

A Containerized Desalination Solution For Chanavayita, Chile



rwlwater.com

RWL
WaterSM

A Desalination Solution for Chile

Caleta Chanavayita, I Region



Chanavayita, Chile is a remote fishing village and beach town 50km south of Iquique in the Atacama Desert.



Atacama Desert, Chile



**Over 43,000,000 m³/d of
seawater is desalinated
worldwide (7.9M GPM)**

**Chile desalicates
approximately 120,000 m³/d
for potable use (22,000 GPM)**

Agua Potable Rural (APR) Initiative

- Northern Chile suffered lack of clean drinking water and a public water network
- Local residents forced to install rooftop water storage tanks
- APR assists local governments with rural water needs
- Provides independent, small-medium desalination plants for small communities



Challenges at Chanavayita

- Rocky coast and soil
- Earthquake zone
- Local intake/discharge regulations
- Remote location with limited services



- Limit civil construction
- Cost/risk of site-built construction
- Maximize recovery
- Robust, reliable solution

The Chanavayita Solution

1080m³/d (285,000 GPD) SWRO

Scope of Work:

Three (3) beta-Nirobox @ 15m³/h (66gpm)

- Seawater intake and feed pump station
- Ultrafiltration pre-treatment
- Flexible production capacity
- Remineralization meets local drinking water standards
- Six (6) months operation prior to local operation



The Chanavayita Solution



The Chanavayita Solution



- Successful completion in November 2013 following testing & 6 month O&M period
- Survived 2014 8.2-magnitude earthquake and tsunami as sole plant providing safe drinking water
- A standard for future projects

The Chanavayita Legacy

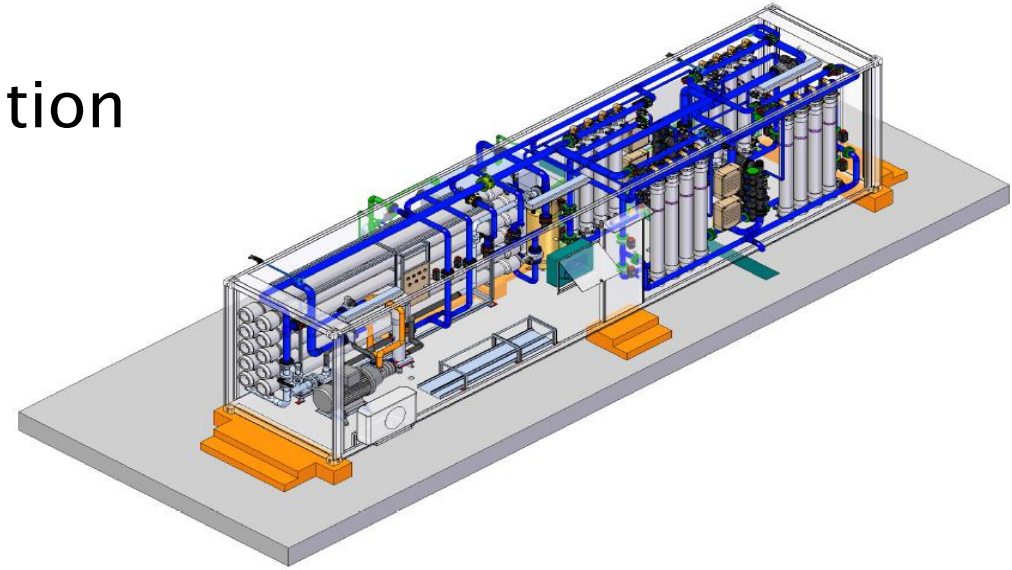
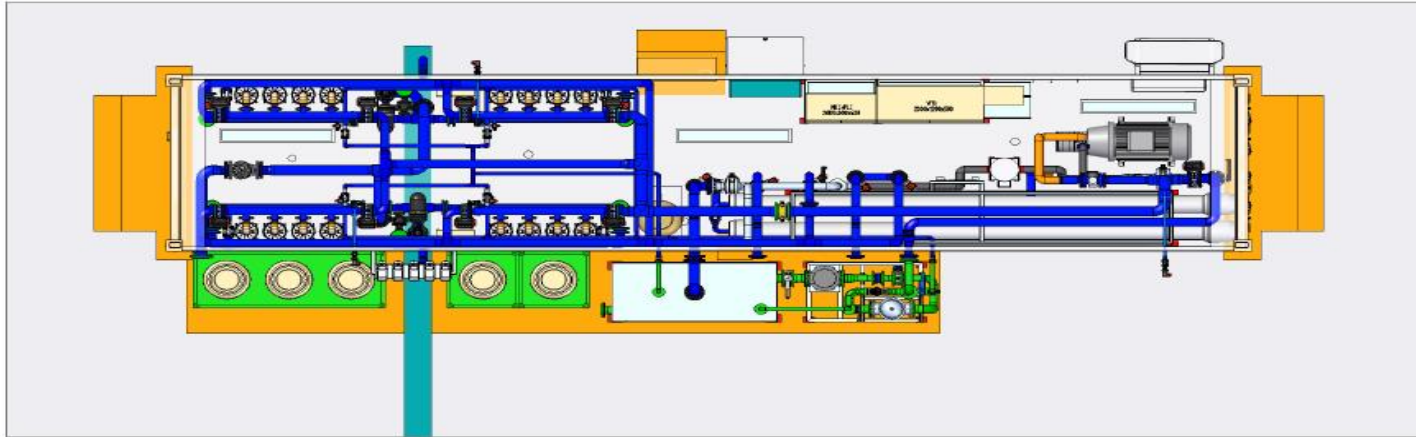


