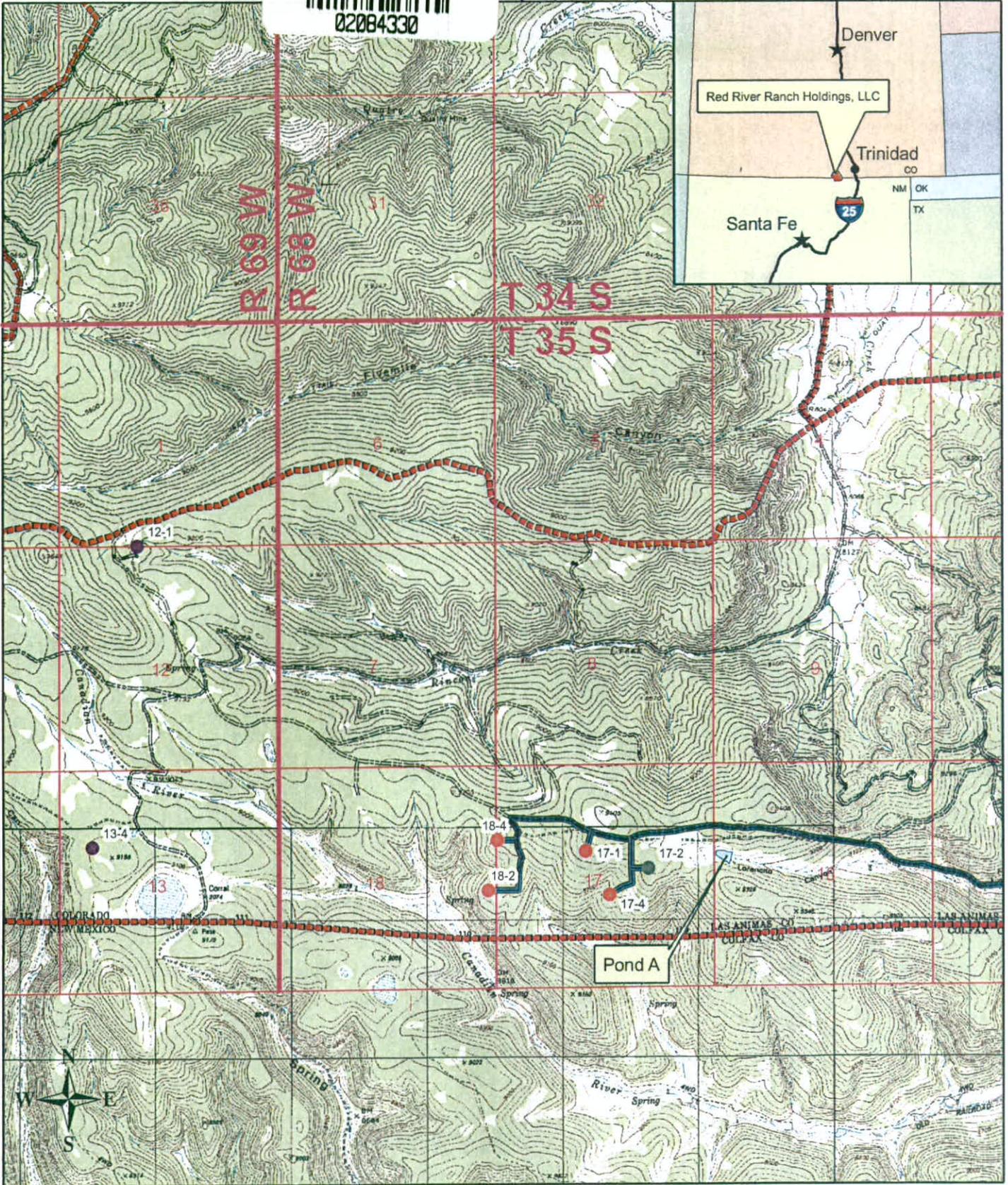




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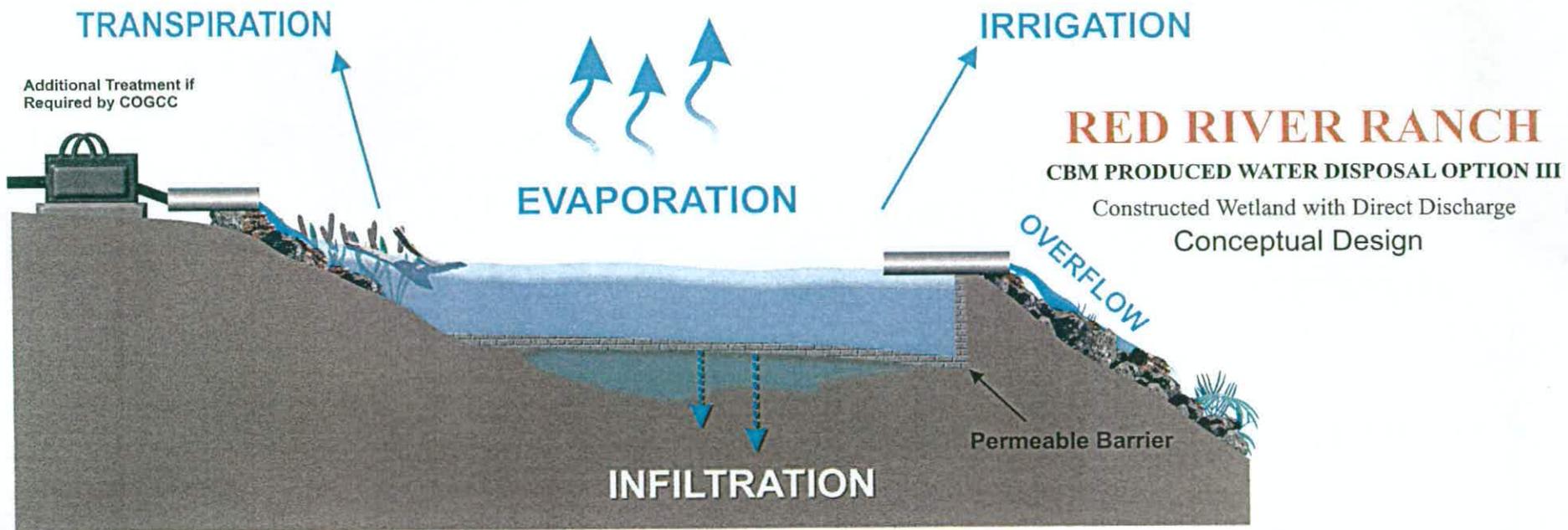


Red River Ranch Holdings, LLC - Las Animas County, CO Proposed CBM Development Project Location Map A

- Future Well
- 2005 Well
- Test Well
- Road
- Gas Line
- Lease Boundary
- Section Line
- Production Pond / Constructed Wetland



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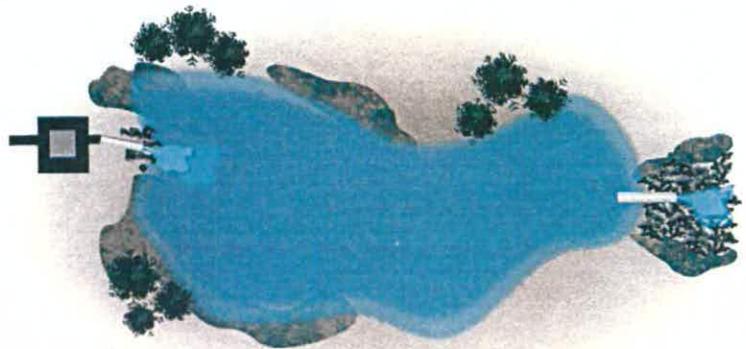


RED RIVER RANCH
CBM PRODUCED WATER DISPOSAL OPTION III
 Constructed Wetland with Direct Discharge
 Conceptual Design

Figure depicts a constructed wetland for collection of produced water for direct discharge to surface waters

Benefits include: low capital costs, low maintenance costs, some evaporation and infiltration, treatment, storage of water for irrigation, wildlife watering, and high aesthetic value.

Disadvantages include: high design costs, does not treat SAR, high sampling/monitoring costs, some odor.



