Lithium, Lilac, and the Great Salt Lake

January 2026

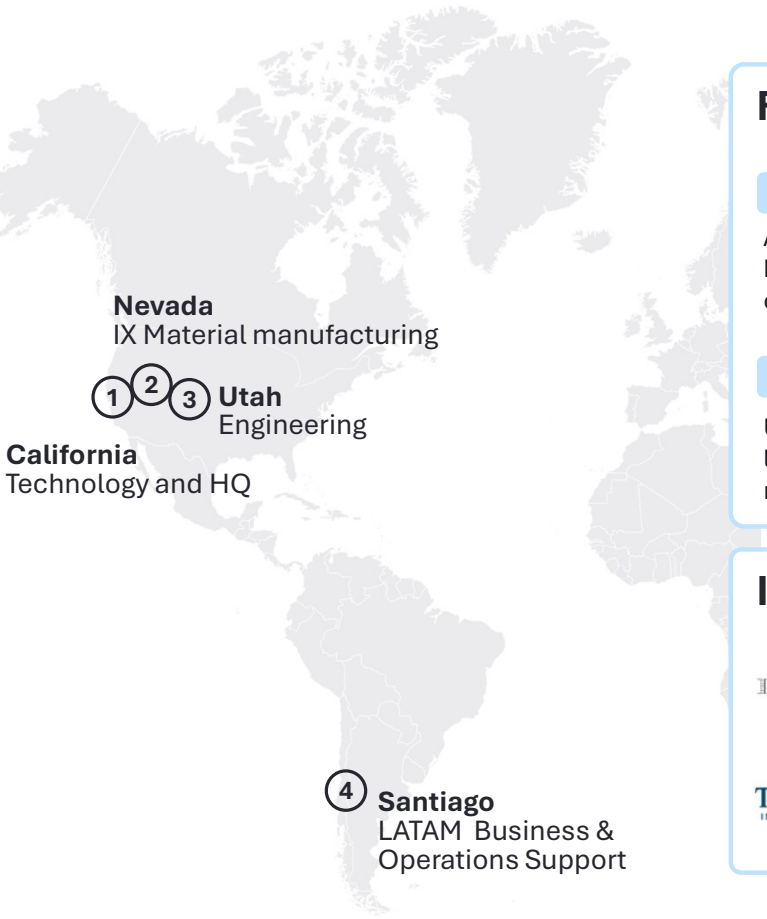
Lilac is the Leading Provider of Lithium IX Technology

2016
Founded

33+
Granted patents

$315M+
Capital raised

2026
IXM manufacturing



Field Tested and Scalable

Resource Flexibility
Attractive economics across brines including salar, oilfield, and geothermal.

Lower Impact
Sharply reduces land and freshwater needs.

Supply Chain Security
US design & manufacturing lessens market interference risks.

Modular & Scalable
Extensive field pilot & demo testing, with first commercial site in development.

Investors Focused on Scale

LOWERCARBON CAPITAL · BMW · MITSUBISHI · Sumitomo Corporation · THE ENGINE · T.RowePrice INVEST WITH CONFIDENCE · Breakthrough Energy · MERCURIA · SK

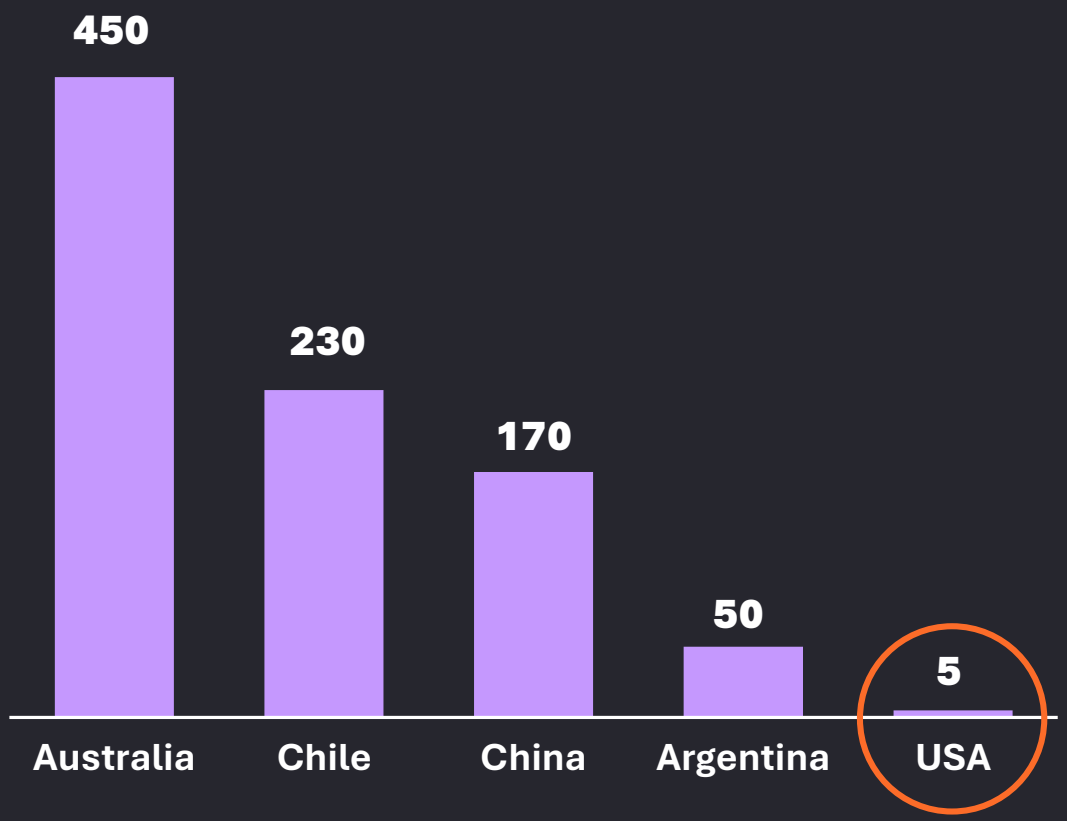

The largest and ‘easiest’ brines in the world – The Atacama, Chile – are rare.
LILAC


The traditional approach – evaporation ponds –
have limited applications to fill the supply gap.

#CriticalMinerals are a huge focus area for the US

The US is Currently Not a Relevant Player

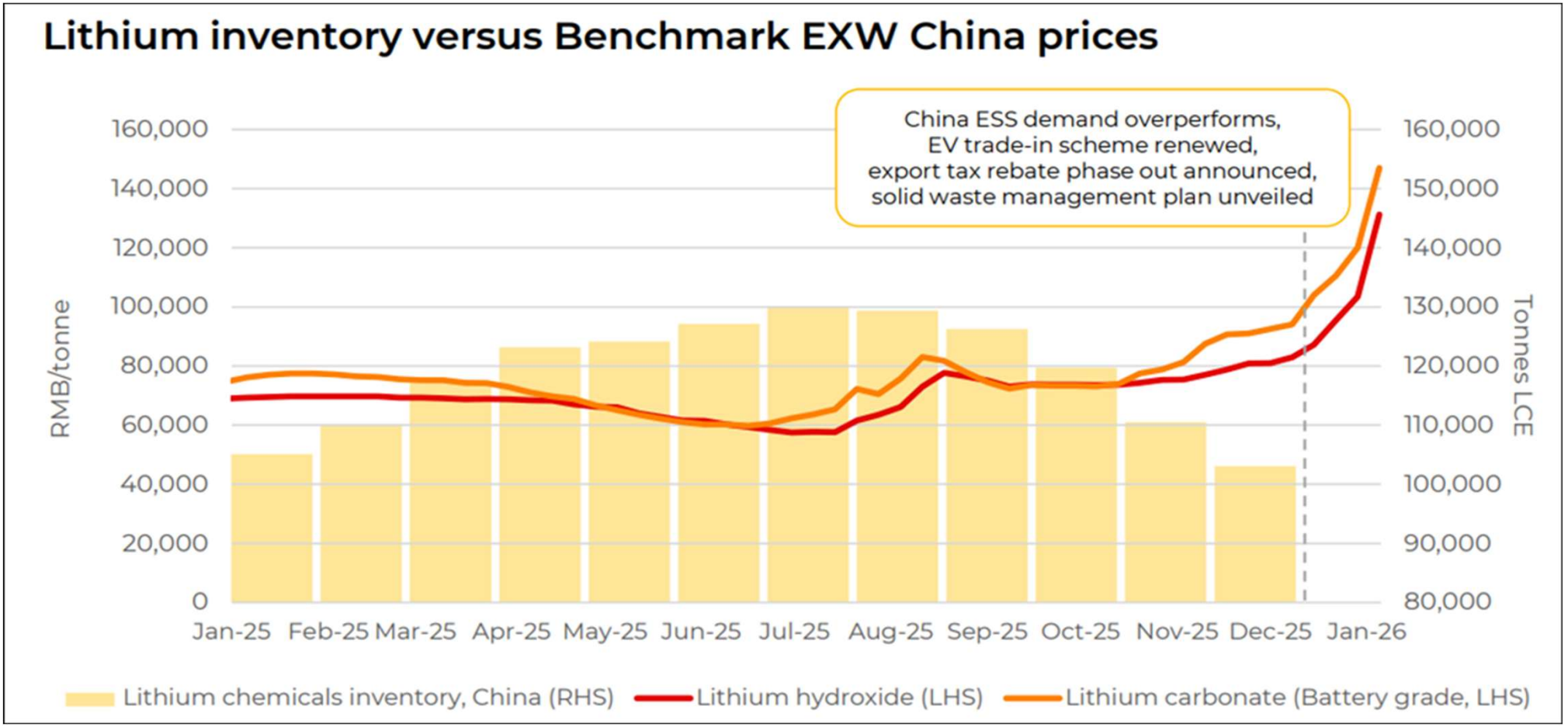
Production (tonnes LCE)