Packaged desalination plants like **NIROBOX™** offer a reliable low-cost option for prompt supply of comprehensive small-medium regional facilities.



Chanavayita

NIROBOX™ SW A comprehensive solution
suitable for temporary or permanent service.



Chanavayita

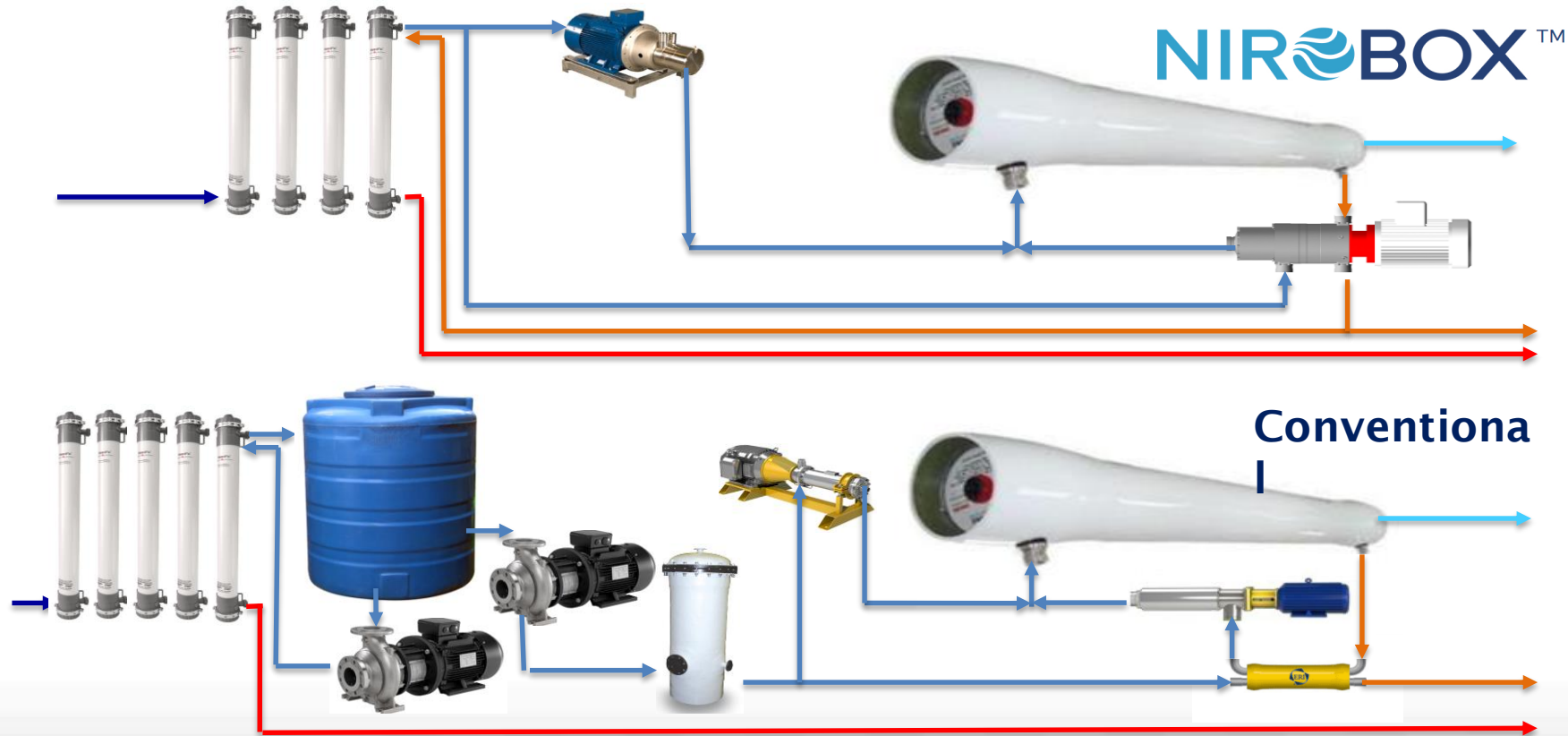
NIROBOX™ SW Conserves Resources and Revenue