PLAN VIEW

Red River Ranch Holdings, LLC
 Tercio Ranch
 15850 County Road 13
 Weston, CO 81091

ae
 C.A. Environmental Consulting
 11 Inverness Way South
 Englewood, CO 80112



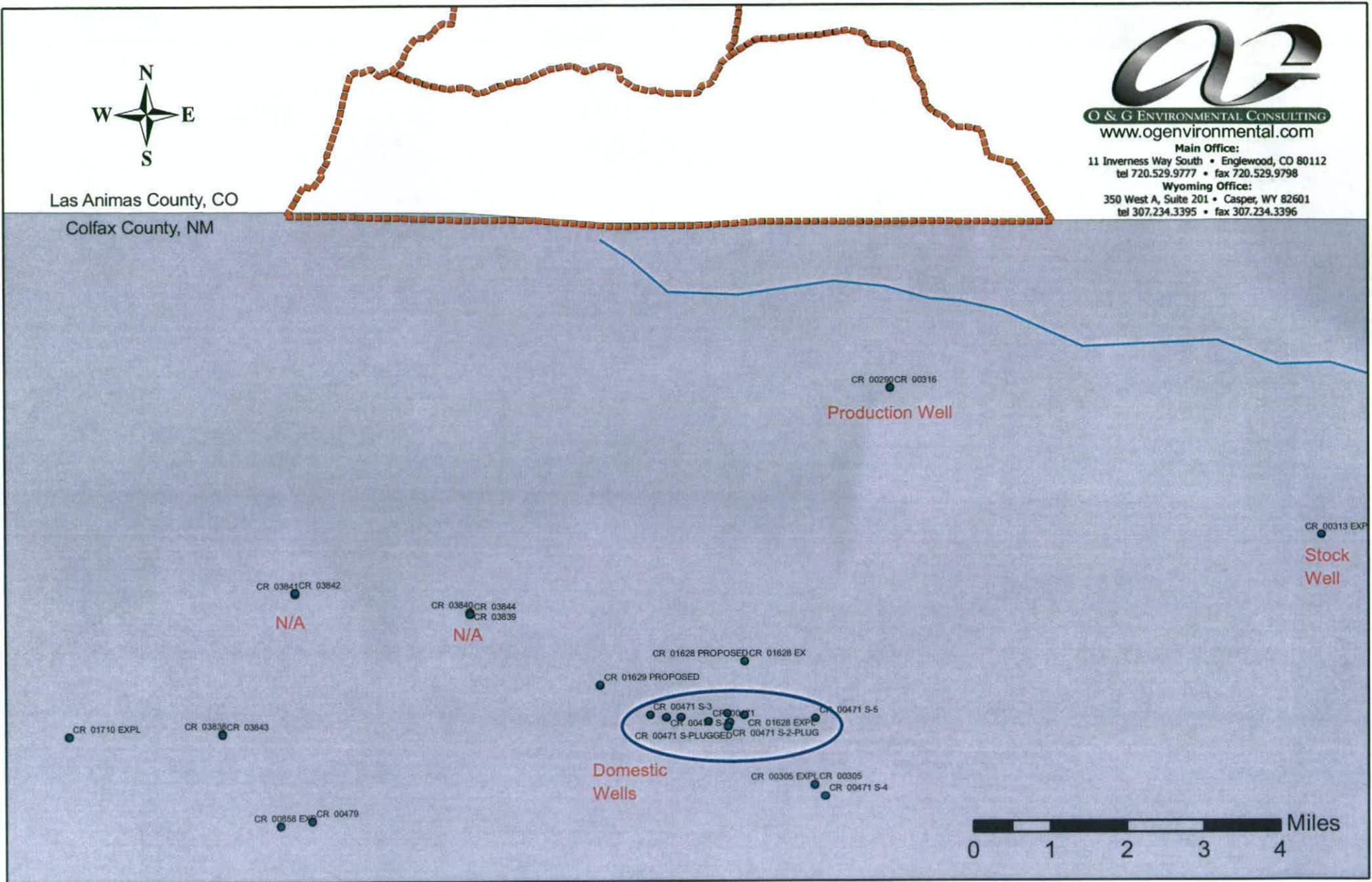
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Las Animas County, CO
Colfax County, NM



- CanadianRiver_NM
- Lease Boundary
- New Mexico Wells

Red River Ranch Holdings, LLC Proposed CBM Development Project: Las Animas County, CO Adjacent New Mexico Wells