LILAC

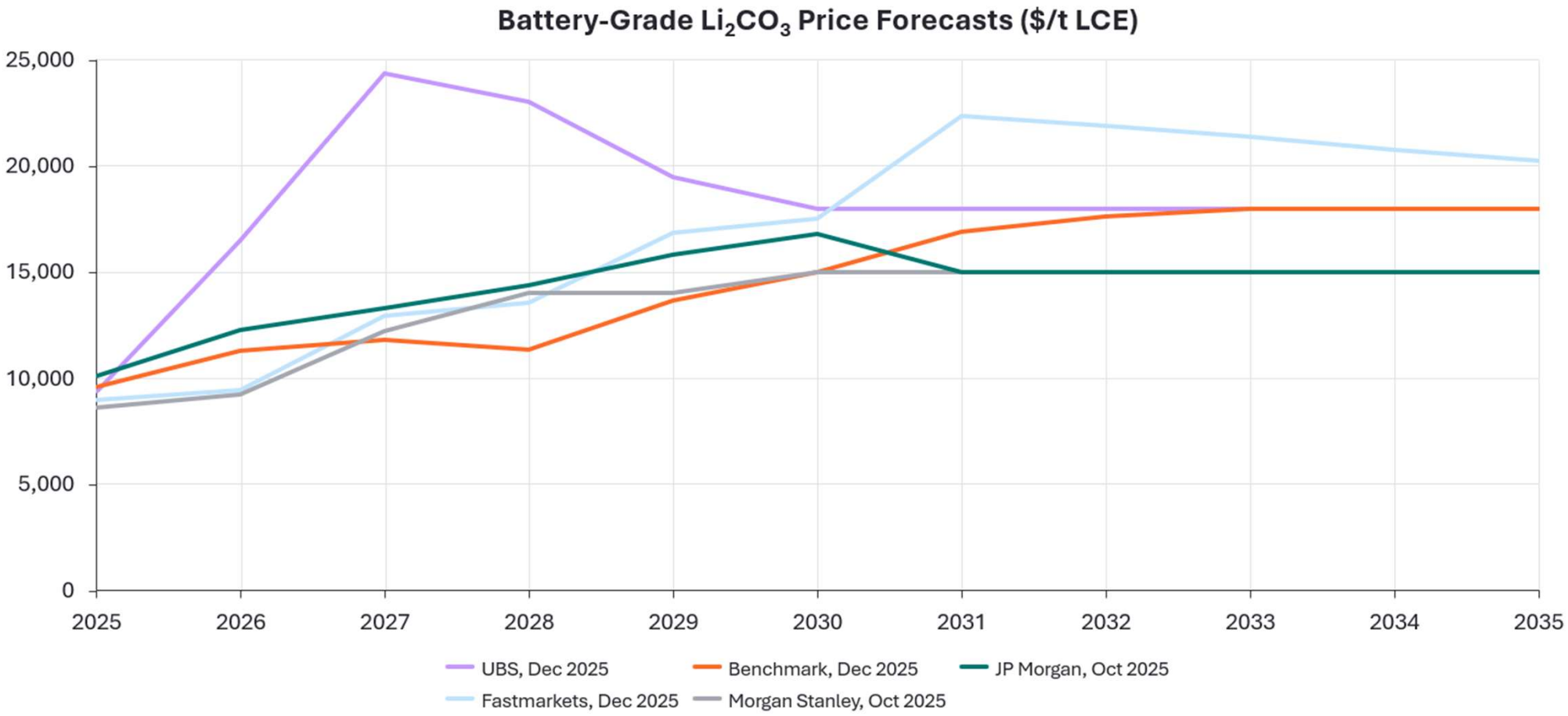
US Geological Survey

Lithium Price History ($/t LCE)



Source: price data from Shanghai Metals Market

Lithium Prices Analysts Forecast



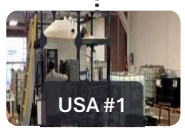
1: This is an ex-VAT price forecast; to enable direct comparison with other price forecasts, it should be increased by 13%

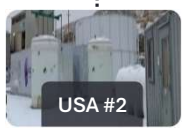
Lilac's own Great Salt Lake project designed to accelerate customer adoption

WE ARE HERE

80 Mini-pilots
Completed

6 Pilot Plants
Completed/Underway

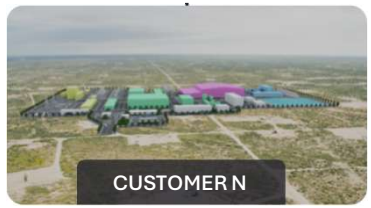




2 Demo Plants
Completed

1 Commercial Project
In Development

N Customers
Unlocked

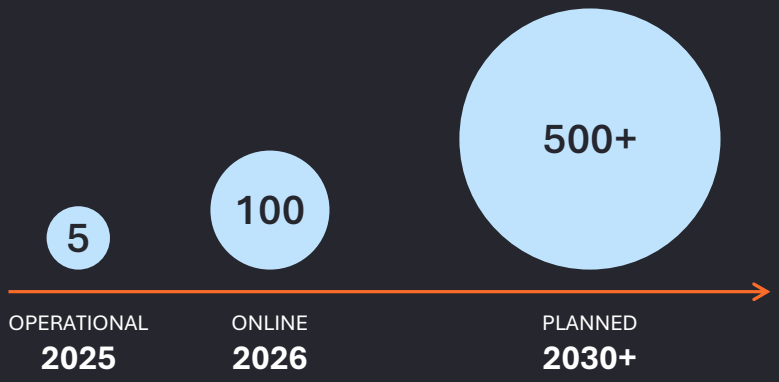


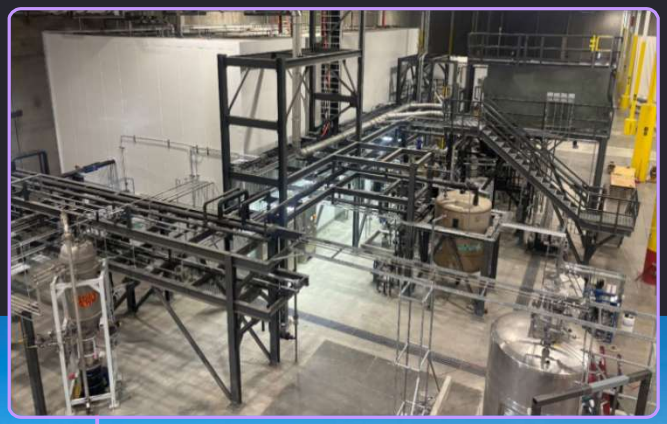
Lilac IXM Manufacturing

Manufacturing in Nevada, USA

- Tight quality control
- Secure (US-based) supply chain
- Continuous optimization
- Initial capacity is 200 tonnes of IXM per year, which supports up to 100,000 tpa LCE

PRODUCTION SUPPORTED ($kTPA_{LCE}$):





LILAC

Welcome to Great Salt Lake


Park Valley
Hyde Park
North Logan
Logan
Garland
Tremonton
Sage Creek Junction
Randolph
Promontory
Brigham City
Woodruff
Bear River
Almy
North Ogden
Evanston
Ogden
Great Salt Lake
Clearfield
Layton
Emory
Antelope Island
Rowley
Coalville
Bountiful
Wanship
Salt Lake City
Aragonite
Skull Valley
Oakley
West Valley City
Lakeside
Park City
Kamas
Grantsville
West Jordan
Francis
Sandy
Uinta-Wasatch-Cache National Forest

