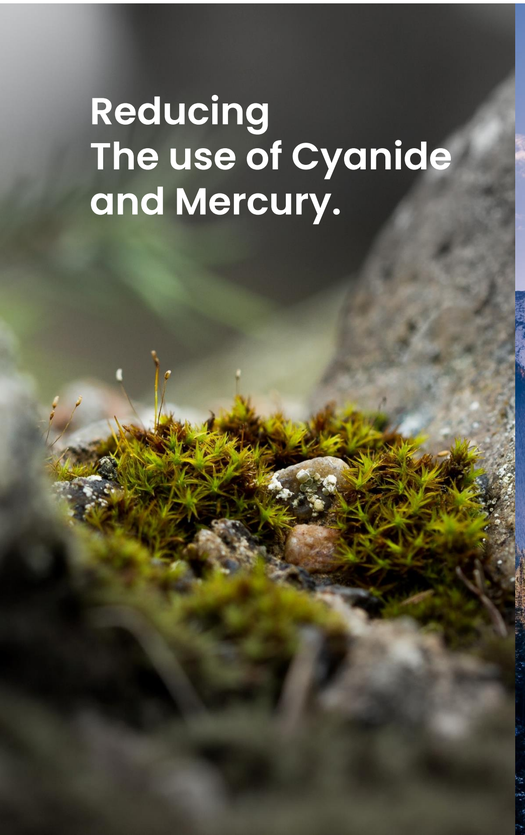
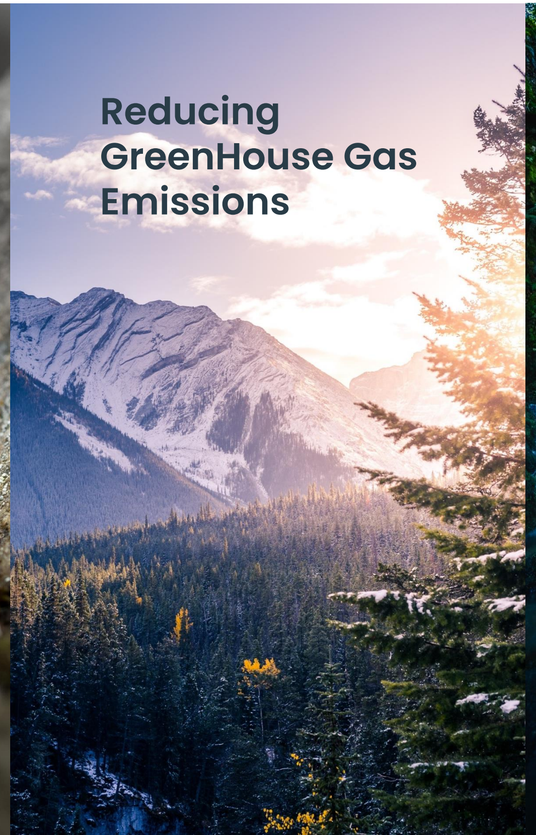
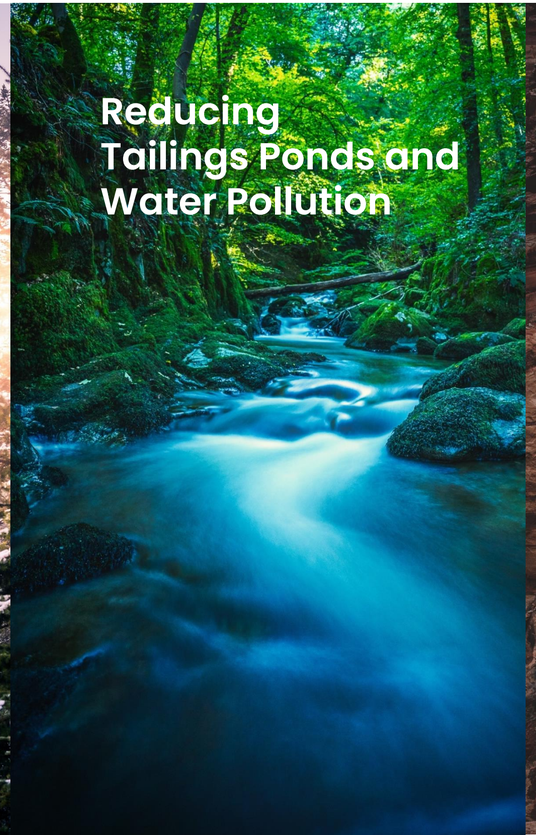
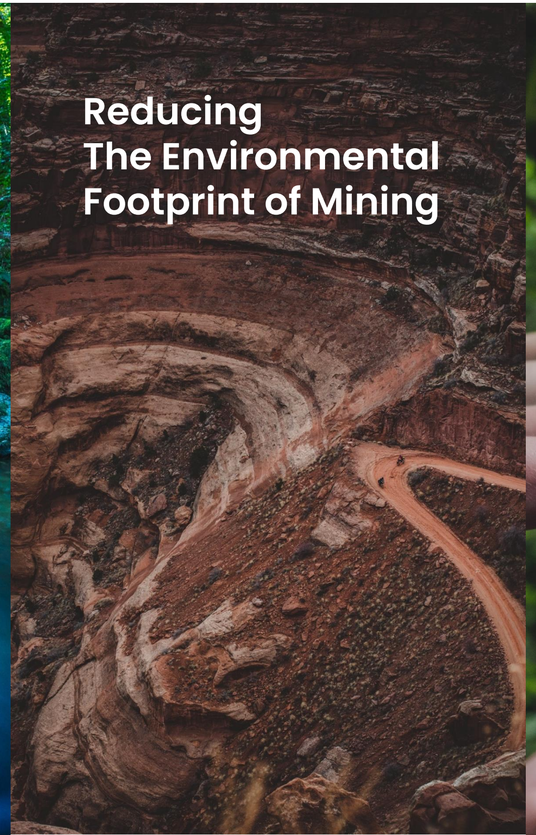
11
Grp
111.11
The Future
A New Dawn, A New Day
The Future Is Now: Mining Gold Without Moving a Rock
July 2022
Non-Invasive Mineral Extraction Technology

What if we could lower the impact of mining with environmental-friendly mineral extraction?







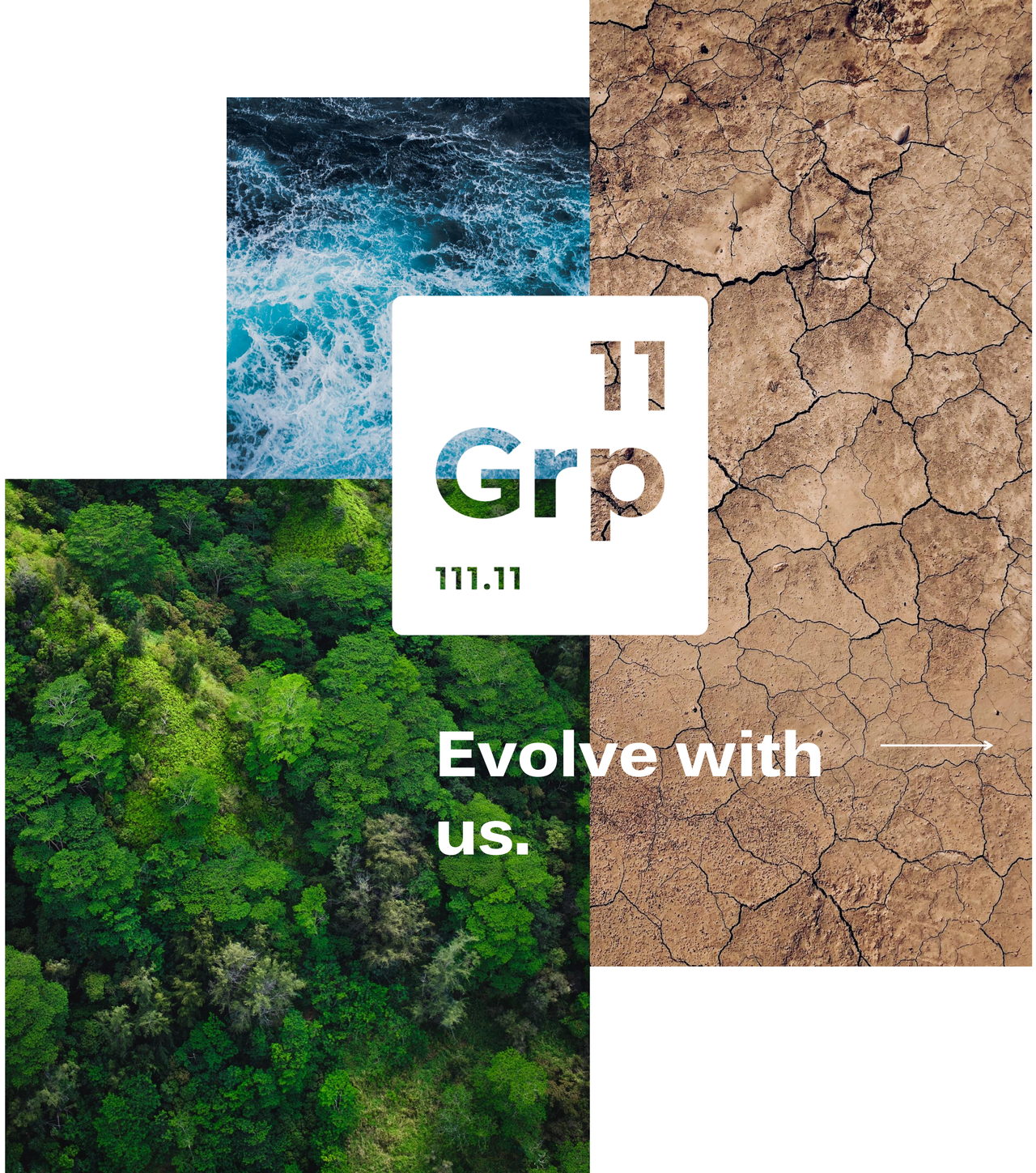


Who we are

Group 11 Technologies is a private company working to revolutionize the concept of environmentally-friendly mineral extraction by combining two proven technologies:

- ‘ISR’ or ‘in-situ recovery’
- eco-friendly water-based chemistry

Benefit: non-invasive mineral extraction that is environmentally friendly and economically viable.