Layer List
Legend
Search
Results
Quick Zoom

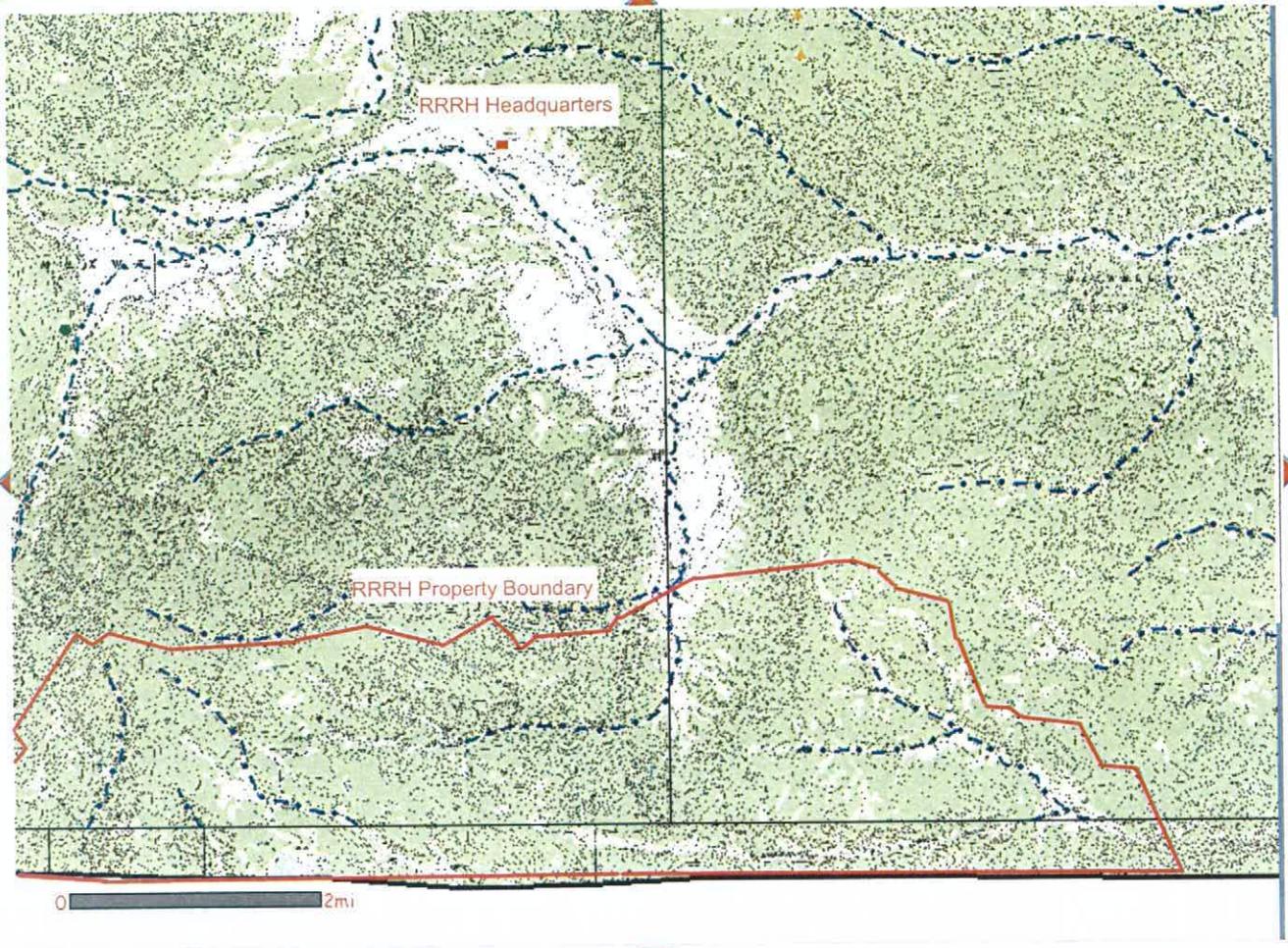
Legend
Well Permit
(2/1/06)*

- ▲ Well - Dist Sect Line
- ▲ Well - Quartered
- ▲ Well - User Supplied GPS
- Structure
(11/17/04)*
- Headgate
- Jurisdictional Dam
- Minimum Flow Reach
- Non-Jurisdictional Dam
- Reservoir
- Well or Well field
- ★ Gage
- Township
- - - River
- Lake
- Division
- County
- State Boundary
- Topo 24K