- Fast modular delivery with compact installation
- High reliability and availability
- 20% lower power consumption with advanced design and ERD
- Consumables
 - Integrated ultrafiltration eliminates the need for disposable cartridge filters
 - Reduced chemicals w/exclusive osmotic UF backwash and CEB inhibits growth
 - UF/RO membrane life 4-7 years within industry norms
- Remote technical support
- Modular supply facilitates leasing and finance options



Chanavayita

NIROBOX™ SW vs Conventional System



Chanavayita

NIROBOX™ SW Main Components

PRE TREATMENT

- Amiad® Self-cleaning 130µm disc filter (Spinkleen)
- Dow® Hollow Fiber Ultrafiltration modules (IW-102)

DESALINATION

- Grundfos® AS & SMBS Chemical dosing systems
- Danfoss® HP piston pump (APP)/Energy Recovery Device + Booster (iSave®)
- Dow® or NanoH2O® 8" SWRO membranes
- C.I.P and Flush systems with Grundfos® pump

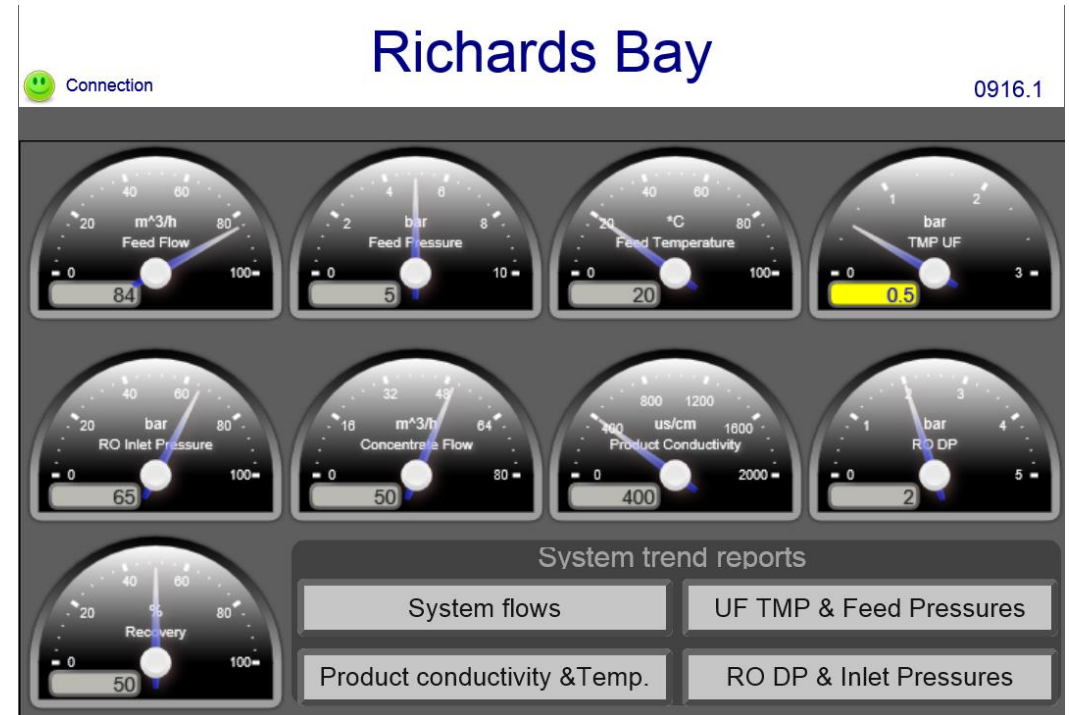
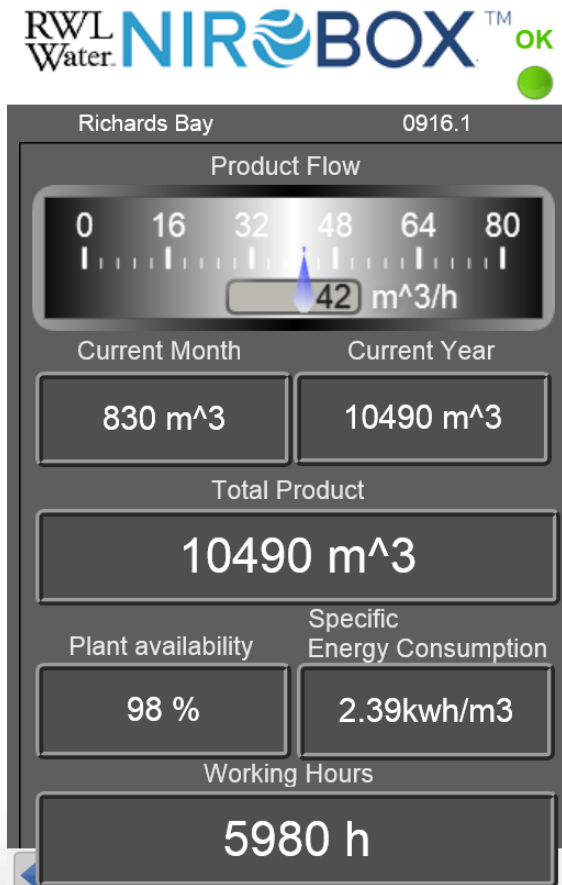
CONTROL, ELECTRICAL & ANALYTICS

- Siemens® PLC w/22" touch screen HMI panel & optional remote control
- NEMA 4 MCC panel with VFD for all pumps
- ABB® pressure, flow, EC, ORP & pH transmitters