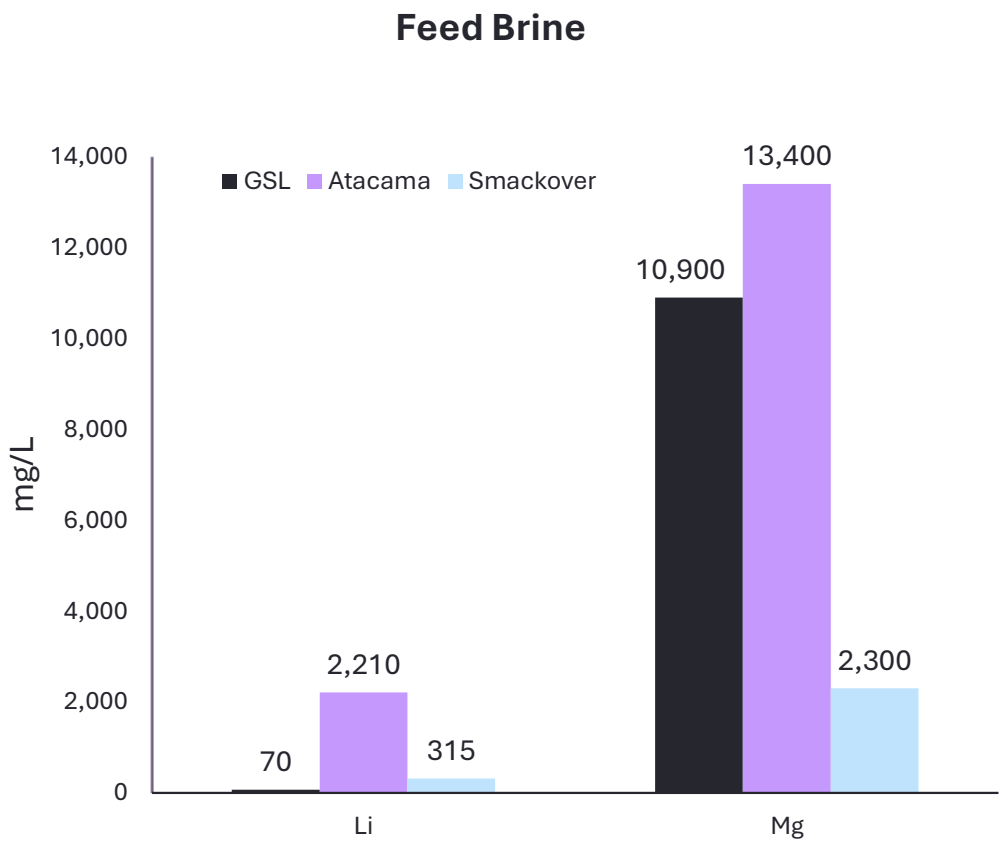
Non-consumptive of lake water

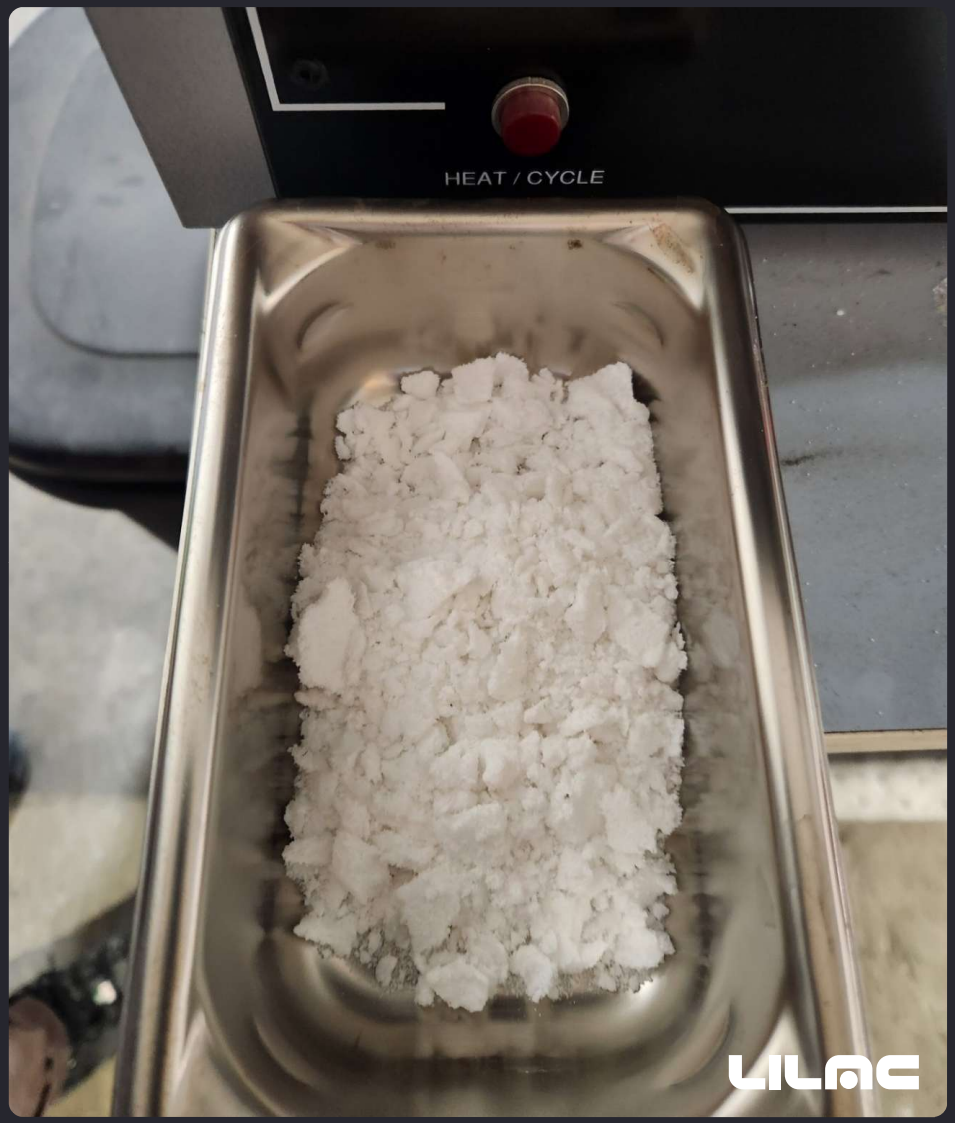

Delithiated
Brine Return
7
OUTFALL BRINE
4620-TK-003


RAIN FOR RENT


EXHAUST
4610-TK-002
LILAC

Great Salt Lake is Tough Brine




HEAT / CYCLE


Brine
Intake
Delithiated
Brine Return

GREAT SALT LAKE

Pilot Plant

STATUS

- Pilot construction and commissioning completed in H2 2024
- Pilot plant operations Jan-Aug 2025, completed

OBJECTIVES

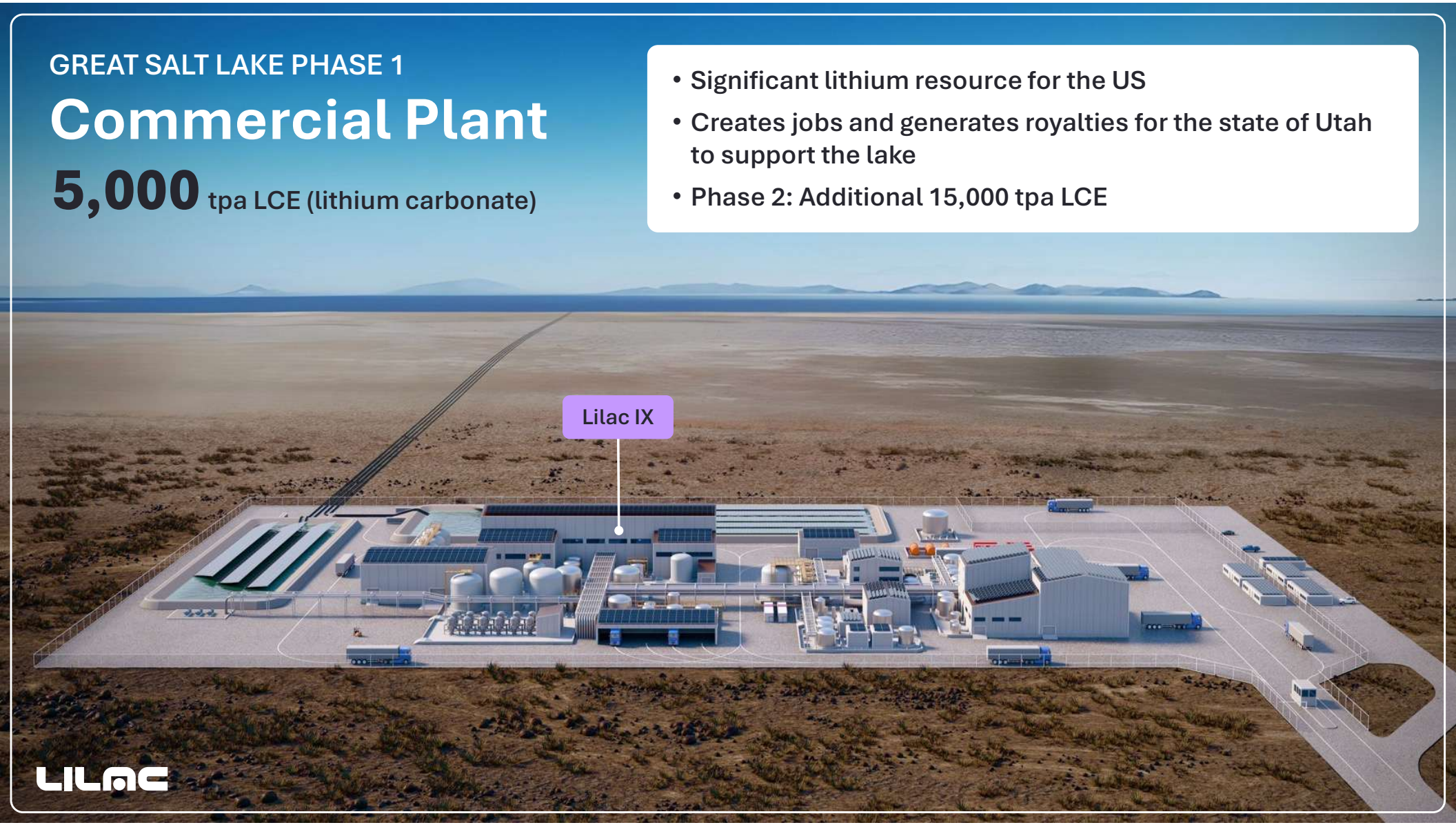
1. Prove Lilac IX technology performance on GSL brine in the field
2. Produce data for FEL-3 engineering
3. Satisfy regulatory requirements for water and mineral rights to progress key commercial permits
4. Generate product samples for offtakers and downstream technology package providers