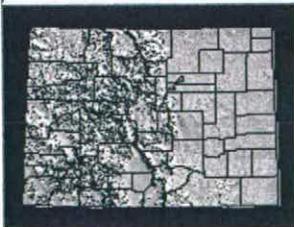
Note: No water wells were identified.



HELP CONTACT



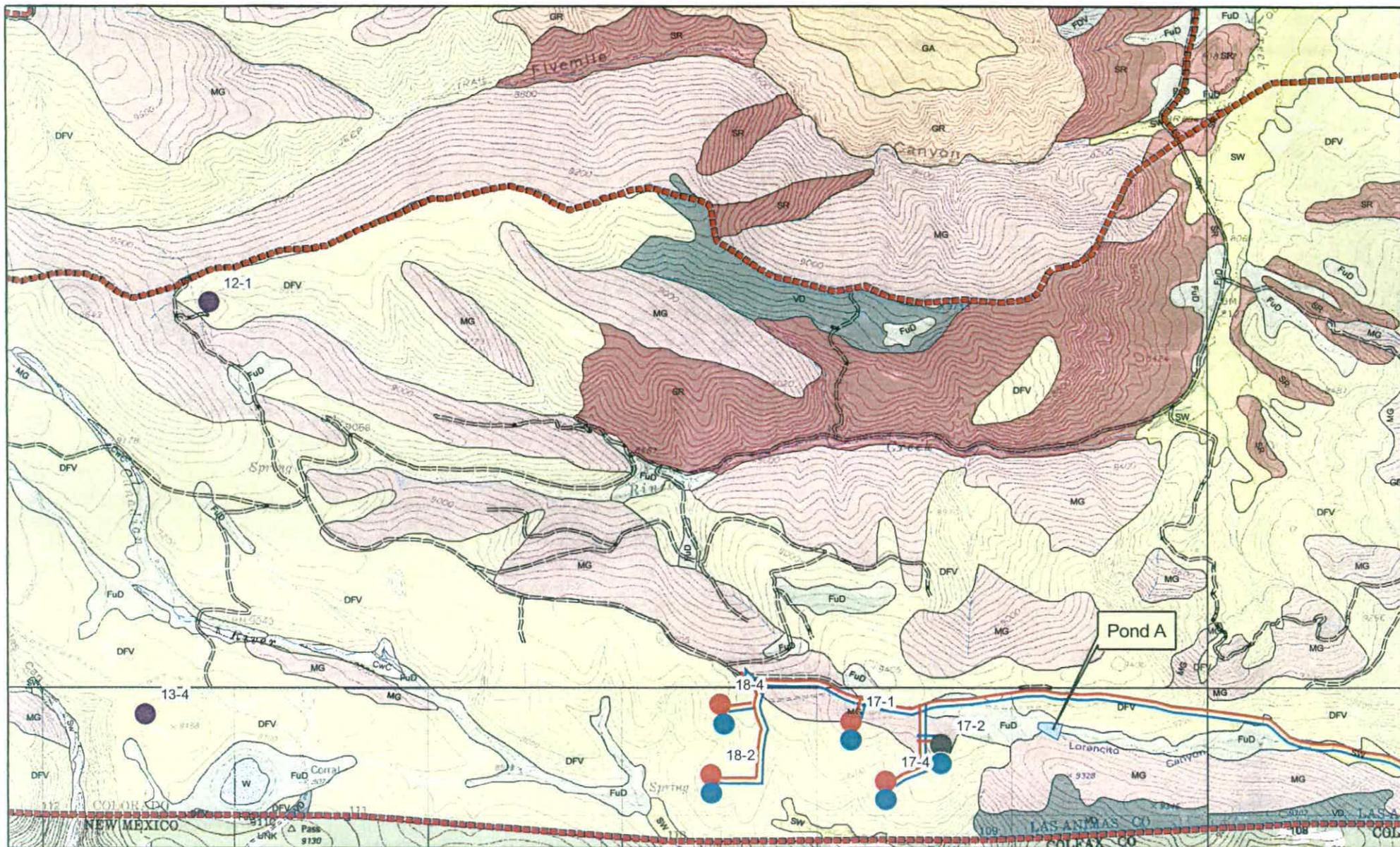
Map Scale 1:76479* (Map Scale is approximate due to difference in monitor displays)
[extra-large map](#) | [large map](#) | [medium map](#) | [small map](#)



