact
  - Shallow aquifer conditions
- Stainless steel submersible pump and motor combination
- Adjacent Monitoring Network



R9 Ranch Conceptual Development

Well Houses

- Basic Concrete Structure
  - Resistant to Harsh Environment
  - Remote Conditions and Maintenance
- Houses Include:
  - Motor Control Center
  - Flow Meter
  - Check Valves
  - Isolation Valves
  - Sample Ports
  - Pressure Gages
  - Air Relief
  - SCADA controls

R9 Ranch Conceptual Development

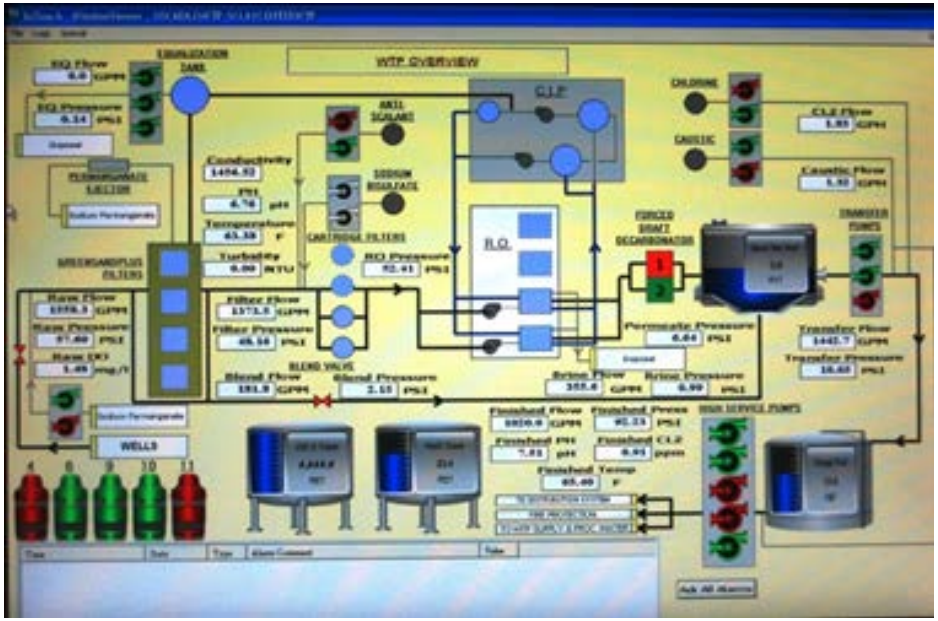
Well Houses – Electrical

- 480 Volt Supply
- Variable Frequency Drive (VFD)
  - Control Drawdown
  - Increased Motor Lifetime
  - Decreased Startup Load
  - Power Efficiency
- Ninnescah Electric Cooperative
  - Supplier for Phase I & II
  - Will require soft start or VFD

R9 Ranch Conceptual Development

SCADA

- Utilize centralized location on the Ranch for relay to WTP
- Typical Control Scheme
  - Remote well start/stop
  - Flow indications
  - Leak detection
  - Water Level Feedback
  - Line Pressure
  - Tanks Levels



R9 Ranch Conceptual Development

Power Distribution

- Ninnescah Electric
  - Phases I & II
- Victory Electric
  - Phase III
- Phase I – Ninnescah Electric
  - Preliminary costs based on OHP at $90K / Mile
  - Cities responsible for initial construction costs
  - Maintenance of secondary power
  - Upgrade to network between substation and HWY 183
  - Future exceedance of 5MW at substation

R9 Ranch Conceptual Development

Raw Water Collection

- Convey water from wells to new storage tank at north end of Ranch
- PVC or Ductile Iron
  - Consideration for maintenance
  - Resistance to Corrosion
  - Flow Velocities
  - Material Costs
  - Follow Access Roads

R9 Ranch Conceptual Development

Access Roads

- Access to each well house
- Power Line Maintenance
- Pipeline Maintenance
- Graded Sand Construction
  - Maintenance Consideration
  - Erosion Control
  - Weather Conditions

R9 Ranch Conceptual Development

Raw Water Storage Tank

- Above Ground Storage
- 1 Million Gallon Capacity
- Provides Flow Buffer
- Glass Lined Bolted Steel
- Pre-Cast Concrete

