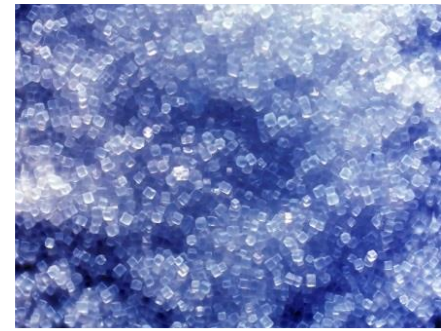




# CHANGING THE GAME FOR DESAL

*Texas Desal 2016*

*Extracting Minerals From Waste Water*

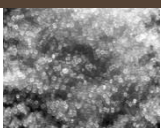
# ZERO LIQUID DISCHARGE DESALINATION



*EWM's clean technology desalinates salty water, producing drinking water and extracting the contaminants as marketable commodities*

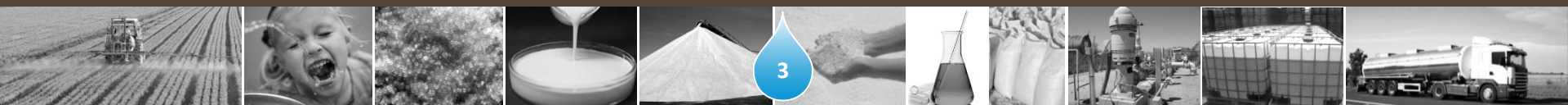
## Illustration of EWM's Solution

- All contaminants are separated into mineral products (zero liquid discharge)
- Water yield = ~99%
- Preserves finite aquifer resources
- Avoids disposal issues
- Often is cheapest new water supply option available
- Low CO2 footprint



Confidential

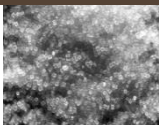
- Enviro Water Minerals Company (EWM) is commercializing cutting-edge technology that recovers minerals from salty water
- Process produces potable quality water for municipal water supply
- EWM's technology solves key impediment to large source of new freshwater supply: waste brine / concentrate disposal
  - Waste brine contains marketable minerals, which EWM extracts to sell
  - No residual waste water (zero liquid discharge)
- Coupling of revenue from mineral sales and sale of potable water makes business model feasible
- EWM IP – Patent portfolio of 12 process patents



# FIRST SITE: EL PASO

*EWM's first project in El Paso is fully financed and under construction*

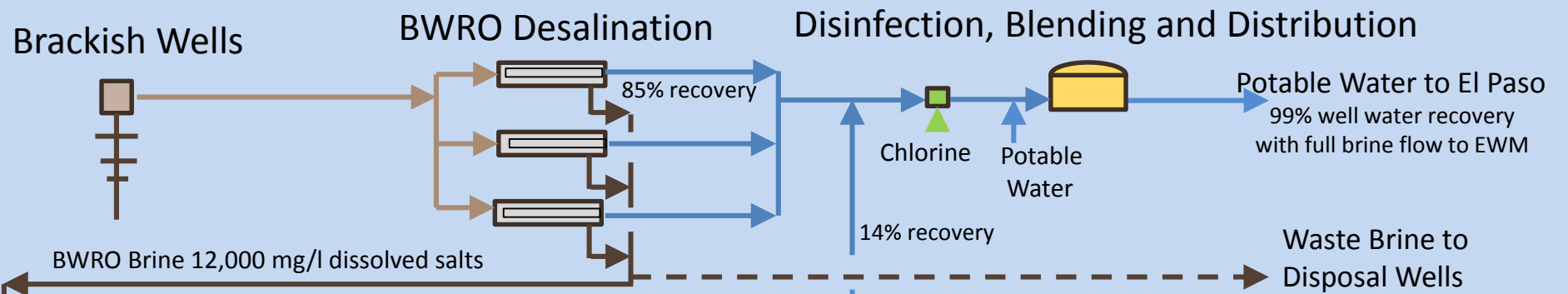
- Processing waste brine from Kay Bailey Hutchison Desalination Plant and raw brackish water
  - Currently disposes of waste brine via deep well injection (22 miles away)
- Benefits to El Paso include:
  - Enhanced yield from existing desalinization plant (effectively 99%)
  - Avoided concentrate disposal issues
  - Preservation of finite life brackish water aquifer



