HydraWise Water Analysis Report

Project Overview

Project Name: Your Amazing Solar Project (e.g., Gravel Pit Solar)

Location: Santa Teresa, Doña Ana, New Mexico

Project: 150.0 MW Tracking Solar

Construction Period: 8 months

Data Confidence: 60%

Wells Analyzed: 1,474

Well Database Analysis

Total Wells in County: 17,976

Wells within 10 miles: 1,474

Typical Depth: 160 ft

Typical Yield: 50 GPM

Primary Aquifer: Mesilla Valley

Site Characteristics

Climate Type: Arid

Climate Description: Hot desert climate with very low annual rainfall and high temperatures.

Annual Precipitation: 9.7 inches

Evapotranspiration: Very High

Soil Type: Sandy

Soil Permeability: High

Soil Description: Sandy soil with good drainage, low fertility, and high permeability.

Drilling Difficulty: Moderate

Recommended Method: Rotary drilling

Common Challenges: Loose sandy soil, High temperatures, Low water availability

Water Demand Analysis

Total Demand: 99,008,000 gallons (374,786 m³) (374,786 m³)

Per MW: 660,053 gallons/MW

Daily Average: 618,800 gallons/day

Peak Daily: 928,200 gallons/day

Demand Breakdown:

- Dust Control: 61,224,028 gallons (61.8%)
- Compaction: 12,594,657 gallons (12.7%)
- Road Grading Dust Control: 6,559,717 gallons (6.6%)
- Other: 6,297,329 gallons (6.4%)
- Road Base Compaction: 6,297,329 gallons (6.4%)
- Concrete: 3,673,442 gallons (3.7%)
- Road Surface Treatment: 2,361,498 gallons (2.4%)

Model Parameters:

- Climate Factor: 1.55

- Soil Factor: 1.00
- Project Type Factor: 1.30
- Base Demand/MW: 85,000 gallons

Water Source Options

Recommended Option: New Well Drilling
Total Cost: $540,000

Cost per Gallon: $0.019

Cost per MW: $3,600

All Options Analyzed:

- New Well Drilling: $540,000 ($0.019/gal) - RECOMMENDED
- Public Utility: $799,717 ($0.008/gal)
- Municipal Hauled: $1,392,140 ($0.049/gal)
- Trucked Water: $2,032,483 ($0.021/gal)

Cost Analysis

Total Project Cost: $540,000

Cost per Gallon: $0.019

Cost per MW: $3,600

Risk Assessment

Overall Risk Level: Medium

High Risks:
• **Well Capacity:** Typical wells yield 50 GPM but project needs 295 GPM

Medium Risks:
• **Cost Uncertainty:** Data confidence is only 60%

Key Recommendations

1. RECOMMENDED: New well drilling at $0.0191/gallon is the most cost-effective option
2. High water demand (660,053 gal/MW) - implement water conservation measures

Next Steps

1. Initiate permitting process if proceeding
2. Conduct test well if data confidence is low
3. Engage local drilling contractors for quotes
4. Begin water rights application process
5. Schedule risk mitigation workshop with project team

Local Water Sourcing Contacts

■ **Water Districts:**

- Camino Real Regional Utility Authority
  - 575-589-1075
  - https://www.crrua.org/
- Doña Ana Mutual Domestic Water Consumers Association
  - 575-526-3491
  - https://www.dawater.org/

■■ Well Drilling Contractors:

- Balleau Groundwater, Inc.
  - 505-892-3436
  - Service Area: Statewide, including Doña Ana County
- Merrill Drilling & Water Systems
  - 575-526-9321
  - Service Area: Statewide, including Doña Ana County

■■ Regulatory Agencies:

- New Mexico Office of the State Engineer
  - Water Rights Division
  - 505-827-6091

■ Water Rights Resources:

- New Mexico Water Rights Reporting System (NMWRRS)
  - https://nmwrrs.ose.state.nm.us/nmwrrs/public.html
  - New Mexico Office of the State Engineer, Water Rights Division, 505-827-6091