R9 Ranch Conceptual Development

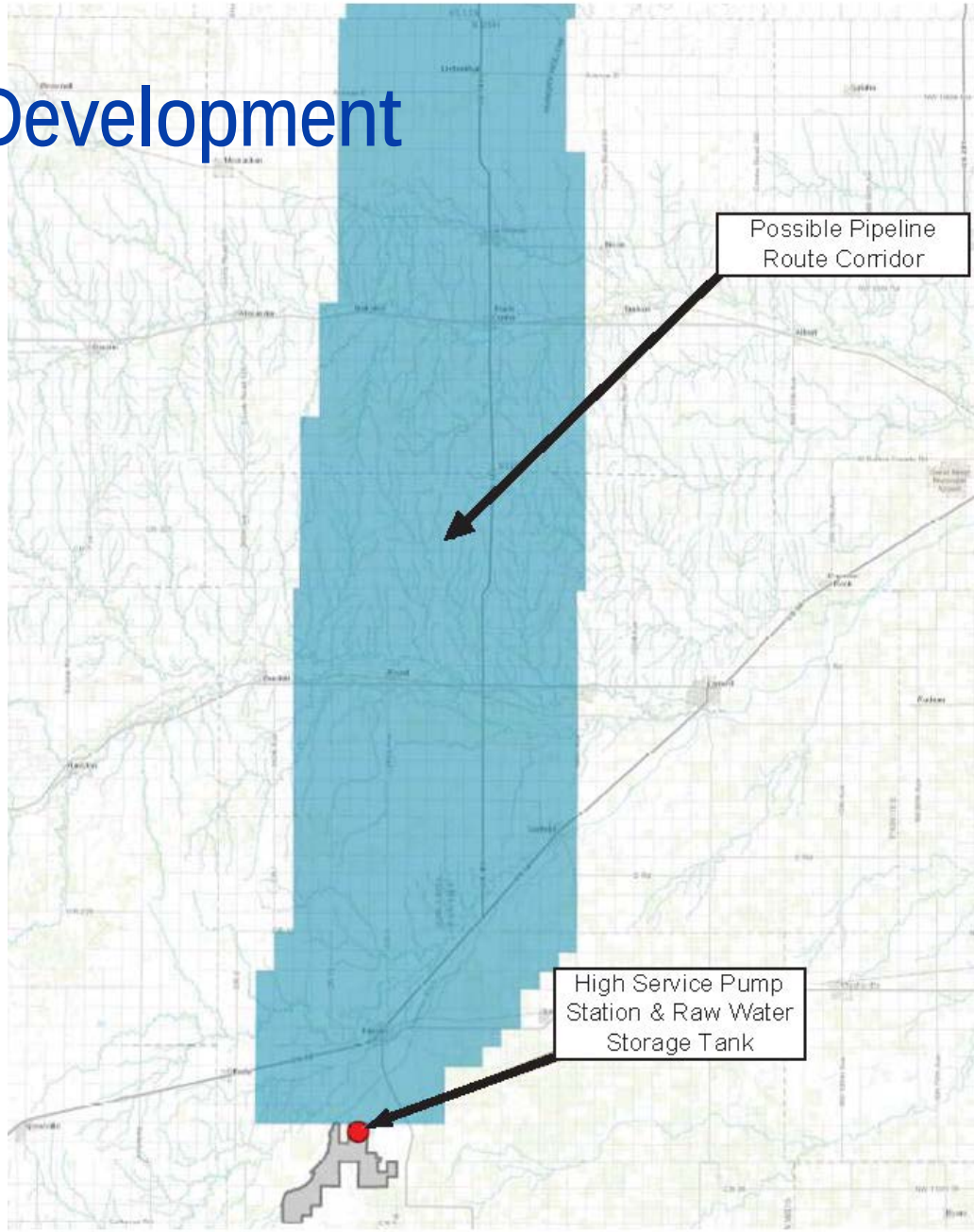
Water Transmission Line

- Approximately 65 miles from R9 Ranch to SHRWF
- Sized for full build out
  - Single HSP under curent design
- PVC or Ductile Iron

R9 Ranch Conceptual Development

Water Transmission Line

- Approximately 65 miles from R9 Ranch to Smoky Hill River Well Field
- Several Preliminary Routes Evaluated