GREAT SALT LAKE PHASE 1

Commercial Plant

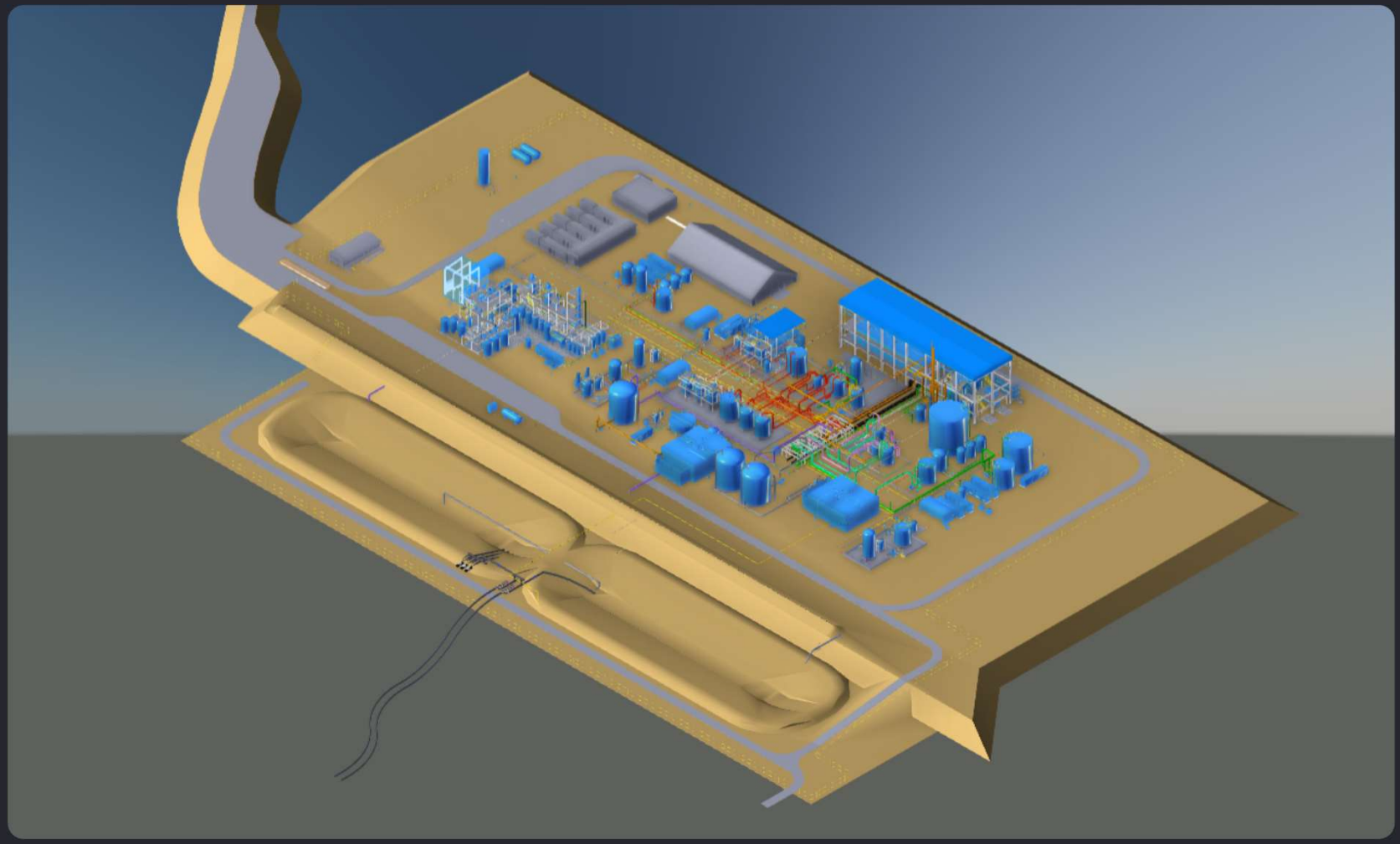
5,000 tpa LCE (lithium carbonate)

- Significant lithium resource for the US
- Creates jobs and generates royalties for the state of Utah to support the lake
- Phase 2: Additional 15,000 tpa LCE



LILAC

3D Model

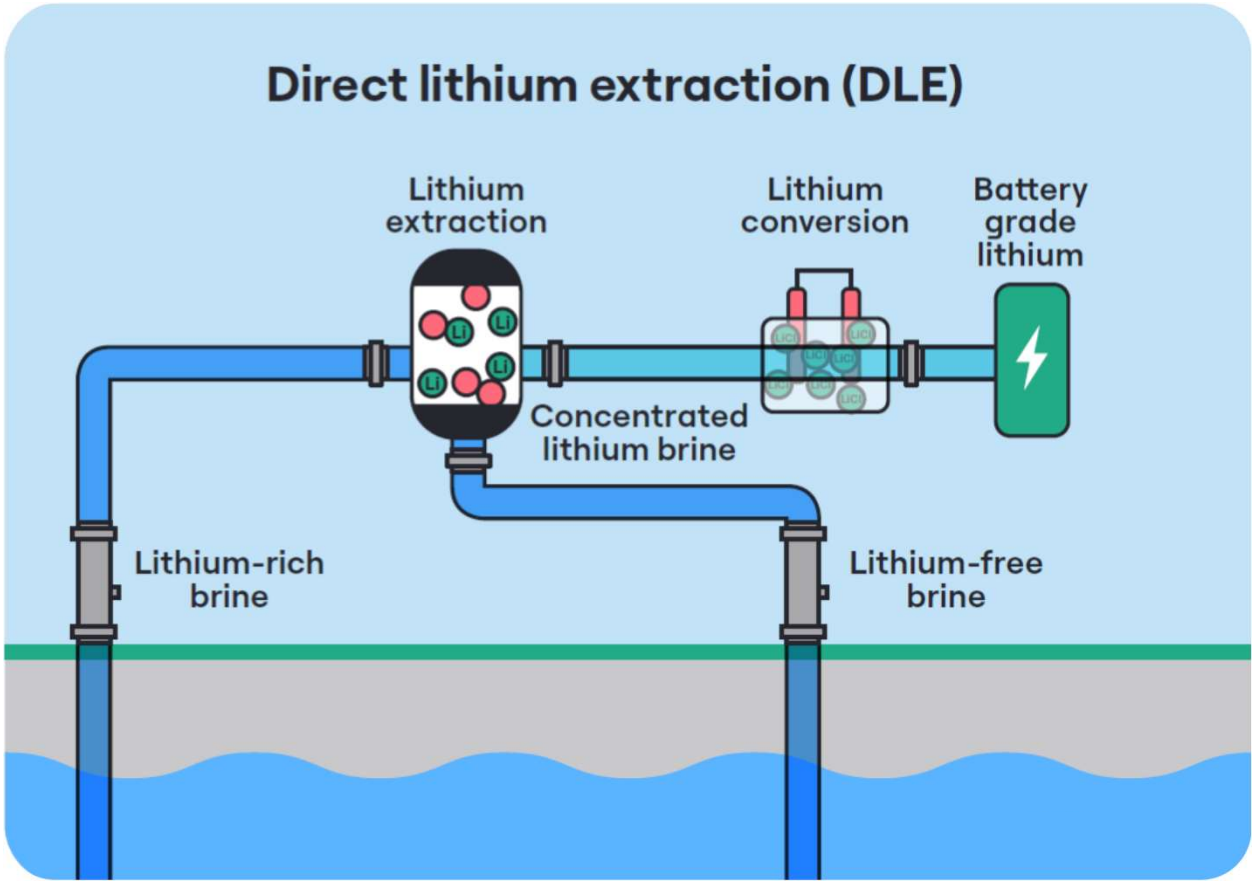


The Technology

Lilac uses modern direct lithium extraction (DLE) technology.

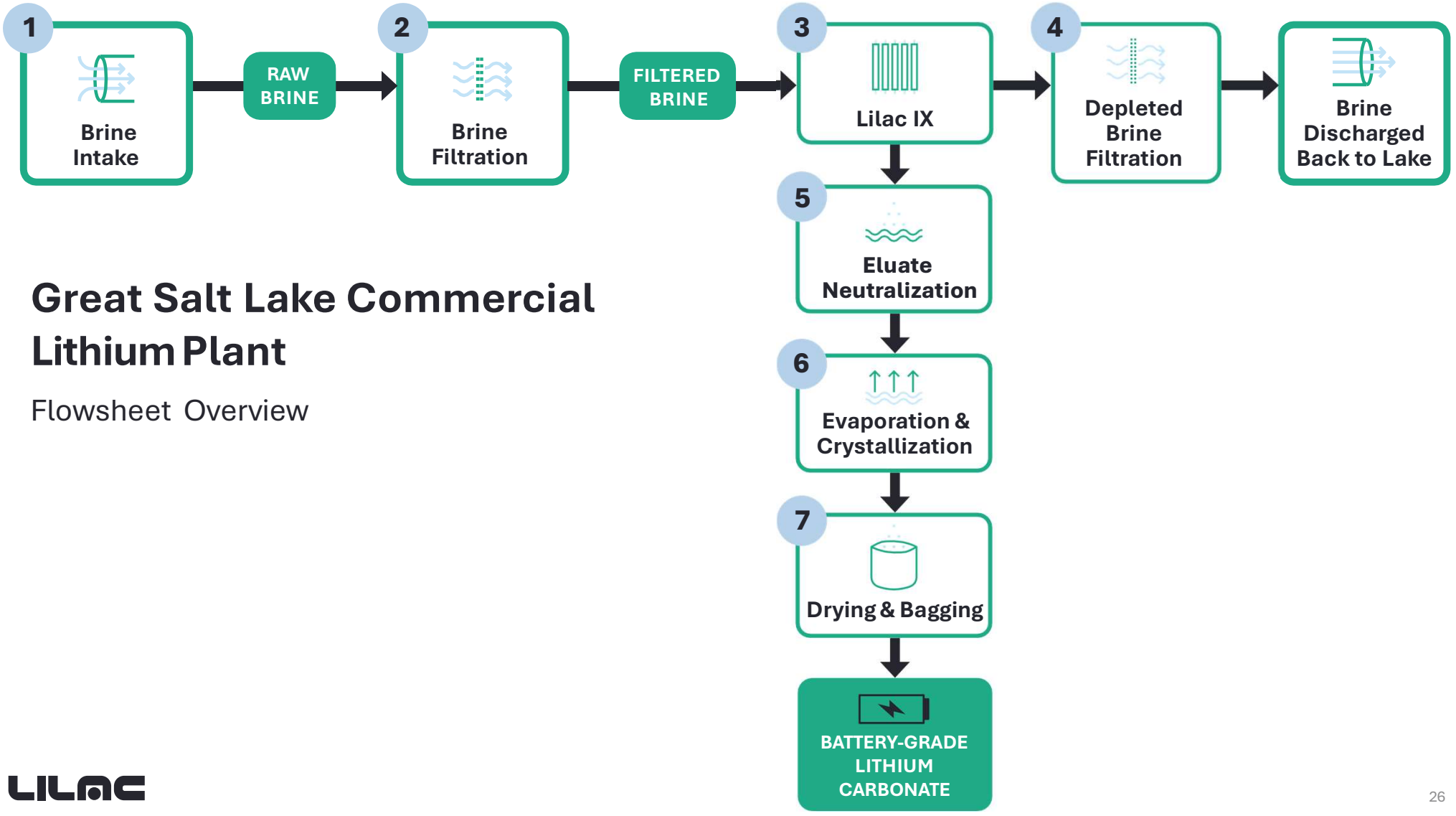
Lake brine flows through the DLE process to remove the lithium, and then the lithium-depleted brine is returned to the lake.

