Project Overview System Type: Trona Soda Ash Thickener Underflow Dewatering System

Location: Salt Lake City, Utah

Material: Trona soda ash tailings (dense mineral slurry)

Flow Rate: 10,000 GPM slurry

Dry Solids Throughput: 1,965 TPH

Estimated Slurry Specific Gravity: 1.428

Estimated Moisture Content (by weight): 45%

Estimated Solids Content (by weight): 55%

System Flow Description Inlet Stage:

- Feed: Thickener underflow slurry @ 10,000 GPM
- Dry Solids Feed: 1,965 TPH
- Routed to 3 x 2.4 million gallon carbon steel storage tanks with agitators (12 hr total retention)

Storage & Mixing:

- 3 tanks (80 ft diameter x 65 ft height)
- Agitators: 2–3 per tank; estimated 2,000–3,000 HP/tank

Filter Press Stage:

- Slurry pumped from tanks to filter presses via high-pressure pumps
- Filter Press Output: 85% solids cake
- Clear filtrate returned to process water tanks
- Filter Press Quantity: 13 units (each ~1500 m^2 area)
- Compressed Air System: Integrated for cake drying

Cake Discharge and Conveying:

- Filter cake (2,311.9 TPH) to 48-inch belt conveyor
- Conveyor equipped with rip detectors, misalignment switches, pull cords

Instrumentation and Controls:

- Tanks, pumps, and conveyor fitted with standard level, pressure, and flow instrumentation