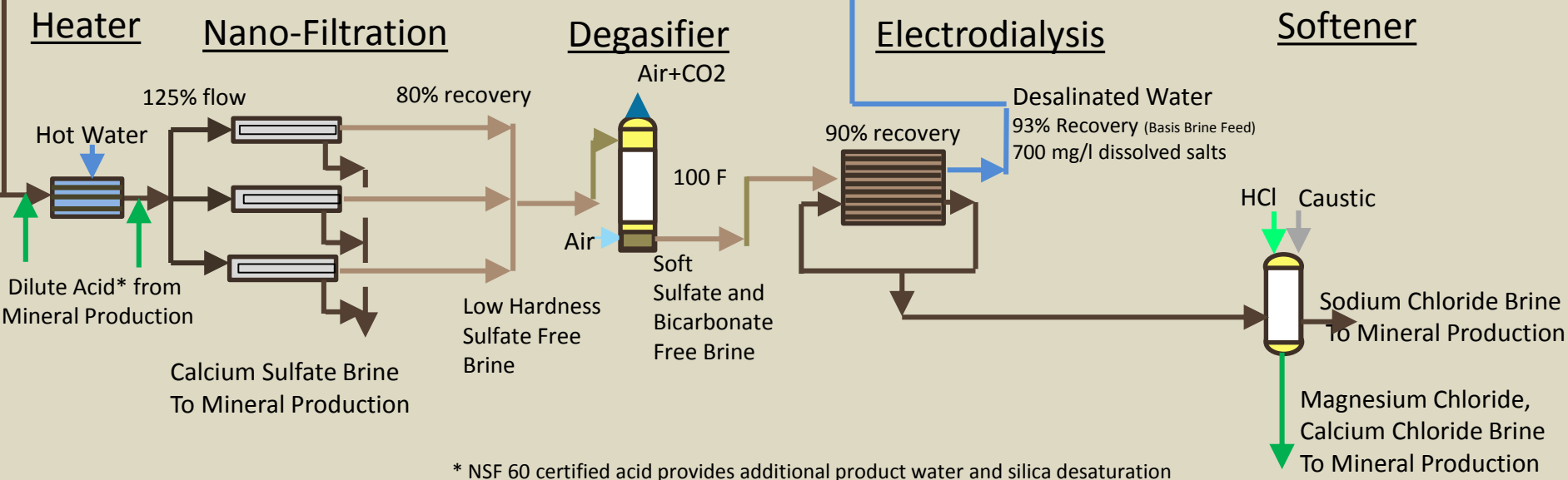
- Construction of a new plant adjacent to existing desalination plant
- EPWU sends 1.25 mgd of concentrate and 1 mgd of raw brackish well water to EWM for processing
  - ✓ EWM extracts salts / minerals from the concentrate
  - ✓ Returns potable-quality water to EPWU
- EWM's permeate is treated to meet TCEQ drinking water standards and will be pumped into EPWU's potable water distribution system



## EXISTING EPWU KAY BAILEY HUTCHISON PLANT



## PROPOSED ENVIRO WATER MINERALS EL PASO PLANT



- Broke Ground January 2016
- Expected mechanical completion: late 2016 / early 2017
- Commence commercial operations: early 2017



Picture taken August 15, 2016



# INDOOR EQUIPMENT

NF / RO



Settling



Electrodialysis – Bipolar  
Membranes



Electrodialysis



Ion Exchange



# OUTSIDE EQUIPMENT

6.5 MW Natural Gas CHP



Degassifier



Cooling Towers



## Water Municipality



- ✓ Maximize water yield from existing resources
- ✓ Eliminate waste brine stream
- ✓ Reduce BWRO operating and maintenance costs
- ✓ Increase water supply
- ✓ Recovers minerals as marketable products
- ✓ Recovers wastewater as desalinated product water

***A partnership with EWM is a “Win, Win, Win”  
for the community, EWM and the environment***



- Municipal desalination
  - Direct from brackish water or
  - Treat concentrate from existing BWRO plant
- Agricultural brackish well water
- Industrial water (e.g. power plant cooling tower blowdown)
- Oilfield produced water/flowback water