Just like the water softener in your home, DLE is selective for the element that it extracts, focused only on lithium.



Great Salt Lake Commercial Lithium Plant

Flowsheet Overview



Faster, cheaper, and cleaner lithium production

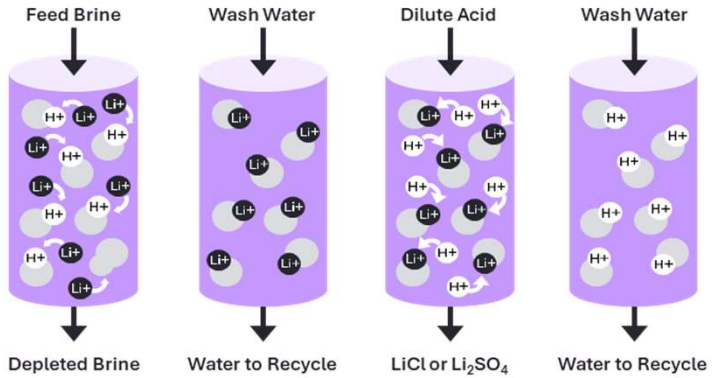
Resource Advantages

Resource Flexibility:
High performance across salar, surface, geothermal, produced-water, and reservoir brines.

No Pre-Heating:
Does not require brine heating to achieve economic recoveries.

Minimal Conditioning:
Tolerant to As, Pb, Mg, Ca, SO_4, low TDS, etc.

The Lilac IX Cycle



LOADING
Li+ exchanges with H+ to bond to the Lilac IX Media

WASHING
Recycled wash water removes residual brine

STRIPPING
H+ in the acidic strip solution displace Li+

WASHING
Recycled wash water removes residual dilute acid

Processing Advantages

Highly Selective for Lithium:
Patented IX modules economically capture lithium from any brine.

Freshwater Efficiency:
Minimal freshwater required for washing.

Downstream Savings:
Eluate purity negates the need for expensive nanofiltration and decreases boron removal costs.

Summary of Pilot Plant Water Quality Monitoring

Weekly composite intake North Arm brine and effluent sampling

43 parameters analyzed, including flow rates

State-Certified Analytical laboratory, Level IV Quality Data Package-
Overall, very pleased with Lab quality and low MDLs ---as the heavy brine is very challenging to analyze

Alkalinity	Calcium	Iron	Nitrite	TSS
Aluminum	Carbonate	Lead	Oil and Grease	Zinc
Arsenic	COD	Lithium	Potassium	
Barium	Chloride	Magnesium	Selenium	**FIELD**
Bicarbonate	Chromium	Manganese	Silica	Density
BOD	Copper	Mercury	Silver	DO
Boron	Cyanide	Molybdenum	Sodium	Flow
Bromide	Hardness	Nickel	Sulfate	Temperature.
Cadmium	Hydroxide	Nitrate	TDS	pH

Summary of Pilot Plant Water Quality Monitoring- con’t

Constituents with Non-Detection reported and Method Detection Limits(MDL)

Alkalinity as Hydroxide(CaCO3) (MDL - 0. 2 mg/L)

Cadmium (MDL - 0.0012 mg/L)

Carbonate (CaCO3) (MDL - 0.2 mg/L)

Cyanide (MDL - 0.022 mg/L)

Lead (MDL - 0.0087 mg/L)

Oil and Grease (MDL- 5mg/L)

Nitrate (MDL - 6.64 mg/L)

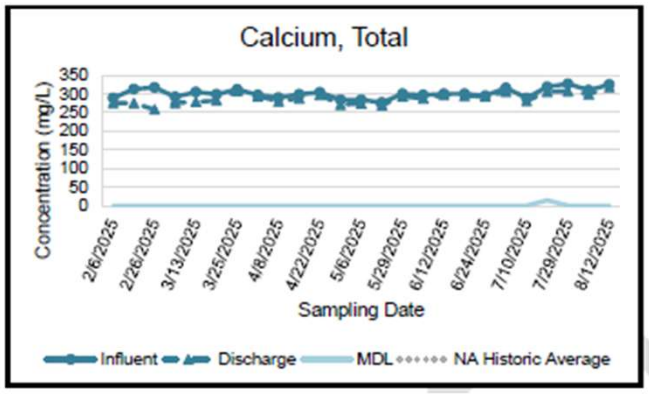
Nitrite (MDL – 0.01 mg/L)

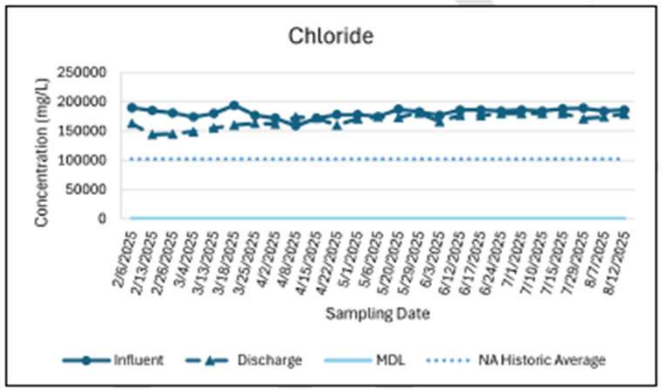
Silver (MDL - 0.008 mg/L)

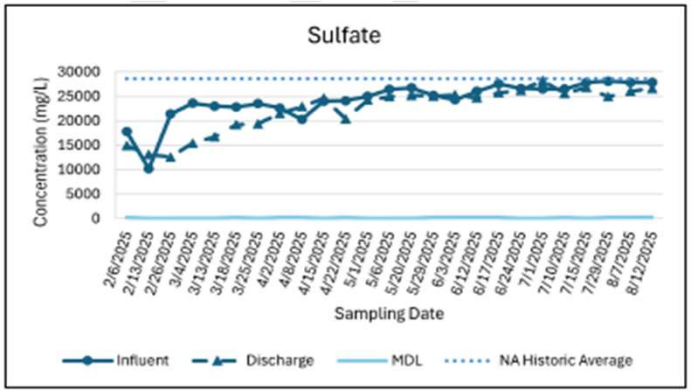
Zinc (MDL - 0.05 mg/L)

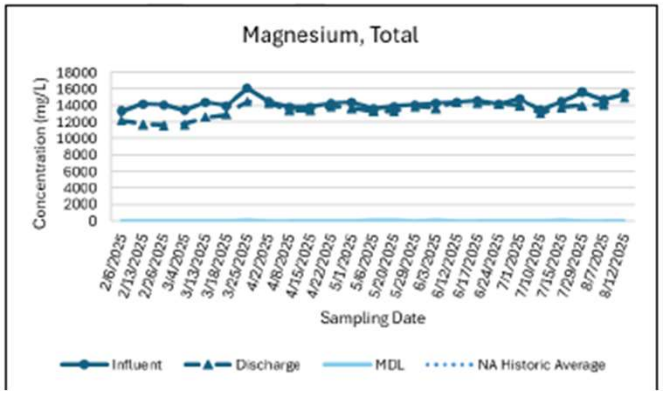
Summary of Pilot Plant Water Quality Monitoring-con't