The opportunity.

.01 First-to-market

Developing ‘First to market’ potential of environmentally friendly extraction technology in the gold sector.

.02 Proven application

Builds on proven application – Group 11 team proved the world’s first successful field application of the eco-friendly water-based chemistry to recover gold from a sulfide concentrate using its Secondary Recovery Unit (SRU) , replacing the need for a smelter.

.03 Environmental

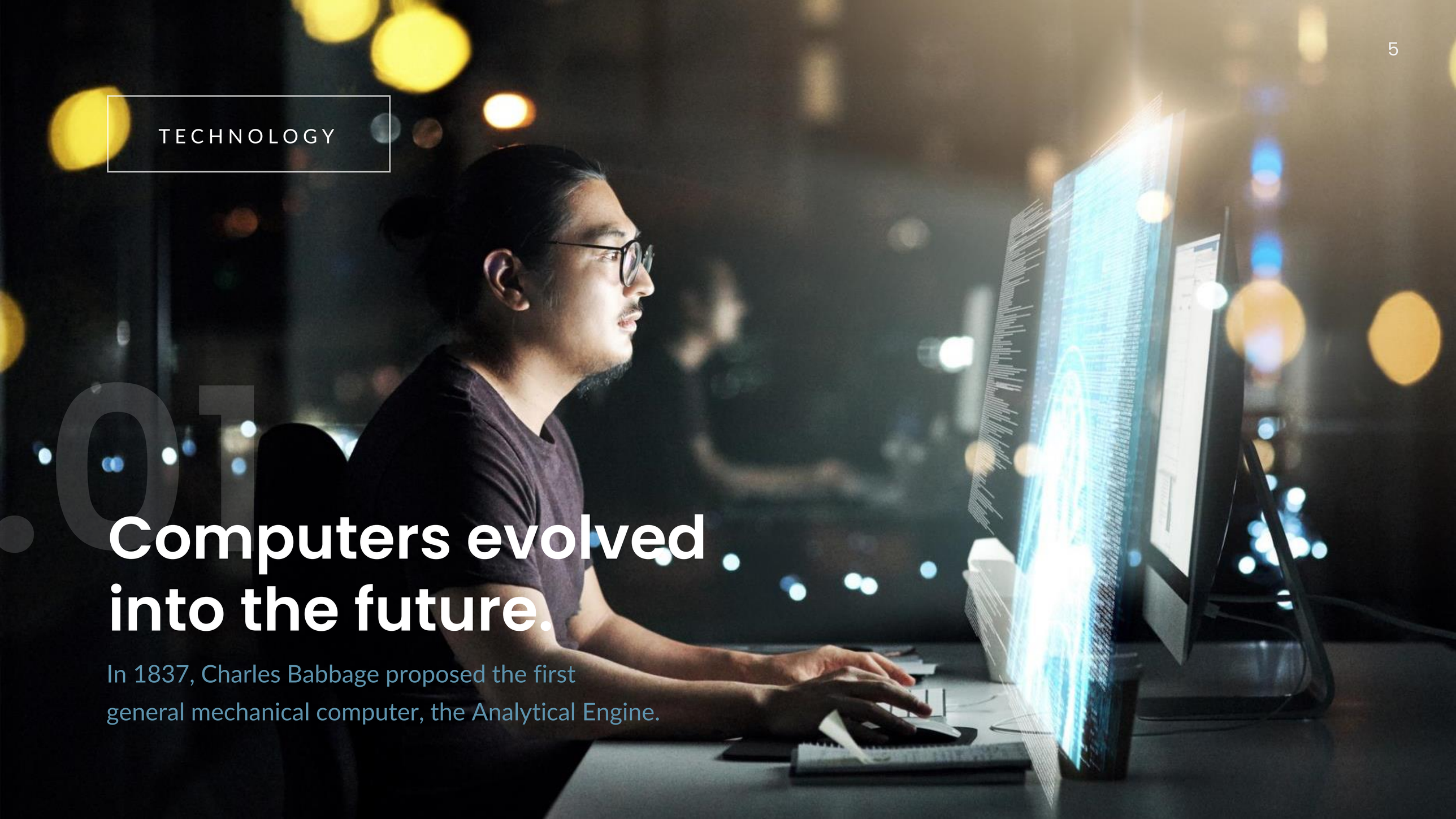
Meeting environmental principles including stewardship, water usage, energy and climate change.

TECHNOLOGY

01

Computers evolved into the future.

In 1837, Charles Babbage proposed the first general mechanical computer, the Analytical Engine.



MEDICAL

02

Non-invasive surgery evolved into the future.

Minimally invasive surgery (MIS) began with the first cystoscopes in the early 19th century.

MINING

.03

Precious Metals extraction is evolving into the future.

Non-invasive mineral extraction that is environmentally friendly and economically viable.

How Did We Get Here.

.01 Golden Predator (GP)

Builds Yukon's first bulk sample and test facility. Seeks to conduct local research, replace smelter process and test non-cyanide solutions.

.02 Field Test

GP and Envirometals conduct a first-in-the-world field test of a non-cyanide solution, replaces smelter process and creating pure green gold.

.03 Group 11 Formed

GP works with enCore, in-situ recovery experts from the uranium sector, to explore opportunity for application with other metals (gold as a first step).

Founding Partners

35.3%

ENCOREENERGYCORP.COM

EnCore Energy (EU)

ISR technical expertise in development & application of in-situ recovery technology.

35.3%

ENVIROMETAL.COM

EnviroMetal (ETI)

Use of patented license for chemical-free water-based solvent and technical assistance.

17.65%

SABRE.GOLD

Sabre Gold (SGLD)

Previously operated as Golden Predator which developed Secondary Recovery Unit (SRU) development to potentially replace the smelter process, proven application of water-based chemistry.

Who we are.
Board of Directors.

William M. Sheriff
Director

Founder and Executive Chairman of enCore Energy Corp, a co-founder of Group 11.

Duane Nelson,
Director

Founder and a Director of the Board of EnviroMetal Technologies, and co-founder of Group 11.

David Morgan
Director

Renowned precious metals analyst, he has appeared on media outlets including Fox Business, CNBC, Wall Street Journal and BNN Blomberg.

JeanAnne K. Hauswald
Director, Audit Chair

Managing Partner of Solo Management Group, previous Director of Constellation Brands and Vice President and Treasurer of the Seagram Company.

Janet Lee-Sheriff
President & Director

Co-founder of Group 11, as former CEO of Golden Predator led the world's first on-site test of the ETI eco-friendly formula in an SRU.

Who we are.
Technical Team.

Dennis Stover, Ph.D.
Chief Technical Officer

Expert in ISR development, design and operation having co-invented original ISR applications and holder of six ISR patents.

Hanif Jafari, M.Sc.
Mineral Engineering & Mining

CTO at EnviroMetal, extensive experience in extractive metallurgy, hydrometallurgy and process design.

Guy Lewis
Explosives Engineering

Expert in advanced explosive design and application; rock mechanics and in-place rubblization.

Mark Pelizza, M.Sc.
Geological Engineering

Expert in ISR permitting, application and operation with 40 years in the uranium industry.

Peter Poston, Ph.D.
Chemistry

Geologist and retired Professor of Chemistry led extensive research focused on environmental geochemistry, Laser Raman Spectroscopy, XRF and Nanotechnology.

Colin Craft
Materials Processing

Expert in materials handling, milling and metals processing. Pioneered first mill-site application of a secondary recovery unit (SRU) utilizing ETI's cyanide free gold recovery system.

Joseph Harrington
Graduate Research, Metallurgy

National award-winning expert in mine-related reclamation holding 6 patents on in-situ metal immobilization of metals in groundwater, pit-lakes, soils and disturbed rock.

Richard Cherry
Mechanical Engineering

40 years industry experience with expertise in ISR project evaluation, application made for patents related to ISR and drill technology.

“Not everything that is faced can be changed, but nothing can be changed until it is faced.”