Chanavayita

Desalination in Your Hand with the iPhone App



Chanavayita

NIROBOX™

SW an ideal solution for temporary and permanent use

**Small-medium
municipalities**



Recreation sites



Construction camps



Power plants



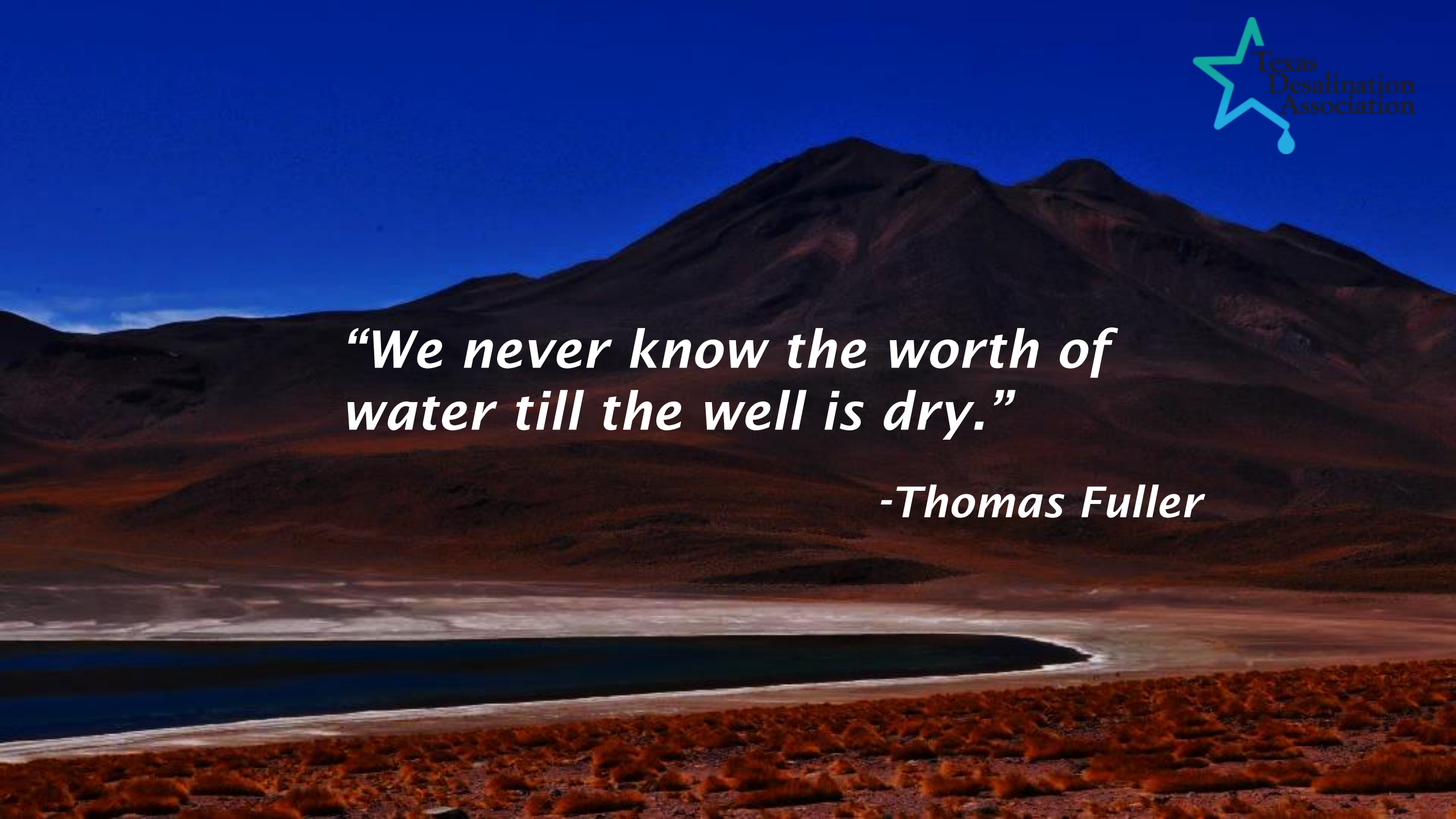
Industry & agriculture



mining camps



**RWL
Water™**

The background of the image is a desert landscape. In the foreground, there is a field of low-lying, reddish-brown shrubs. A dark, calm lake is situated in the middle ground, reflecting the sky. In the background, a range of dark, rugged mountains rises against a clear blue sky.

***“We never know the worth of
water till the well is dry.”***

-Thomas Fuller

RWL Water: Your Global Partner



7,000+
INSTALLATIONS

200+
EMPLOYEES

70+
COUNTRIES WITH
INSTALLATIONS

 Headquarters

 Operating Entities

 Regional Offices

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