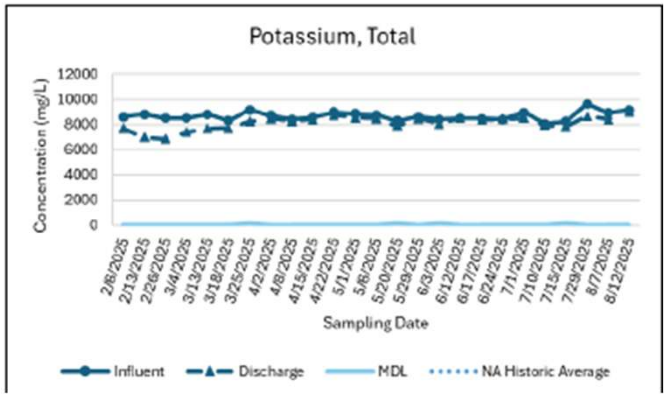
Salinity Parameters

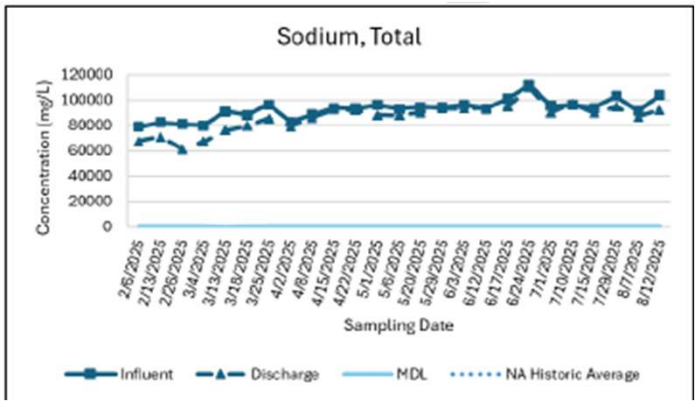






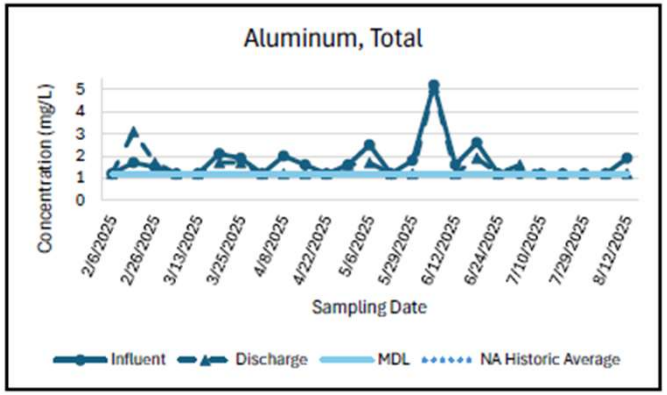


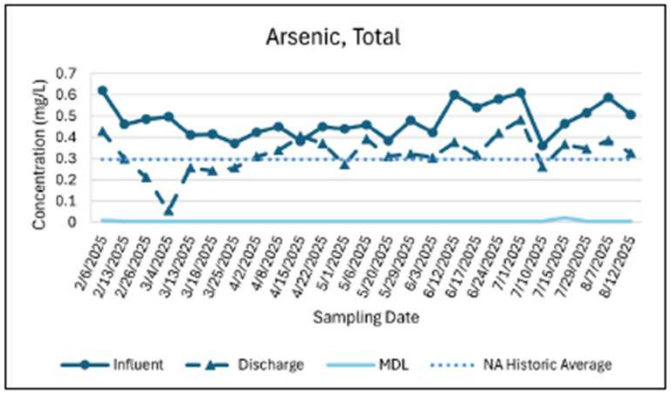


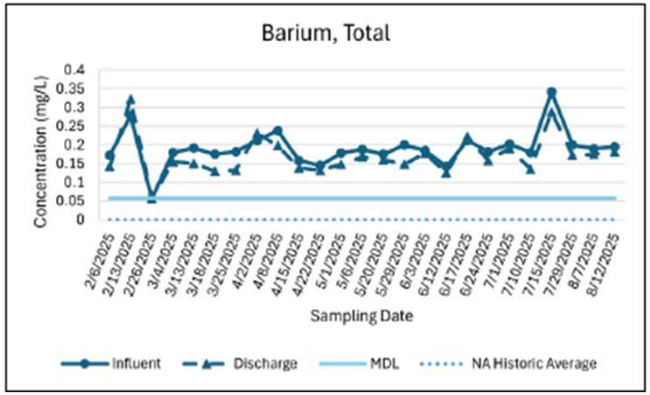


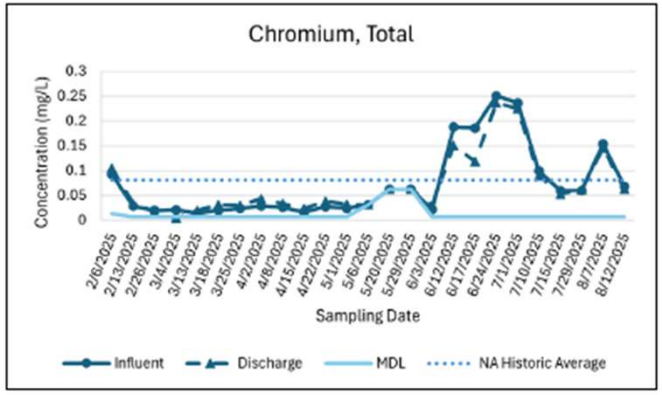
Summary of Pilot Plant Water Quality Monitoring-con't

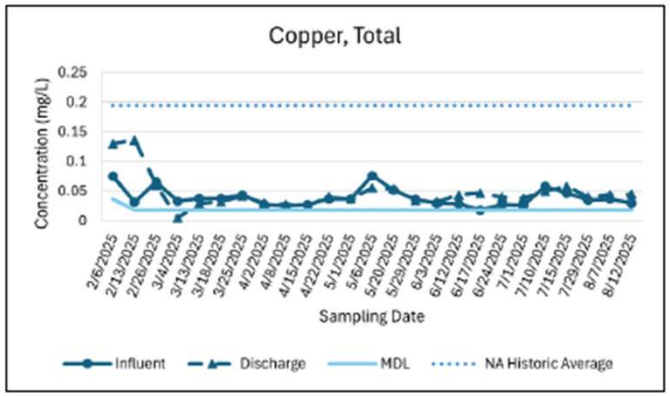
Metal Parameters

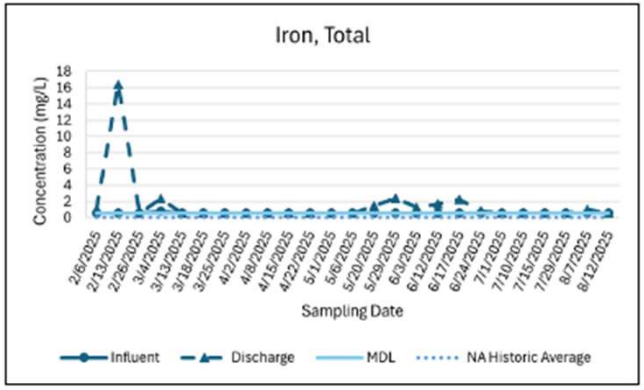






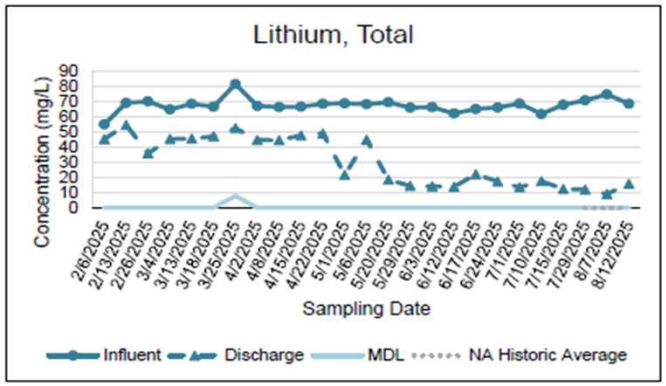


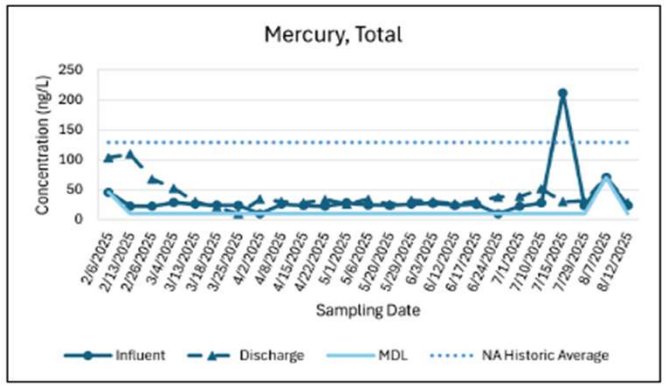


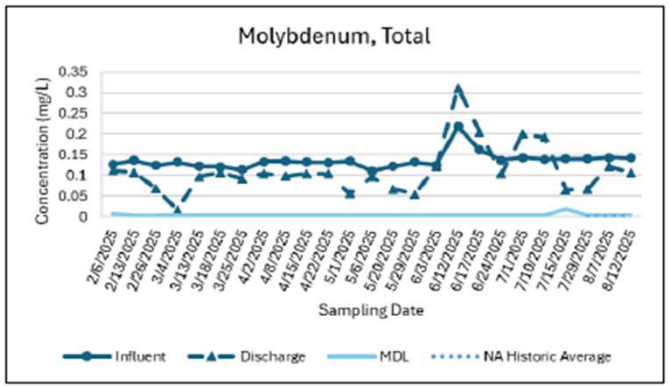


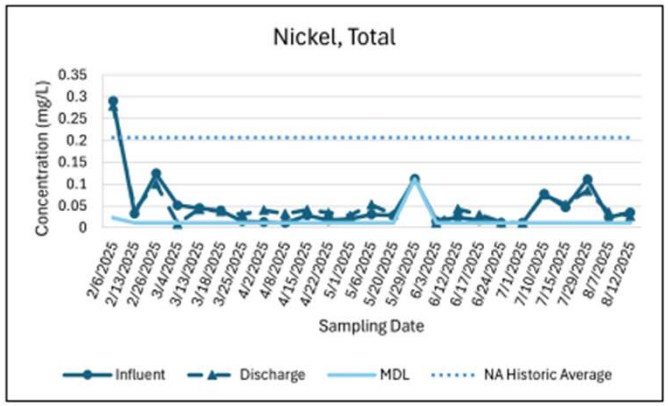
Summary of Pilot Plant Water Quality Monitoring-con't