James Baldwin

Problem:

01.
Cyanide & Mercury.

These industry standard chemicals are efficient and cost effective, generally well managed, but there are concerns about environmental impact.

02.
Commodity Demand.

Green Energy demands only accelerate an already increasing global demand for metals.

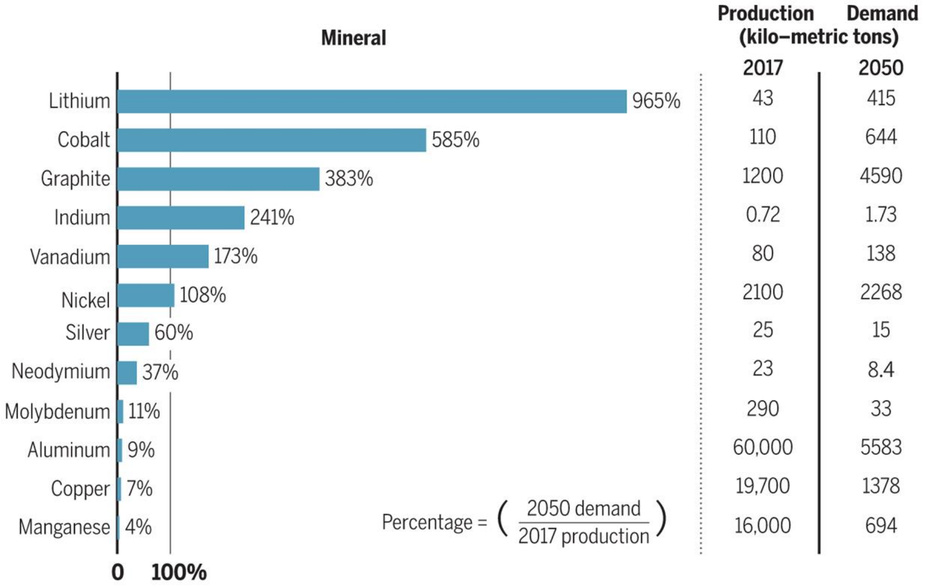
03.
Decreasing Quality.

As demand increases and grades reduce, longer haul distances, higher waste ratios, expanding mine pits and waste piles, increasing environmental impact, CO2 emissions and energy consumption.

The world demands metals and a clean environment.

Solution: Group 11 Technologies use of a recyclable eco-friendly solution and in-stitu recovery to create non-invasive extraction.

GROWTH IN MINERAL NEEDS FOR LOW-CARBON ENERGY TECHNOLOGY.



All production and demand data reflect annual values. 2017 data reflect annual production for all users. 2050 data reflect estimated demand for only low-carbon energy technology users.

Problem:

01.
CO2 Emissions.

Globally 28,000 mine hauling trucks emit 68 million tons of CO2/year – equivalent to the total greenhouse gas of Finland. Mineral processing (smelters etc.) adds significantly.

02.
Water Use.

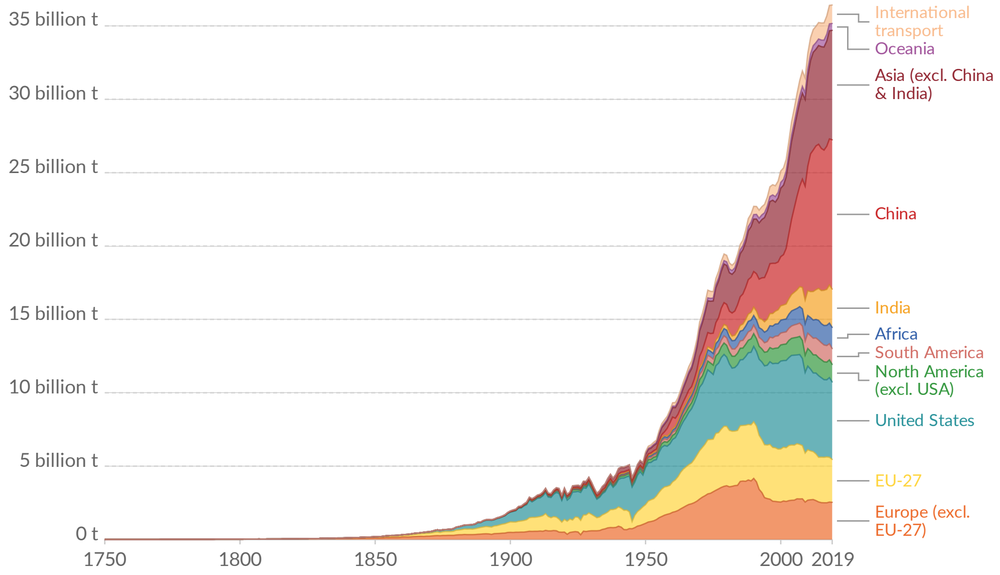
This expensive precious shared and finite resource is a growing source of conflict under increasing pressure to ensure access by all users. ISR uses significantly less water than conventional mining.

Source: Carbon Dioxide Information Analysis Center (CDIAC); Global Carbon Project (GCP)
Note: The difference between the global estimate and the sum of national totals is labeled "Statistical differences". OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

Global annual total CO2 emissions.

Solution: Group 11 Technologies' objective combines in-situ recovery with an eco-friendly water-based chemistry creating a closed loop system to minimize water use with a near net zero solution (eliminates mine trucks and reduces processing).

ANNUAL TOTAL CO2 EMISSIONS, BY WORLD REGION



In 50 years of ISR in the uranium space in the US, there have been ZERO incidents of contamination to groundwater.

The challenges in the Mining industry.

.01 Environment.

Environmental concerns to address decarbonization in the sector, clean air technology, minimizing environmental footprints and water use.

.02 Demand.

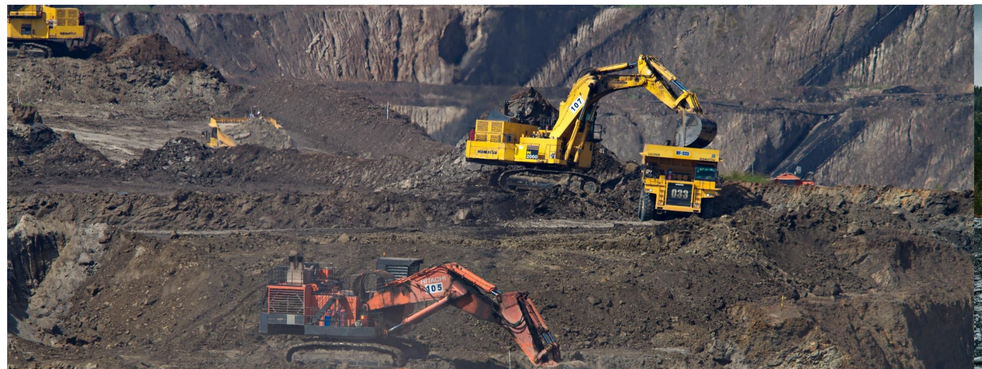
Continually increasing demand for commodities and increasing costs (Increasing demand due to solar, wind and electric cars).

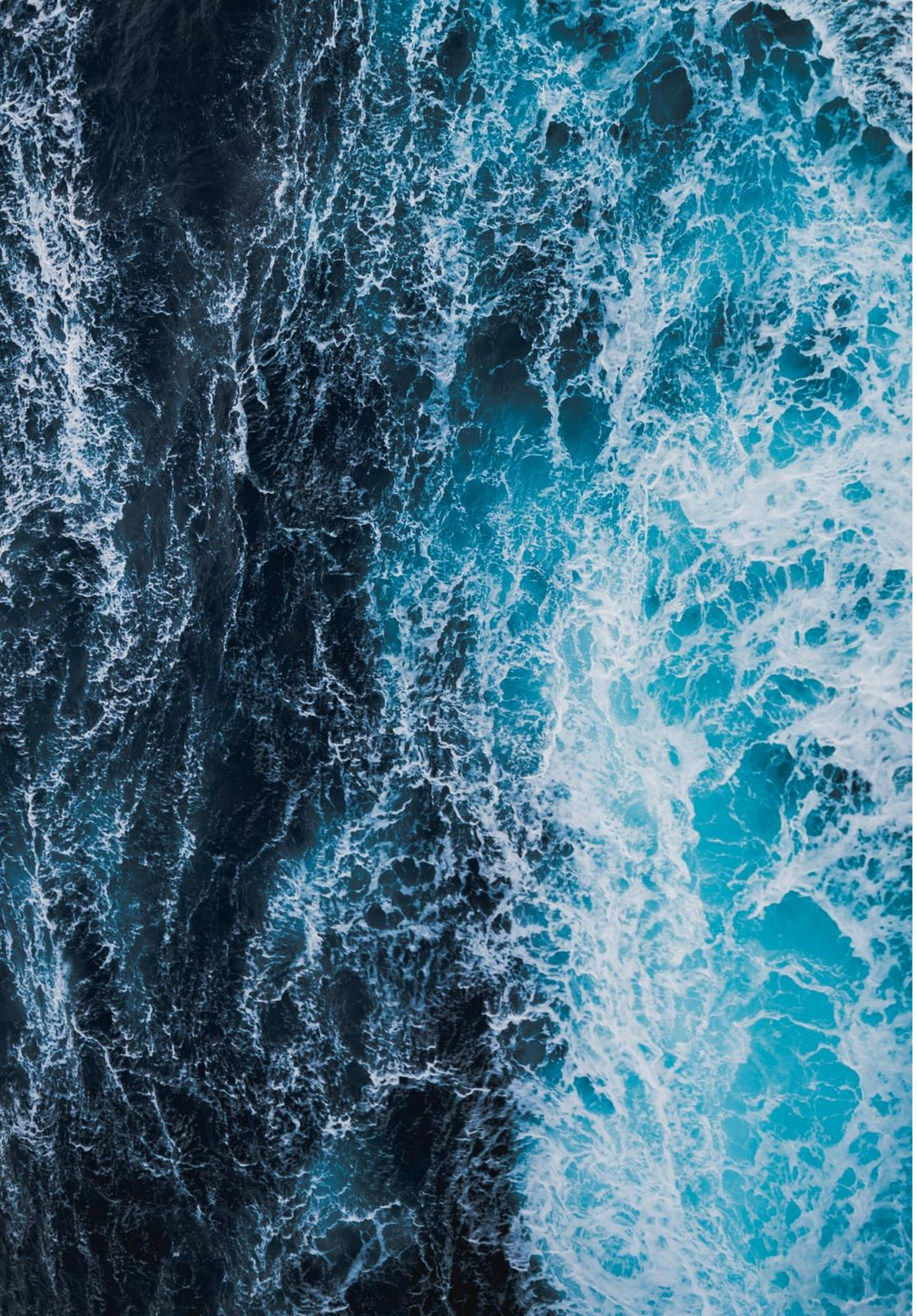
.03 Responsible.

