

**SUBJECT: SUCCESSFUL RECHARGE PILOT RESULTS - SITE A**

**Executive Summary** We have received preliminary data from the pilot test conducted on December 2, 2025, at a “Site A” (located just south of Comanche Creek, on the east side of Dayton Road, and south of the mobile home park - see attached map). The results are highly encouraging. The data indicates that the site’s hydrogeology is suited for high-volume subsurface recharge. Additionally, recent surface testing indicates the site possesses exceptional permeability rates that far exceed standard expectations.

**Key Findings from the Pilot Test** The engineering team ran a constant injection test at 80 gallons per minute (gpm) into a short trench segment (see attached Cross-Section). The resulting hydrographs (attached) provided three critical confirmations:

1. **High Intake Capacity:** The trench water levels stabilized quickly (at ~2.7 feet depth) and did not overflow. This indicates the soil can accept water as fast as we injected it.
2. **Confirmed Aquifer Connection:** Approximately 10 hours into the test, monitoring wells showed a clear rise in groundwater levels. This proves the injected water is not getting stuck in shallow clay layers but is successfully recharging the target aquifer.
3. **Rapid Drainage:** Once pumping ceased, water levels dropped at a rate of 40–90 feet per day. This high permeability suggests the system can handle significant storm flows without backing up.

**Surface Verification (New Data)** Following the trench test, the team conducted a surface infiltration test in the site’s pond area. Initial results are consistent with the subsurface data, showing an infiltration rate of approximately 45 vertical feet per day. This is an exceptional rate, confirming the presence of highly permeable subsurface strata.

**Scalability** Based on these metrics, the team model that a full-scale build-out (4,000 feet of drain line) on this 100-acre site could handle:

- **Flow Rate:** Up to **4,000 GPM**
- **Daily Volume:** Up to **17 Acre-Feet per day**

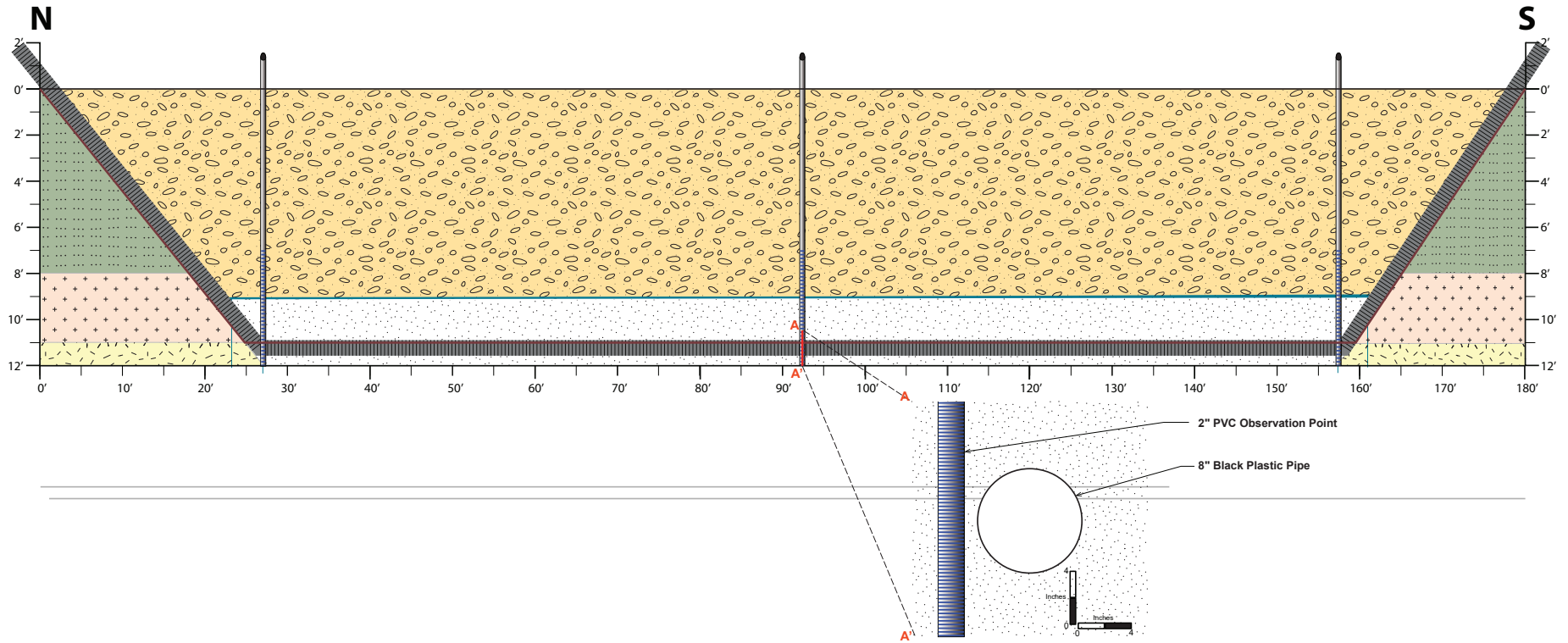
*Note: These projections assume linear scaling and will include safety factors, but even conservative estimates (around 8 to 12 acre-feet per day) place this project as a significant contributor to our sustainability goals.*

**Strategic Next Steps & Phase 2 Testing** With the landowner’s approval, we are moving immediately to Phase 2 to capture data during upcoming storm events:

1. **Sediment Load Test:** We plan to direct actual floodwaters into both the pond and the tile drain system. This will provide critical “real world” data on how the system manages native sediment loads and what filtration designs will be necessary for long-term operations.
2. **FloodMAR Comparison:** The landowner has authorized a Flood-Managed Aquifer Recharge (FloodMAR) test. We will flood a designated portion of the field to generate comparative data between the high-speed tile drain system and traditional surface spreading.
3. **Regional Hub Evaluation:** We continue to evaluate the southern acreage as a “Sedimentation & Distribution Hub” to support these high-volume flows.