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SM

EXHIBIT
41.3

Legend

- R9 Ranch Property Boundary
- R9 Ranch Center Pivots
- PLSS Section Numbers

Groundwater Rights by Priority

- Vested - 1974
- 1974 - 2013

1:45,000

N

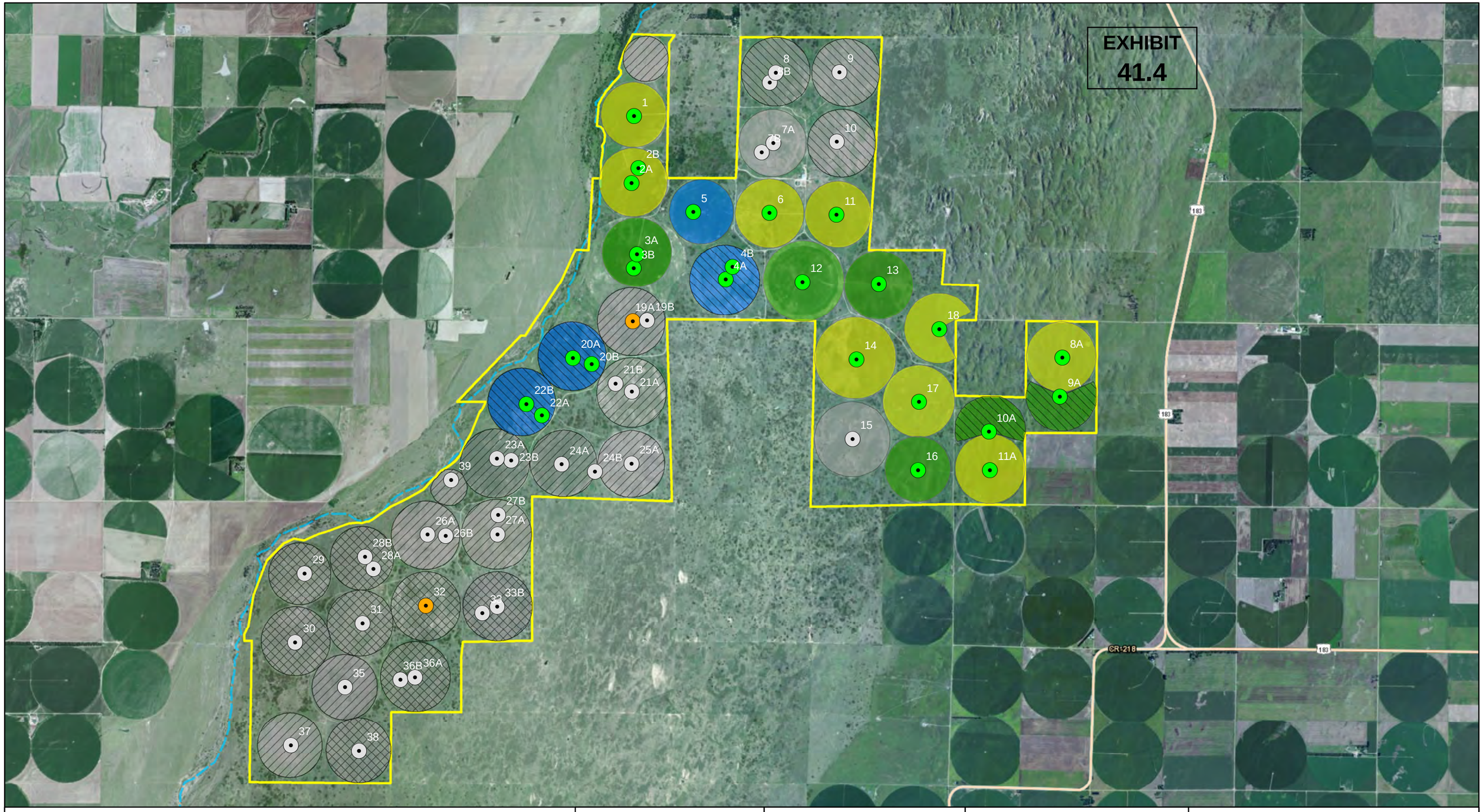
0 0.25 0.5 1 Miles

HAYS KANSAS

Burns & McDonnell SINCE 1898

Hays R9 Ranch Development
Groundwater Rights
Appropriation Numbers
DRAFT - January 9, 2014

EXHIBIT
41.4



Irr. Well Status
- Active
- Inactive
- Plugged

Center Pivot Retirement
- INACTIVE
- 2015
- 2016
- 2017

Center Pivot Seeding
- Not Seeded
- Seeded EQUIP 2010
- Seeded Spring 2015
- Planned Seeding Spring 2016