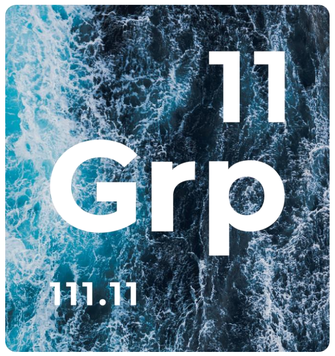
Demand from investors to be more environmentally and socially responsible.

“The global mining equipment market size was valued at USD 144.37 billion in 2019 and is expected to grow at a compound annual growth rate (CAGR) of 12.7% from 2020 to 2027.”

- Source: grandviewresearch.com







What we are doing to meet the challenge.

Changing the way the world recovers GOLD by combining in-situ recovery (in place mining) with an eco-friendly water-based chemistry.

- Committed to leading the development and application of environmentally and socially responsible mineral extraction
- Provide an alternate solution to conventional open pit and underground mineral extraction
- Provide an alternative to conventional mills & smelters for mineral processing

See how ISR works.

Play video.

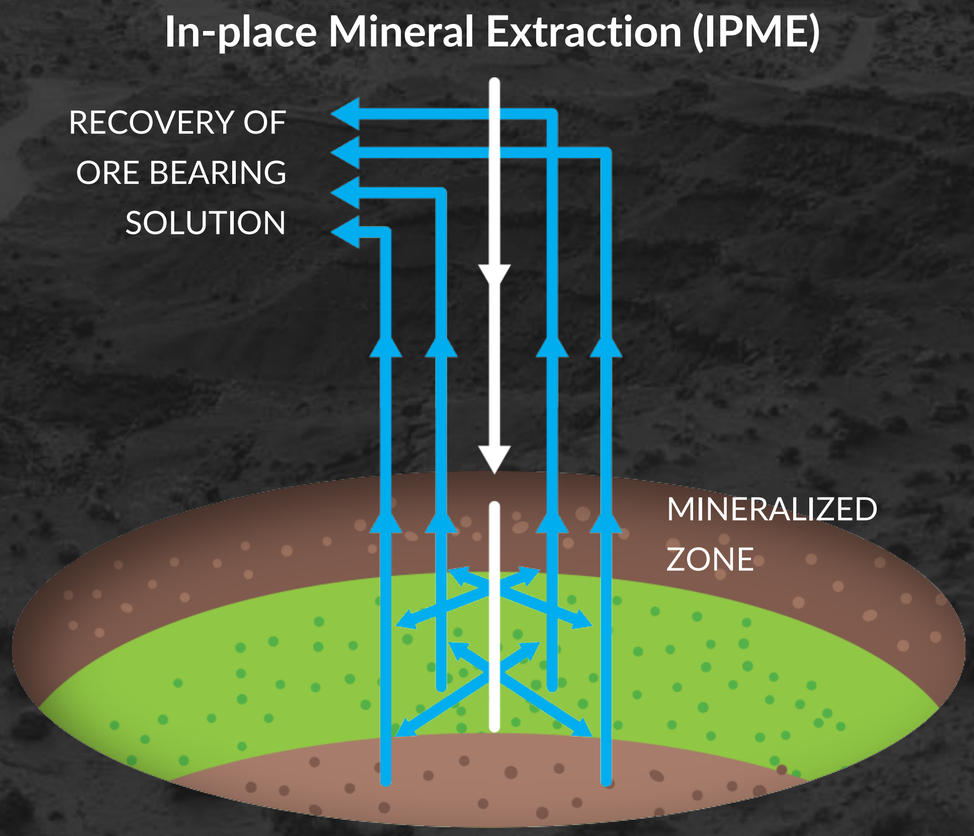
In-Situ Recovery (ISR)

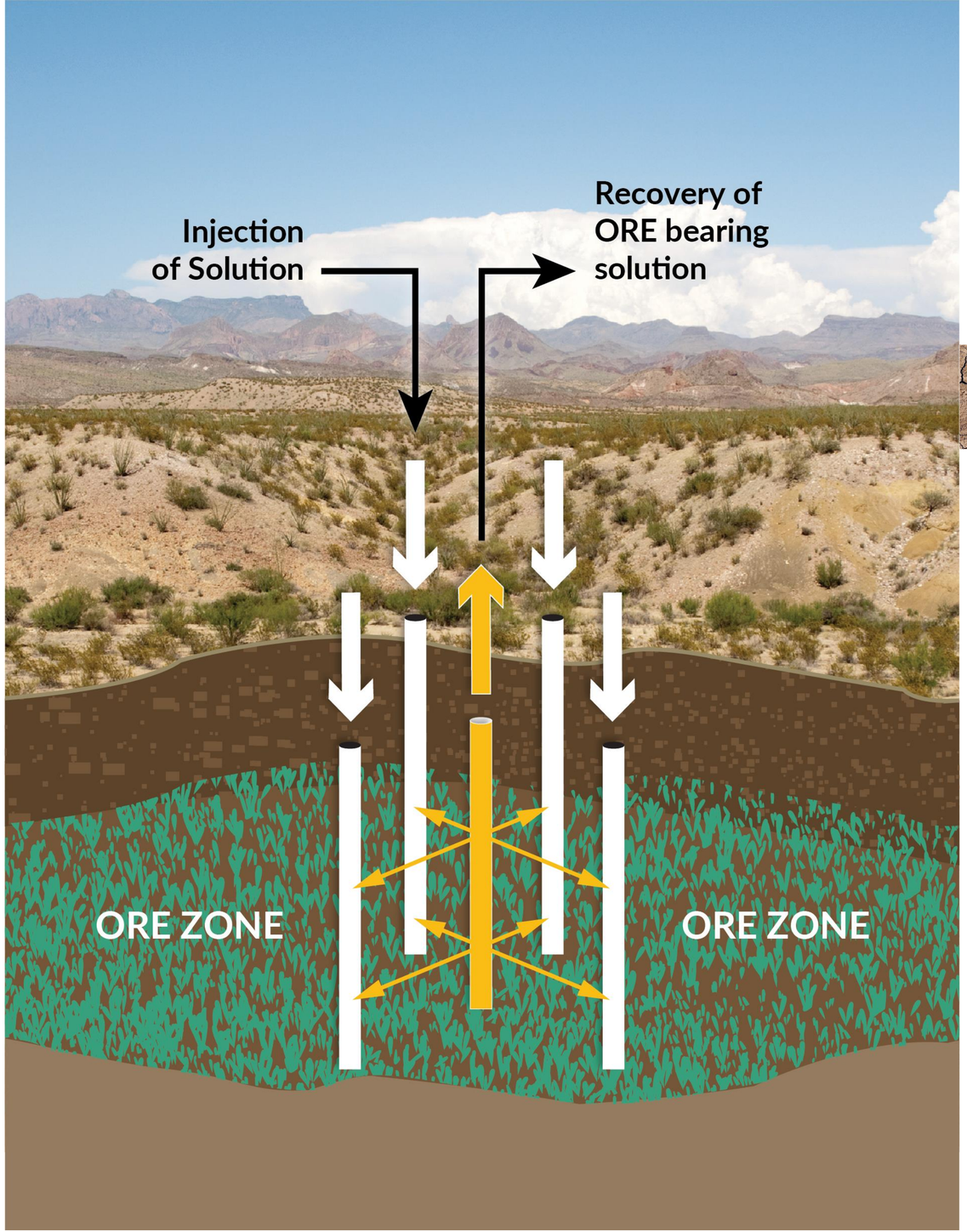
In-Situ Recovery Operation

Conventional Mining

What is In-Situ Recovery (ISR)?