This pilot validates the "Reverse Tile Drain" concept as a viable, land-efficient tool for the Subbasin. We look forward to presenting a more detailed engineering report shortly.

# GREF Cross-Section



Legend	
	Top of Surface
	Trench
	8" Black Plastic Pipe
	1/4" Ground Cloth
	Cross Section Line
	Backfilled Material
	SP-SM
	SM
	ML
	Gravel
	2 inches PVC Observation Point
	5 ft screen

**Explanations**  
ft: feet

**GREF Cross-Section**

Violic Property,  
2100 Dayton Rd,  
Chico CA

**Geosyntec**  
consultants

Oakland

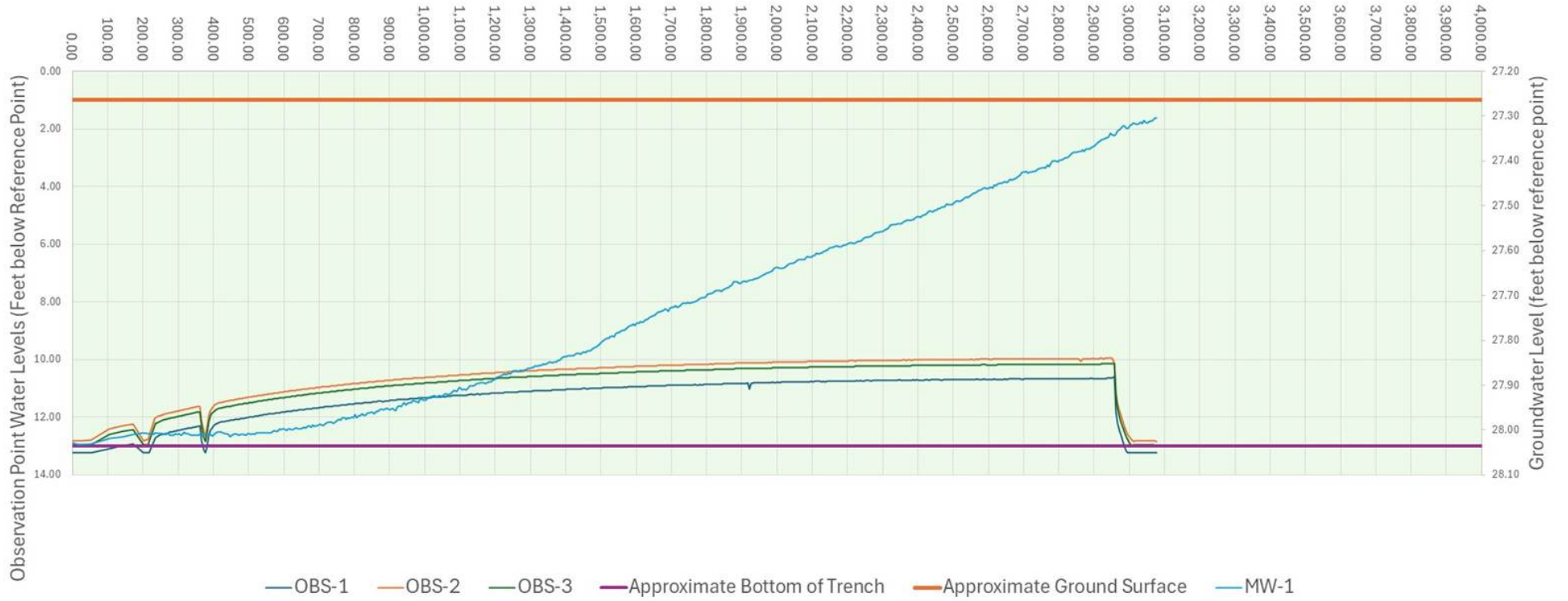
October 2025

**Figure**

**1**

Hydrographs  
Violich Pilot Test - Reverse Tile Drain

Minutes





**Dayton Road**

**Comanche Creek**

**Comanche Creek**

**Site A**

**Hegan Lane**

**Dayton Road**

AKER  
HRYN  
UISE

Private Road

JUANARENA  
DANIEL P  
REVOCABLE  
LIVING  
TRUST

Barber

GORRILL  
LAND  
COMPANY

ANDERSON  
FAMILY  
TRUST

CASEY  
STEPHEN  
IRREVOCABLE  
TRUST

CSU CHICAGO  
RESEARCH  
FOUNDATION

C & C  
RANCHES  
LP

BERTAGNA  
FAMILY  
TRUST  
ETAL

HENGST  
JACK'E  
ETAL

ENCISO  
JESUS  
TRUST

ANDREWS  
MCCANNON  
LIVING  
TRUST  
ETAL

Wainwright Street

West  
West

Little Chico Creek

Dayton Road

Hegan Lane

Dayton Road

Hegan Lane