1:40,000

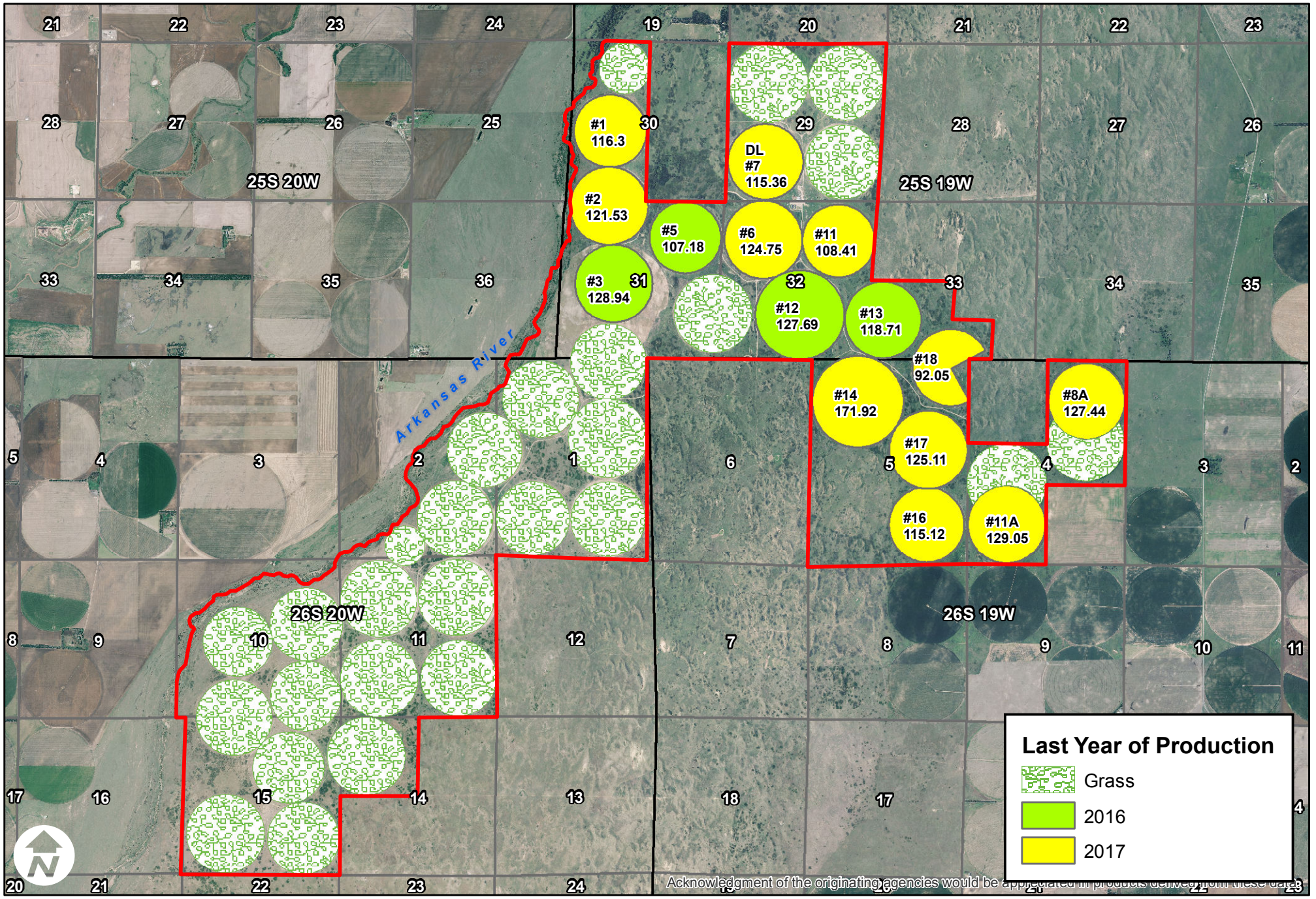
N

0 0.25 0.5 1 Miles

HAYS KANSAS

BURNS McDONNELL

2015 Seeding Inventory Map



Farmers National Company

EXHIBIT 57

Farm #18189
City of Hays/Russell
Edwards County, Kansas

Monty Smith, Farm Manager
Imagery Source: USDA NAIP 2014
Maps Are For Visual Aid Only
Boundaries Are Approximate