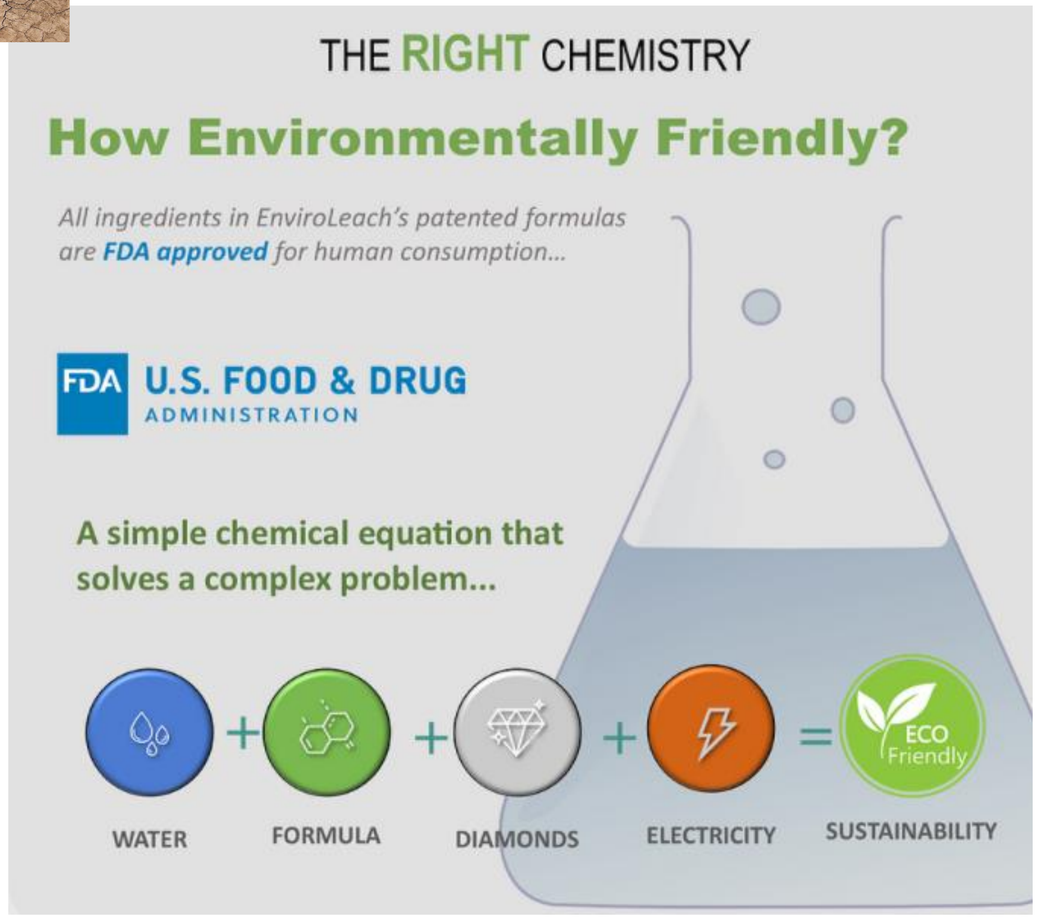
- In-situ recovery (ISR) is a minimally-invasive extraction process developed in the US uranium sector, now expanded to other minerals and
other countries
- ISR, in 50 years of US operations, has ZERO incidents of groundwater contamination
- The ISR process involves pumping fluid underground to recover valuable minerals without surface disturbance
- The fluid is a mix of water and chemicals added to accelerate the mining process, is then pumped to the surface for the minerals to be recovered for sale
- The fluid is recycled and circulated back through the rock to recover more minerals until it no longer recovers a viable amount of minerals,
- The site is rehabilitated and returned to its original state and land use
- ISR is carefully regulated in the US and all sites are monitored by monitoring wells to protect the land and water





The Group 11 competitive advantage

Combining two proven technologies.

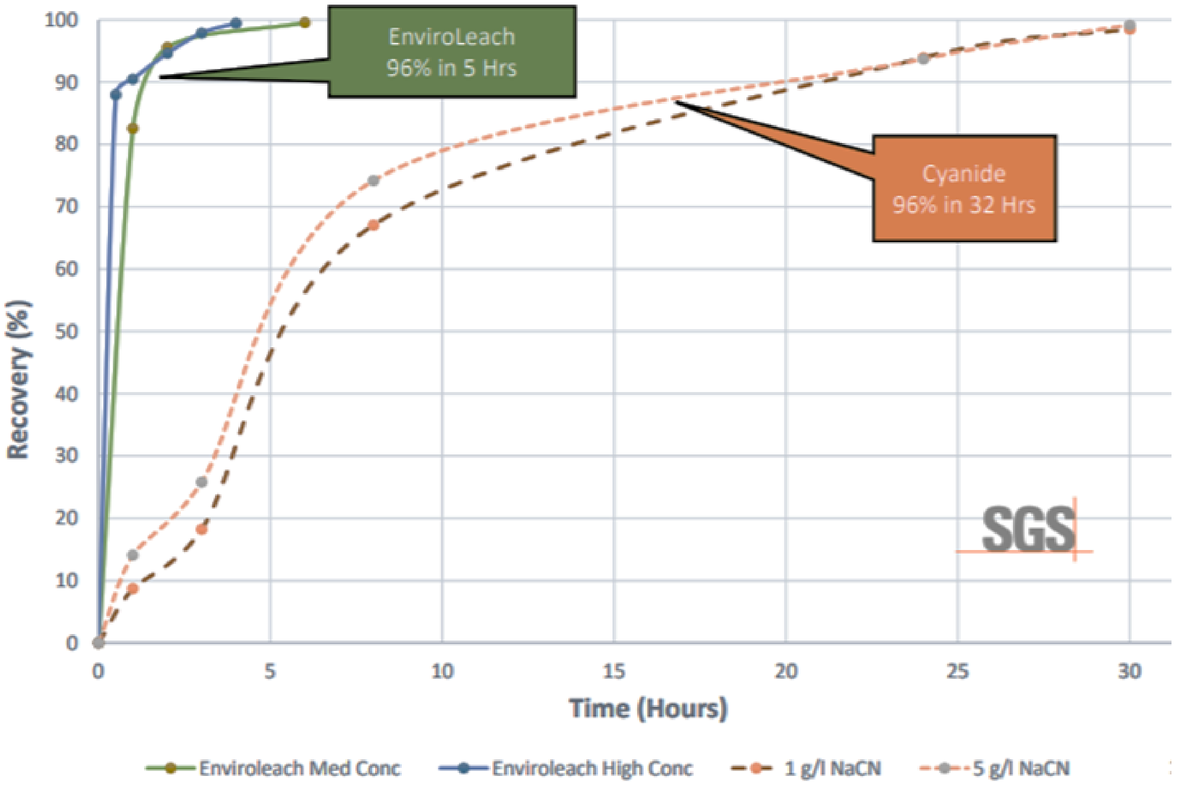


Non-cyanide chemistry.

EnviroMetal Technologies provides Group 11 exclusive license for its water-based chemistry for ISR and SRU development and application. EnviroMetal has strong intellectual property rights and patents.

	CYANIDE	ENVIROMETAL
High gold recoveries	●	●
Fast leach kinetics	●	●
Environmentally safe & sustainable	○	●
Safe to handle & transport	○	●
Socially acceptable	○	●
No potential for dangerous off-gassing	○	●
No Dangerous waste-water effluent	○	●
Functions in the presence of copper	○	●
Has potential for In-Situ gold recovery	○	●

EnviroMetal vs. Cyanide



Economic and safety advantages of In-Situ Recovery

ADVANTAGES OF ISR	CONVENTIONAL MINING	IN-SITU RECOVERY
Lower Operating Costs	○	●
Lower Capital Costs	○	●
Flexible Mine Planning	○	●
Smaller Workforce	○	●
Short Lead Time for Mine Development	○	●
Safer Work Environment	○	●
Reduced Site Disturbance & Reclamation Costs	○	●
Reasonable Permitting Timelines	○	●

Reverse Osmosis Units

Environmental Advantages of In-Situ Recovery

ENVIRONMENT ADVANTAGES OF ISR	CONVENTIONAL MINING	IN-SITU RECOVERY
Fast Leaching Kinetics	●	●
Surface Disturbances Temporary	○	●
Minimal Consumption use of Water	○	●
No Solid Mine Waste	○	●
No Mill Tailings	○	●
No Dust Mining	○	●
No Dust from Tailings	○	●
Minimal Local Social Impact (small labor force)	○	●

Wyoming ISR Facility

History of In-Situ Recovery In the US.

1940's

Race for uranium! (1946 Energy Act, AEC)

1950's

Uranium frenzy continues: Discovery of large, high grade, deposits with underground and surface open pit.

1960's

Birth of In Situ Recovery and Commercial Nuclear Power: Recovery of Uranium from Low Grade Mineralization Using a Leach in-place Process.