Soil Types Located within the RRRH CBM Project Area

See Soils Map, also in Appendix A.

Soil Type Name	Soil Type Symbol	Description
Fuera-Dargol-Vamer complex	DFV	10 to 45 percent slopes, is comprised of Fuera soils (35 percent), Dargol soils (30 percent), Vamer soils (20 percent), and minor components (15 percent). The major component soils are well drained. They have an impermeable to slow permeability, a very low to moderate water capacity, and a moderate to high shrink-swell potential. They belong to a very high runoff class.
Bandarito clay loam	FuD	3 to 9 percent slopes, is comprised of Bandarito soils (85 percent) and minor components (15 percent). The major component soil is well drained. It has a slow permeability, high water capacity, and high shrink-swell potential. It belongs to a high runoff class.
Gulnare-Rock outcrop complex	GR	15 to 50 percent slopes, very stony, is comprised of Gulnare soils (60 percent), rock outcrop (25 percent), and minor components (15 percent). The major component soil is well drained. It has a moderately slow permeability, a very low water capacity, and a low shrink-swell potential. It belongs to a high runoff class.
Tercio-Graneros complex	MG	15 to 40 percent slopes, is comprised of Tercio soils (60 percent), Graneros soils (30 percent), and minor components (10 percent). The major component soils are well drained. They have a very slow to slow permeability, a low to moderate water capacity, and a low to moderate shrink-swell potential. They belong to a very high runoff class.
Saruche-Rombo-Rock outcrop complex	SR	25 to 50 percent slopes, is comprised of Saruche soils (40 percent), Rombo soils (35 percent), rock outcrop (15 percent), and minor components (10 percent). The major component soils are well drained. They have an impermeable to slow permeability, a very low to low water capacity, and a high shrink-swell potential. They belong to a very high runoff class.
Molinaro loam	Sw	2 to 12 percent slopes, is comprised of Molinaro soils (90 percent) and minor constituents (10 percent). The major component soil is well drained. It has a moderate permeability, high water capacity, and low shrink-swell potential. It belongs to a medium runoff class.
Dargol-Stout-Vamer complex	VD	1 to 9 percent slopes, is comprised of Dargol soils (40 percent), Stout soils (25 percent), Vamer soils (20 percent), and minor components (15 percent). The major component soils are well drained to somewhat excessively drained. They have an impermeable to moderately rapid permeability, very low to low water capacity, and a low to high shrink-swell potential. They belong to low to very high runoff classes.



Red River Ranch Holdings, LLC
 Proposed CBM Development Project
Soil Survey Data
 LAS ANIMAS COUNTY, CO

- Test Well
 - Future Well
 - 2005 Well
 - Water Collection Station
 - Gas / Water Lines
 - Road
 - Lease Boundary
 - Production Ponds / Constructed Wellands
- Soil Components***
- | | | |
|-----|----|----|
| DFV | GA | SR |
| FDV | GR | SW |
| FuD | MG | VD |