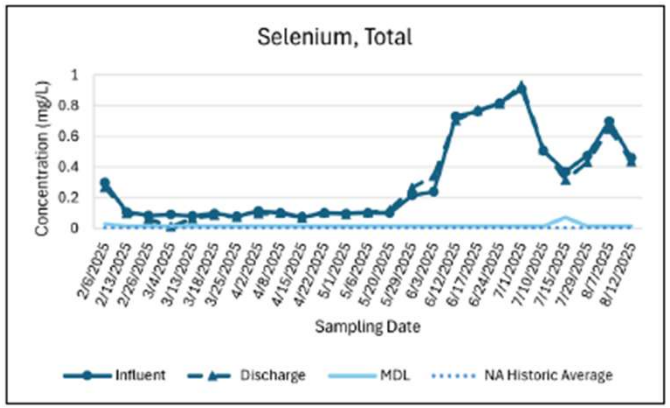
Metal Parameters- con't





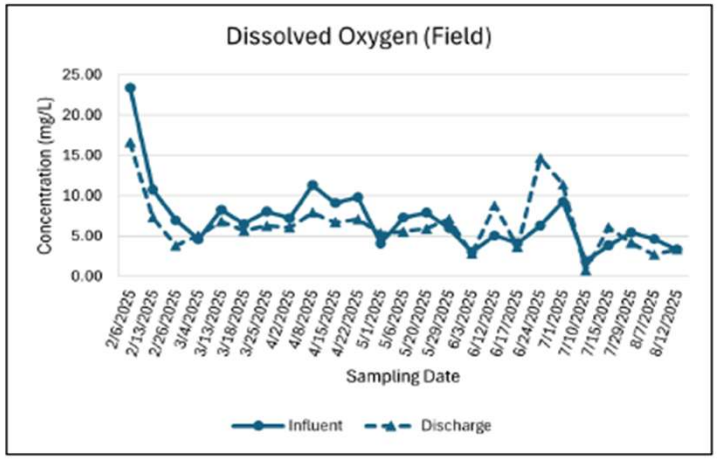


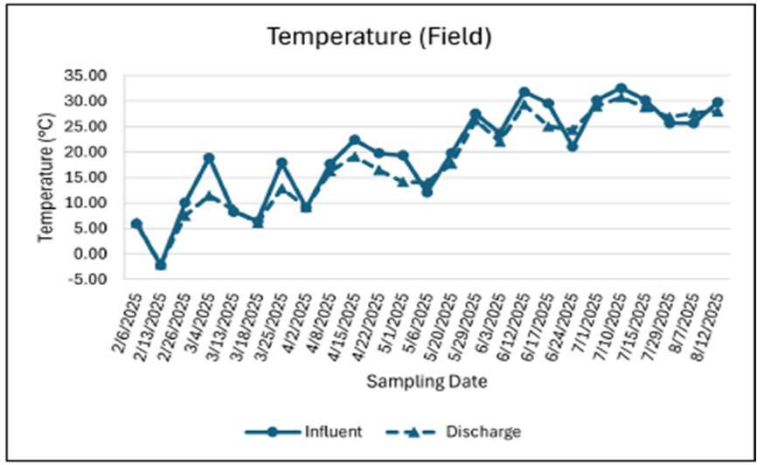


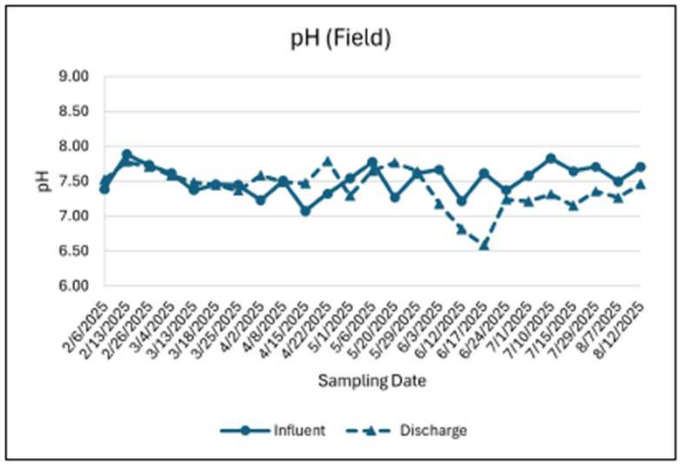


Summary of Pilot Plant Water Quality Monitoring-con't

Field Parameters







Summary of Pilot Plant –By the Numbers

Brine and water used

Raw Brine Intake

	Commissioning Intake (gal)	Performance Run Intake (gal)	Decommissioning Intake (gal)	Combined (gal)
January 2025	26,930	0	0	26,930
February 2025	72,650	0	0	72,650
March 2025	65,510	0	0	65,510
April 2025	215,770	0	0	215,770
May 2025	68,640	70,560	0	139,200
June 2025	0	60,990	148,790	209,780
July 2025	0	0	237,940	237,940
August 2025	0	0	125,460	125,460
TOTAL	449,500	131,550	512,190	1,093,240

Depleted Brine (Returned)

	Commissioning (gal)	Performance Run (gal)	Decommissioning (gal)	Combined (gal)
January 2025	0	0	0	0
February 2025	77,560	0	0	77,560
March 2025	77,130	0	0	77,130
April 2025	226,160	0	0	226,160
May 2025	60,900	79,560	0	140,460
June 2025	0	63,140	141,200	204,340
July 2025	0	0	254,400	254,400
August 2025	0	0	153,080	153,080
TOTAL	441,750	142,700	548,680	1,133,130

Intake: 1,093,240
Returned: 1,133,130
Increased return: 39,890

Summary of Pilot Plant –By the Numbers

Brine and water used

Ground water

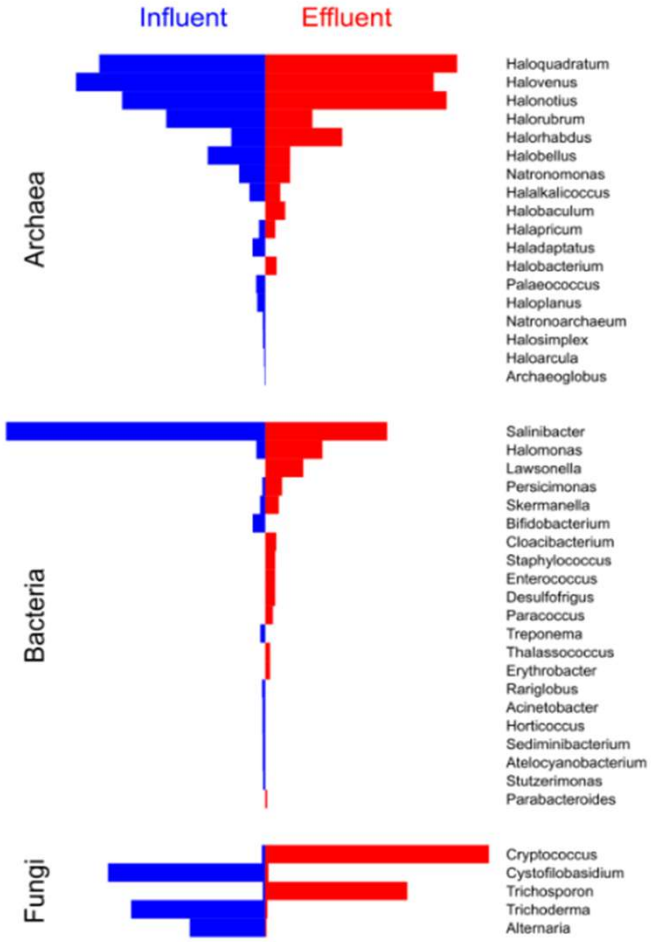
	Commissioning (gal)	Performance Run (gal)	Decommissioning (gal)	Combined (gal)
January 2025	7,380	0	0	7,380
February 2025	7,860	0	0	7,860
March 2025	5,960	0	0	5,960
April 2025	13,280	0	0	13,280
May 2025	11,890	1,710	0	13,600
June 2025	0	1,570	5,090	6,660
July 2025	0	0	28,490	28,490
August 2025	0	0	3,070	3,070
TOTAL	46,370	3,280	35,650	86,300

Biota Study

- Conducted by Dr. Bonnie Baxter from Westminster University
- Collected samples of influent and effluent on February 28, April 24, and June 24 during pilot operations
- Characterized the Biomass, Cell counts, Archaea, Bacteria, and Fungi in Influent and Effluent samples.
- Determined the extraction procedure did not reduce the cell count or have adverse effects on the cells.
- Determined the difference between influent and effluent genera, bacterial genera was negligible.
- Determined the fungi present in the samples were not critical to the ecosystem because they do not play a role in nutrient cycling.

Table 1. Cell Counts by hemocytometer

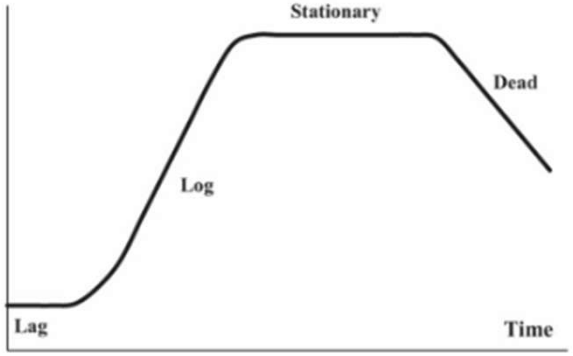
Sample Date	Influent	Effluent
February 28, 2025	2 x 10E8 cells/mL	Contaminated, Rust Flakes
April 24, 2025	3.6 x 10E9 cells / mL	4.6 x 10E9 cells / mL
June 24, 2025	8.1 x 10E9 cells / mL	5.3 x 10E9 cells / mL



Biota Study – Inoculation Experiment

- Collected samples of influent and effluent on February 28 (0.15 mg/L Mn), April 24 (0.3 mg/L Mn), and June 24 (0.2mg/L Mn) during pilot operations
- Inoculated 9 mL of 23% salt MGM media with 1mL of sample
  - Influent Sample
  - Effluent Sample
  - 50:50 Influent : Effluent
  - Sterile Water (Control)

Study showed that mixing influent and effluent had **no visible impact on microbial growth patterns.**