1970's

Decade of In Situ Recovery commercial development and expansion

Today

World-wide acceptance of ISR with over 50% of all uranium mining in the world

Facts:

- There has never been a drinking water supply contaminated by ISR
- ISR facilities are one of the most highly regulated industries in the United States
- ISR facilities are highly monitored and uses less groundwater than conventional mining
- There are excellent examples of successful groundwater restoration in the US
- ISR mining is one of the safest industries in the U.S.

Does it work?

Proven success with 1st in the world field testing:
The SRU (Secondary Recovery Unit)

SRU in operation

.01 Step

Partner Sabre Gold (previously Golden Predator) developed and operated the mobile SRU in Canada's Yukon to replace the smelter process, create local solutions and replace cyanide in the process.

.02 Step

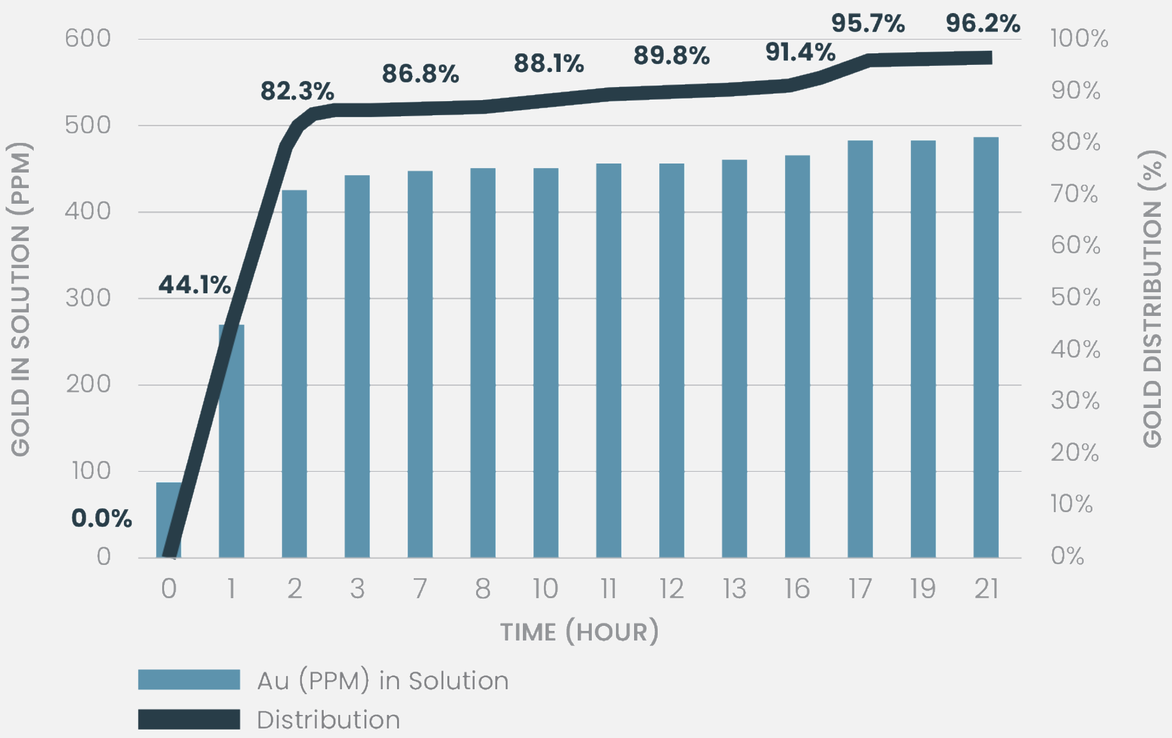
Utilized the EnviroLeach (ETI) water-based chemistry as a safe, recyclable, environmentally friendly alternative for gold leaching (cyanide-free).

.03 Step

Completed 11 site tests utilizing the same ETI formula; results led to formation of Group 11.

Safe, Environmentally-friendly gold leaching utilizing EnviroMetal Technologies Inc. cyanide-free solution.

Leach Recovery Test #2



Gold Sludge from Electrowinning Cell
Assayed @ 98.648% **Gold**

.01 Benefit

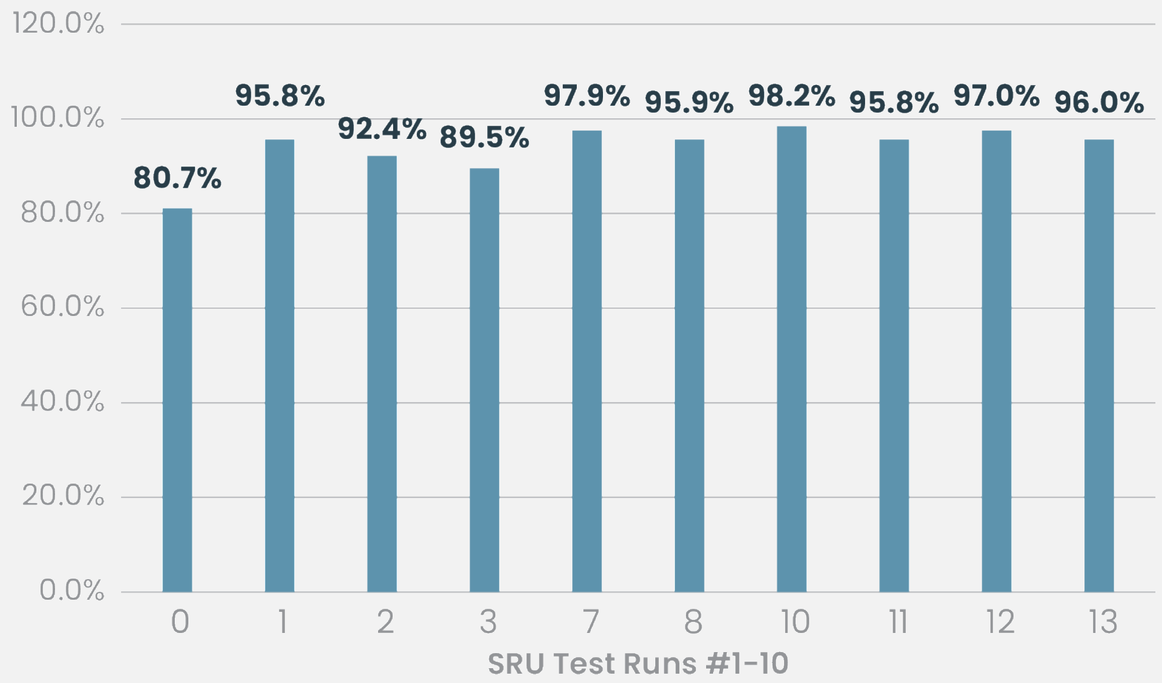
Leach kinetics similar to, or exceeding that of, cyanidation (ore dependant)

.02 Benefit

Portable SRU capacities scalable

SRU 100% green gold bar.

Total Recoveries



Next Steps

1st test commercial project:
Rattlesnake Hills, WY

With the selection of the first test project Group 11 is:

- Conducted testing over a wide variety of parameters based on a comprehensive characterization of the site, the mineralization and environmental setting
- Successful completed laboratory testing of drill core to determine amenability to gold extraction from the eco-friendly water-based chemistry
- Large diameter drill program (2022) for additional test material
- Conducting a full assessment of ISR potential for a future site test
- Permitting for potential commercial test