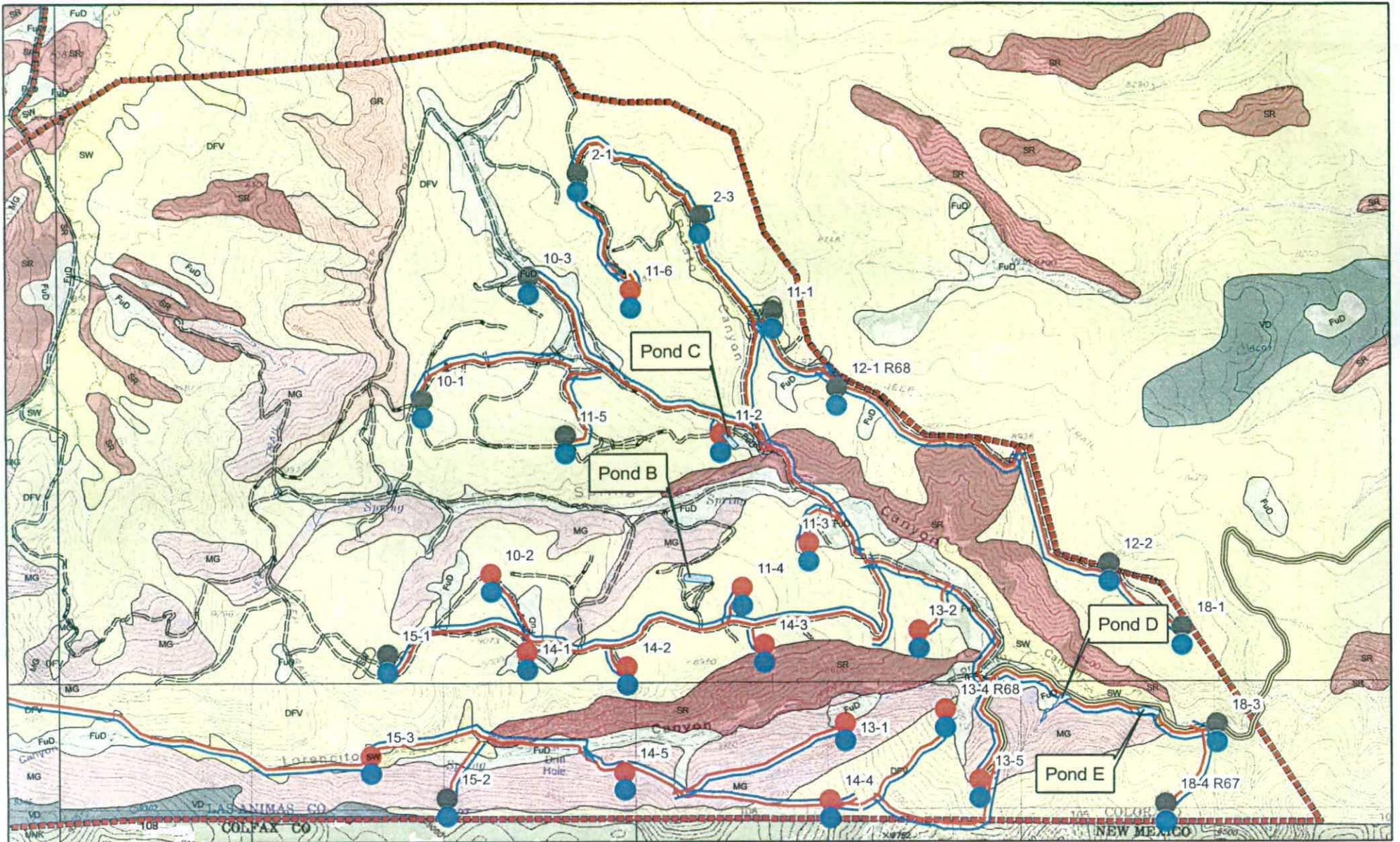
* Reference Soils Table in Appendix A



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Red River Ranch Holdings, LLC Proposed CBM Development Project Soil Survey Data

LAS ANIMAS COUNTY, CO

- Production Ponds / Constructed Wells
- Gas / Water Lines
- Road
- Lease Boundary
- Sales Line
- Future Well
- 2005 Well
- Water Collection Station