Typical microbial growth curve

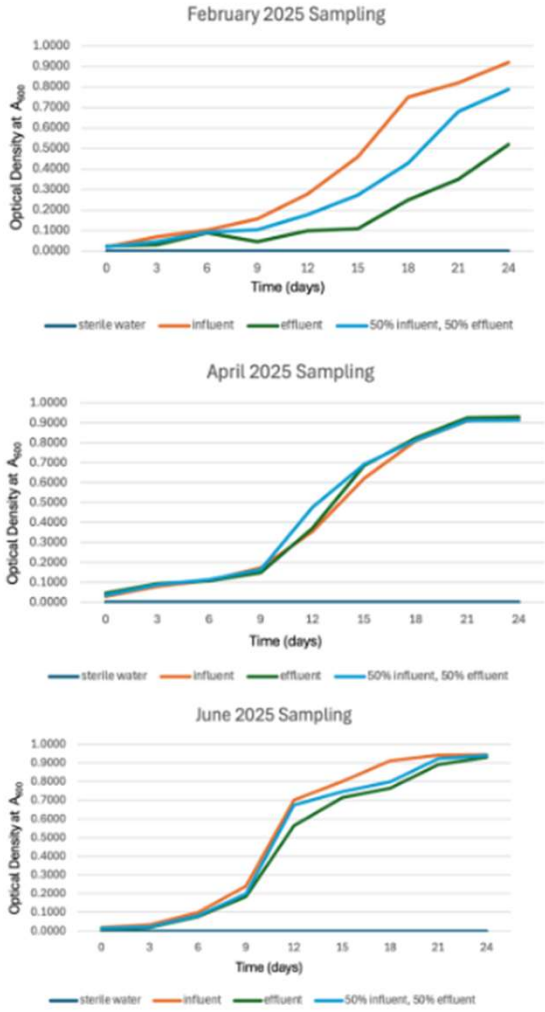
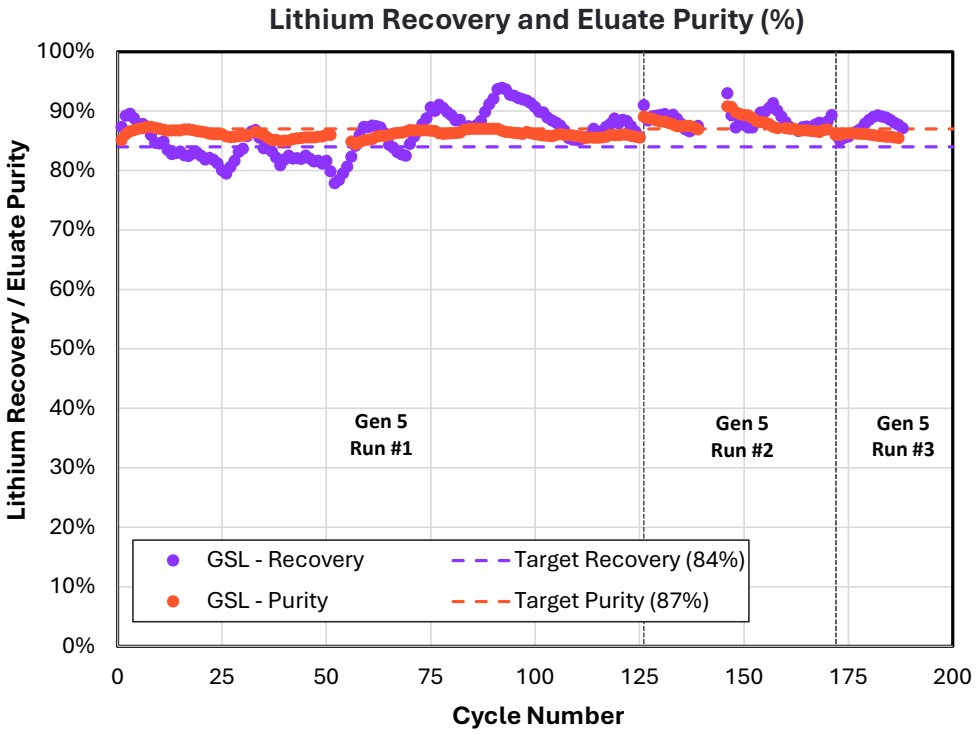


Figure 8. The top panel represents the February sampling at Waterleaf while the middle represents April and the bottom represents June. The sterile water inoculation control, dark blue, served as a blank for the optical density measurements at A600 and showed no contamination in the experiment. The influent samples are shown in orange, the effluent in green, and the 50:50 mixture in light blue.

Great Salt Lake Pilot Plant: Gen 5 IX



mg/L	Li	Na	Mg	Ca	K	B
Brine	69	85,800	13,300	303	8,360	50
Eluate	2,040	603	293	97	203	0.9

KPI	Target	Achieved	
Lithium Recovery	84%	87%	✓
Eluate Purity	87%	87%	✓
Space Velocity (BV/hour)[1]	80	80 to 103	✓
Overall Impurity Rejection	99.97%	99.97%	✓

Battery Grade Li_2CO_3 from the Great Salt Lake

Evaporation and crystallization testing in Oakland

Lilac Solutions, Inc.
Lithium Extraction Technology
lilacsolutions.com
Certificate of Analysis

October 18, 2023

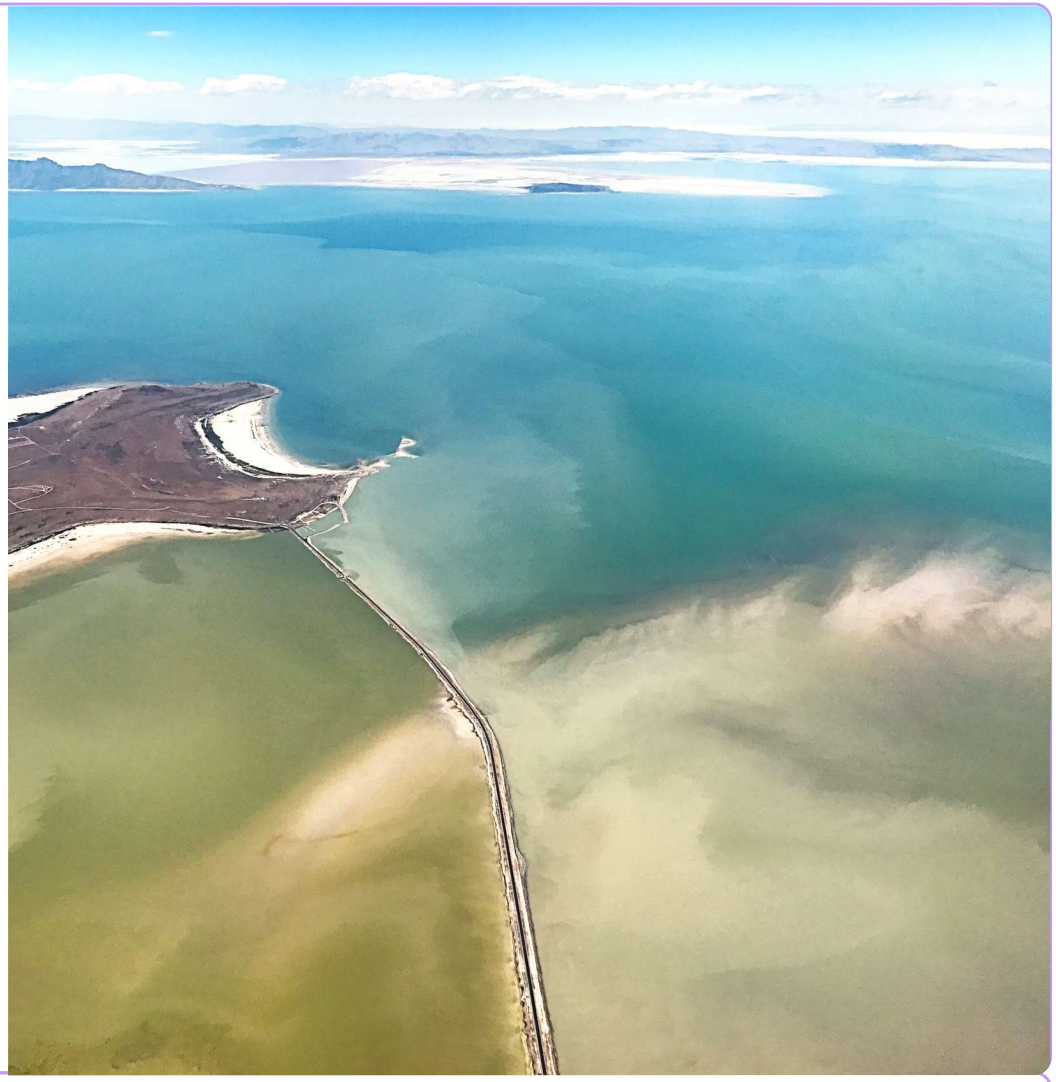
Lithium Carbonate – Certificate of Analysis

CAS-No. 554-13-2
Molecular Formula Li_2CO_3
Appearance Odorless white powder

	Assay	Spec	Units
Li_2CO_3	>99.8	>99.5	wt%
H_2O (LOI @ 110°C)	<0.1	<0.3	wt%
Na	240	<300	wppm
K	2.5	<10	wppm
Mg	13	<50	wppm
Ca	23	<100	wppm
Al	<0.5	<10	wppm
Ni	0.6	<10	wppm
Zn	<0.4	<5	wppm
Cu	<0.4	<5	wppm
Fe	<1.8	<5	wppm
Cl	<25	<100	wppm
SO_4	270	<500	wppm

Next Steps

- ✓ **Pilot plant reports completed**
- ✓ **Offtake agreement signed for 10-yr ,100% of product**
- ✓ **Engineering FEL-3 feasibility study complete**
- All permit applications in progress, with some obtained
- Commercial project financial investment decision
- Start construction in 2026
- Start operations early 2028



Lithium extraction technology
for any brine, anywhere.