Rattlesnake Gold Project, Wyoming

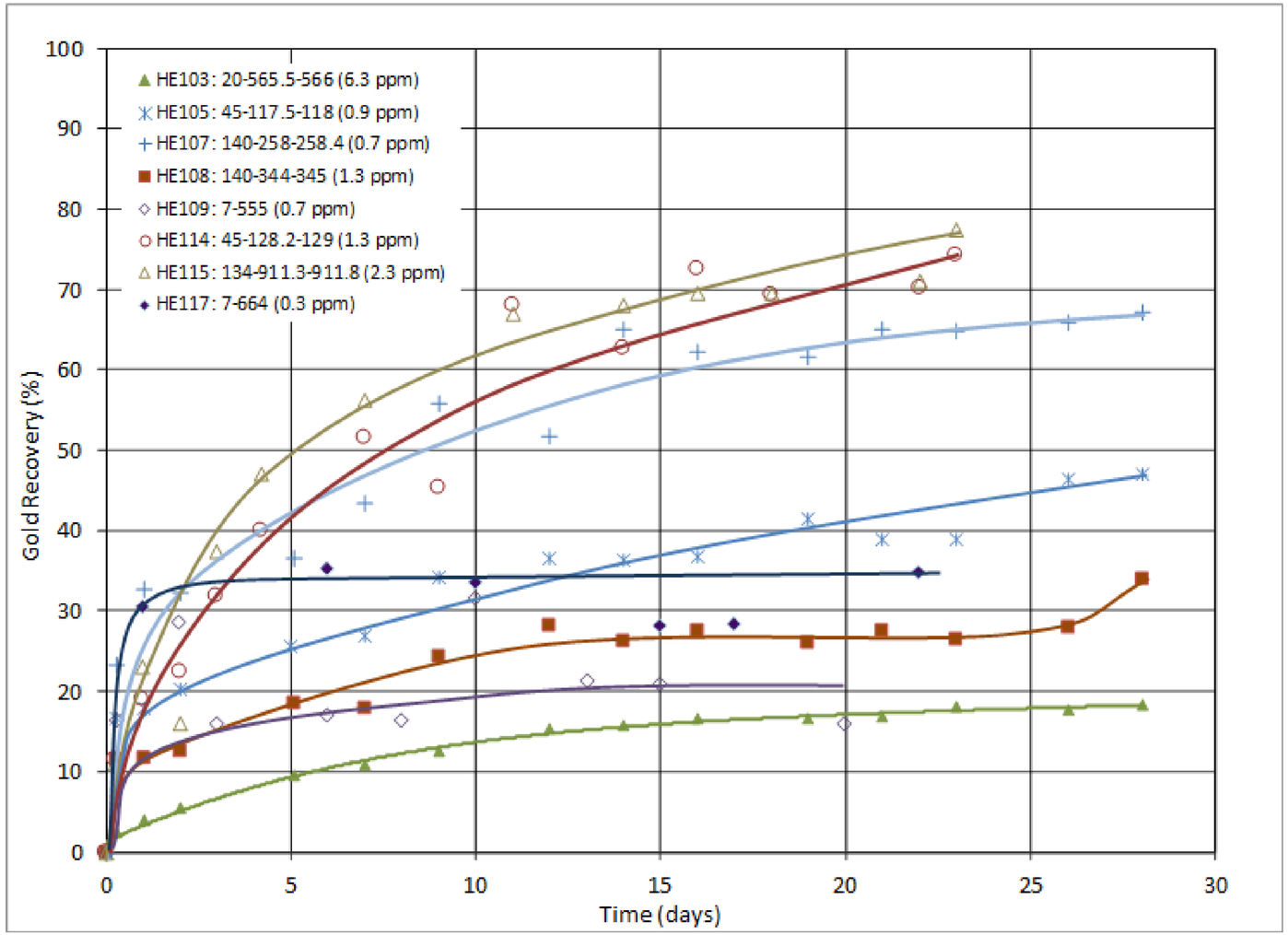
Phase 1 Testing

Uncrushed Sample Testing

The half core samples were leached whole and uncrushed in ETI's lixiviant at 28% - 45% pulp density for 22 to 92 days, at a neutral pH, to investigate gold recovery for ISR application. Gold recoveries ranged from 15.9% to 77.5%, averaging 48.2%. These samples were tested whole without crushing to more closely emulate expected results from an ISR environment.

Select Samples of Uncrushed Half-Core Leach Testing

	Gold Grade (g/t)			
Test Number	Calc. Head	Pulp Density %	Leach Time (days)	Gold Recovered (%)
HE103	6.33	40.6	28.1	18.4
HE105	0.9	40.4	28.1	47.0
HE107	0.73	39.3	28.1	67.1
HE108	1.31	40.7	28.1	34.1
HE115	2.30	38.5	23.0	77.5



Recovery Curves of Uncrushed Half-Core Leach Testing

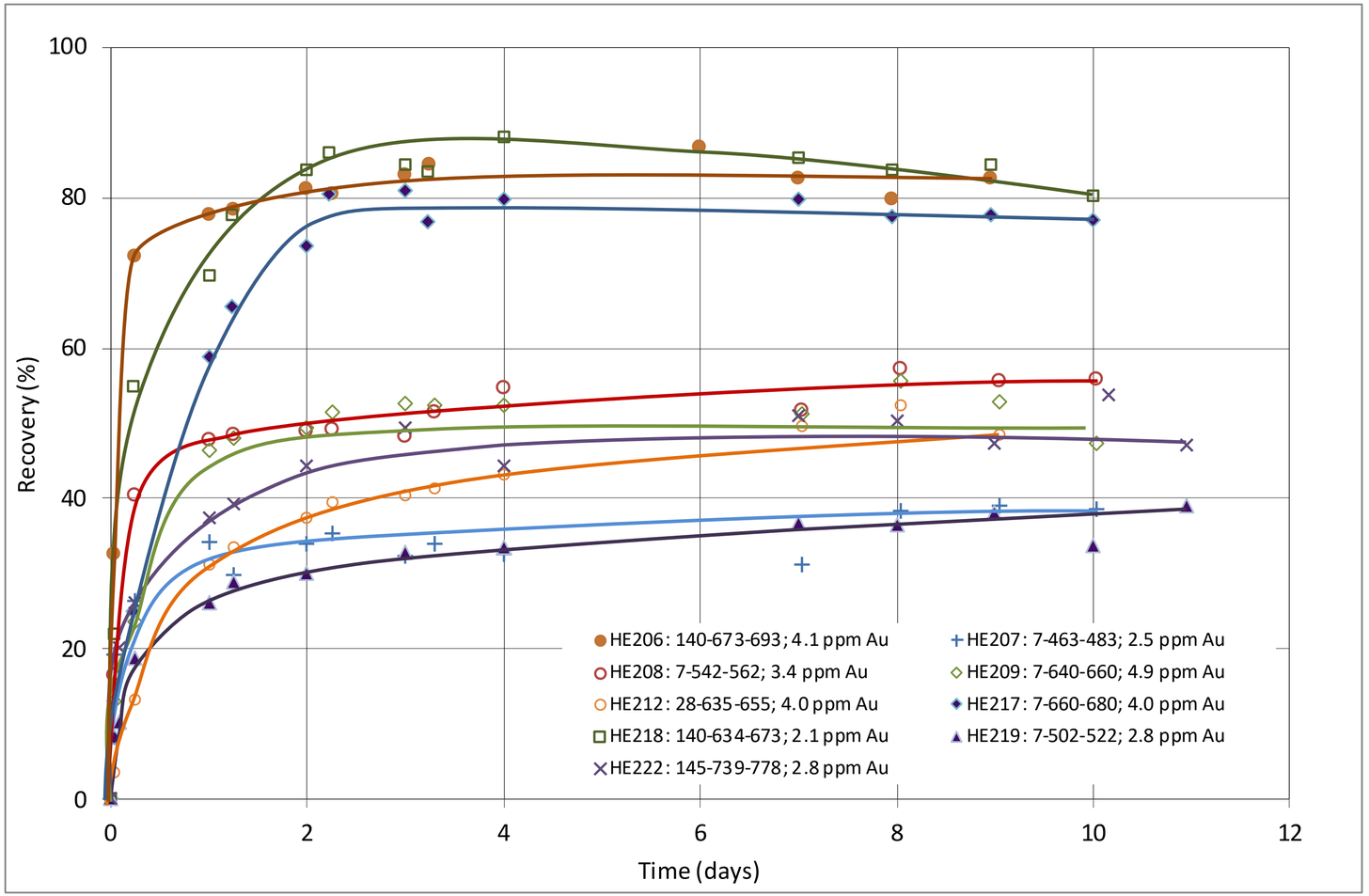
Phase 1 Testing

Bottle Roll Testing

The rock samples were crushed to -2.5 mm and tested via bottle roll methodology with ETI's lixiviant at 30% pulp density for 9 to 28 days at a neutral pH to investigate gold recovery. Gold recoveries ranged from 38.3% to 89.5%, averaging 61.4%. Leaching with the bottle roll on crushed material provided faster kinetics and higher recoveries, as would be expected, due to the increased surface area exposed to the solution.

Select Samples of Crushed Core Bottle Roll Test Results

	Gold Grade (g/t)			
Test Number	Calc. Head	Assayed	Leach Time (days)	Gold Recovered (%)
HE201	8.96	8.84	9	54.3
HE202	14.21	14.03	9	62.9
HE203	7.10	7.62	9	75.1
HE204	1.46	1.57	9	83.6
HE205	8.63	6.39	9	48.1
HE206	4.10	3.65	9	82.5
HE207	2.49	2.48	10	38.6
HE216	0.87	0.72	10	89.5



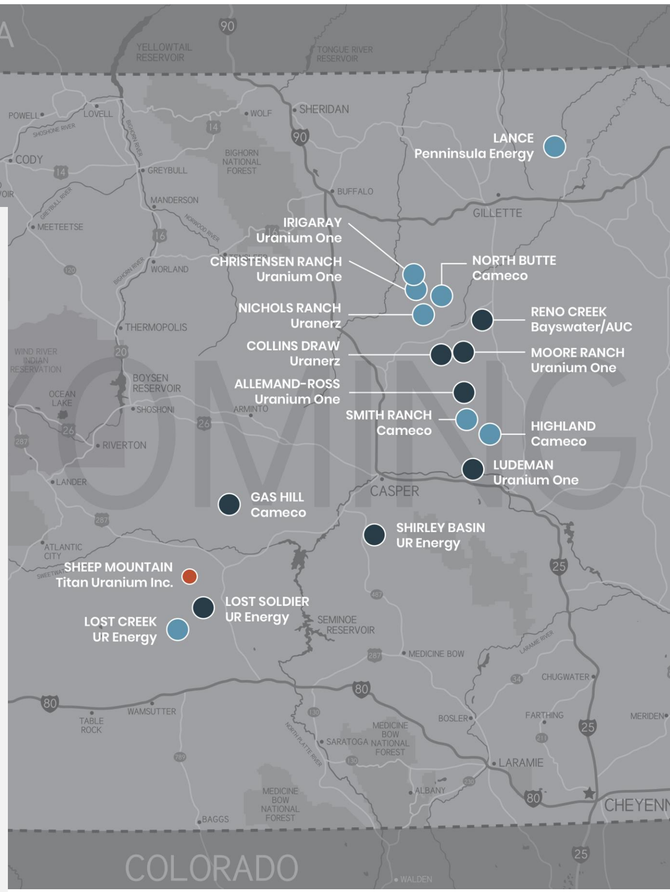
Recovery Curves of Bottle Roll Testing

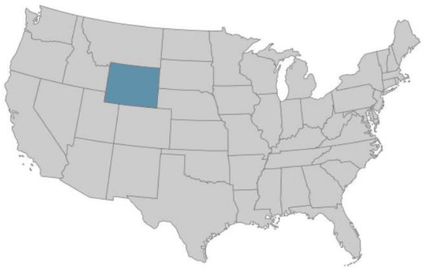
Why Rattlesnake Hills?