Soil Components*

DFV	GA	SR
FDV	GR	SW
FuD	MG	VD

* Reference Soils Table in Appendix A



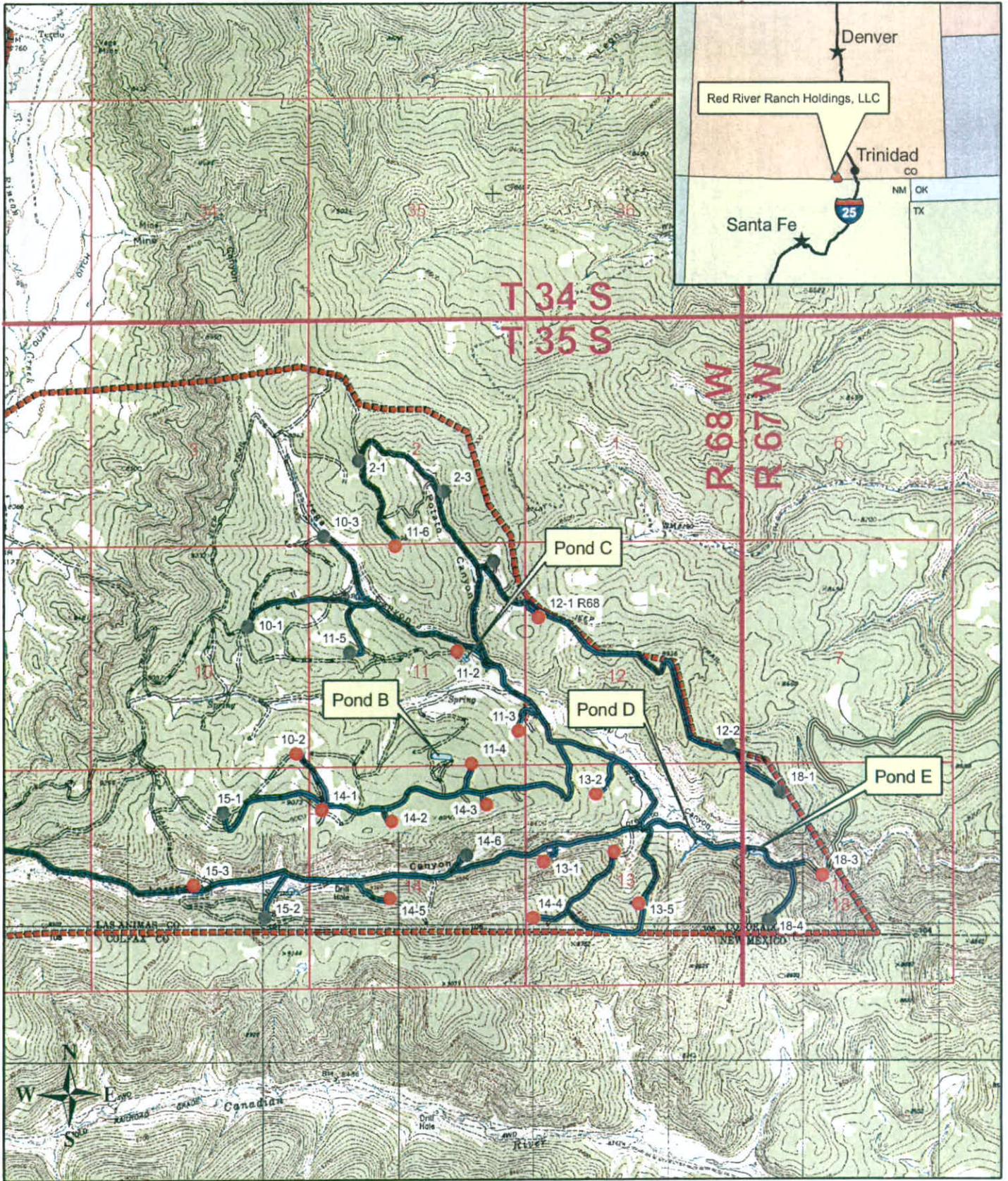
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Photograph 1: Lorencito Canyon (approximately 500 feet North of Pond D)



**Red River Ranch Holdings, LLC - Las Animas County, CO
Proposed CBM Development Project
Location Map B**

- Future Well
- 2005 Well
- Road
- Gas Line
- Sales Line
- Lease Boundary
- Section Line
- Production Pond / Constructed Wetland



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Red River Ranch Holdings, LLC
 Proposed CBM Development Project
Outfall Data
 LAS ANIMAS COUNTY, CO

- Produced Water to Pond A*
- Produced Water to Pond B*
- Produced Water to Ponds D&E*
- Production Pond Outfall
- Production Pond
- Gas & Water Lines
- Lease Boundary
- Sales Line
- Road
- Section Boundary

* A discharge point has been permitted at each well pad.

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