- WY is rated as one of the top mining jurisdiction in the U.S. (coal, uranium, trona, oil & gas)
- WY regulators understand & effectively legislate ISR better than anywhere else in the U.S.
- Gold grades throughout the project vary from low to high, allowing for testing various grades response to the ISR process
- Significant drilling (over $40MM USD) and investment has established gold occurs in a variety of geological settings, allowing for testing of various styles of mineralization
- Gold occurs across a large physical area allowing for testing under various conditions & through several rock types & chemistries
- Gold occurs under relatively accessible topography, an important consideration for wellfield development

Select Drill Highlights

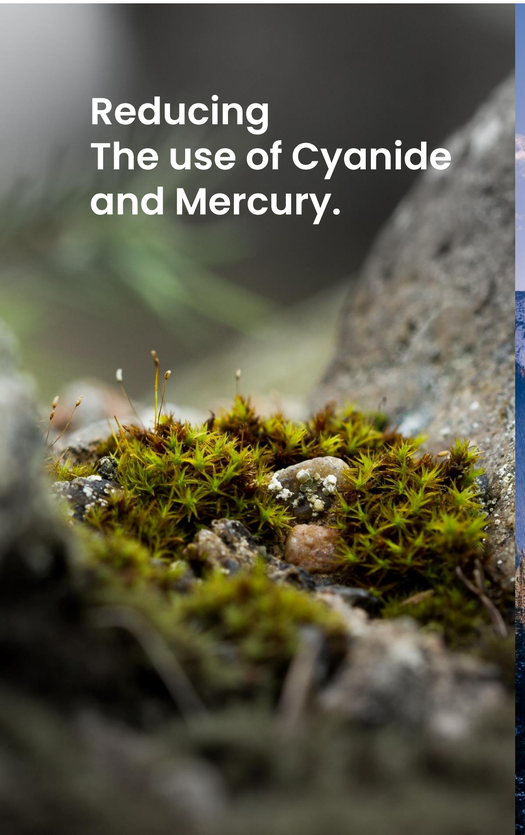
Hole	From (m)	To (m)	Length (m)	Au (g/t)
RSC-007	108.20	344.36	**236.16**	**1.85**
RSC-019	83.82	181.36	**97.54**	**1.21**
RSC-020	143.26	198.91	**55.66**	**9.73**
Incl.	160.02	176.78	**16.76**	**26.21**
RSC-039	25.91	176.78	**150.88**	**2.08**
RSC-042	147.83	224.03	**76.20**	**1.91**
RSC-089	83.82	213.36	**129.54**	**2.08**
RSC-089	216.41	243.84	**27.43**	**7.85**
RSC-132	112.78	329.18	**216.41**	**1.58**
RSC-135	83.82	160.02	**76.20**	**4.68**
Incl.	144.78	147.83	**3.05**	**45.30**
RSC-141	30.48	172.21	**141.73**	**1.90**
RSC-144	205.74	251.46	**45.72**	**3.23**
RSC-145	137.16	192.02	**54.86**	**3.20**
Incl.	143.26	147.83	**4.57**	**15.67**
RSC-145	204.22	281.94	**77.72**	**4.20**
Incl.	239.27	240.79	**1.52**	**128.00**

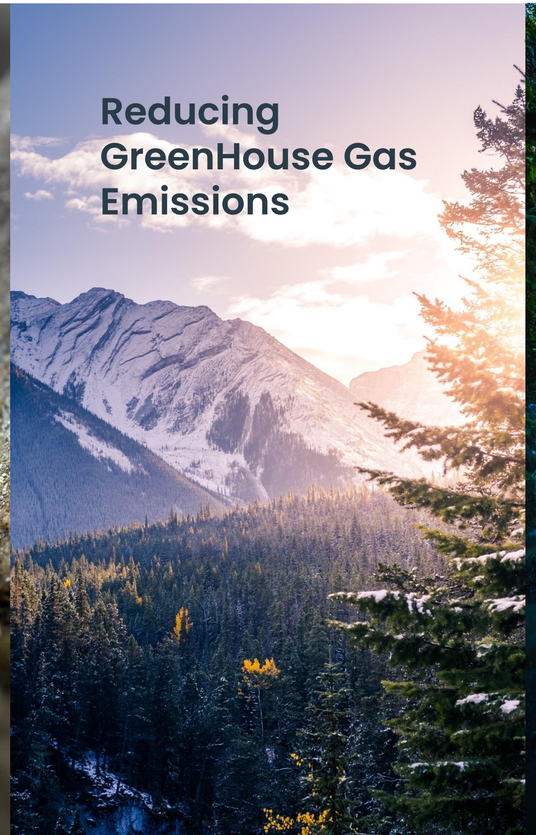


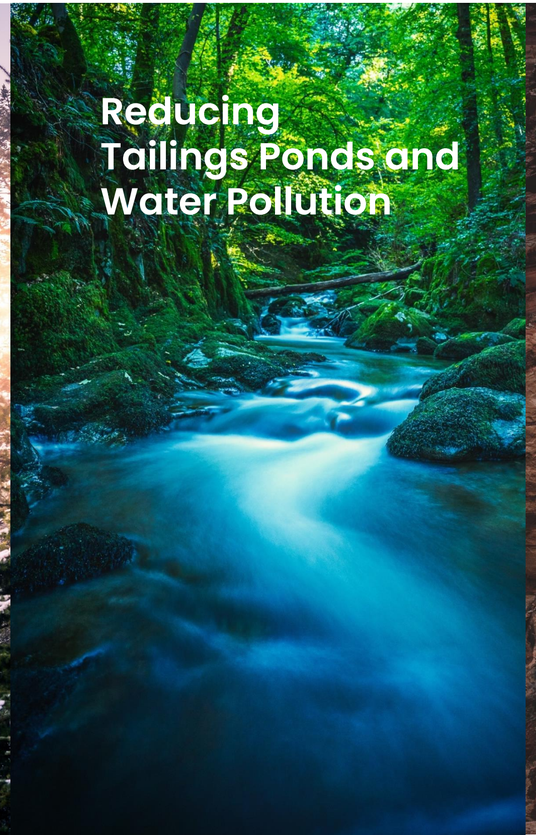


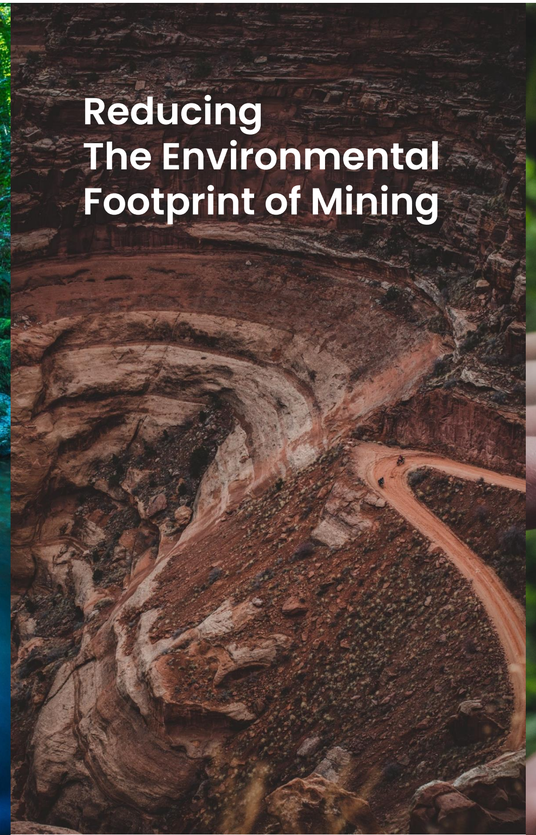
Key to success: The Right Time, The Right Place, The Right People

Developing ‘First to market’ potential, combining two proven technologies with a strong team with proven success









The Future Is Now.

GROUP 11 TECHNOLOGIES INC.
info@gr11tech.com
www.gr11tech.com
214-304-9552

Group 11 is a group of elements in the periodic table, also known as the coinage metals, consisting of copper (Cu), silver (Ag), and gold (Au). They were most likely the first three elements discovered