hocol

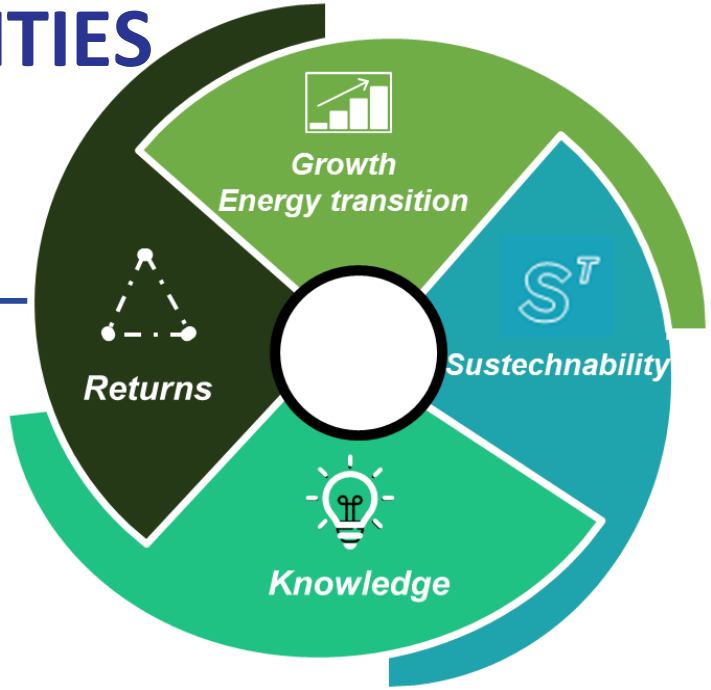
Making smart decisions for an asset, integrating models achieving efficient and sustainable operations for HOCOL

September 21-23th / 2022

Lucerne - Switzerland

HOCOL STRATEGIC PRIORITIES TO BE SUSTAINABLE.

Hocol belongs to Ecopetrol Business Group



PEOPLE

ENVIRONMENT

AGILITY

GROWTH

COMMUNITIES

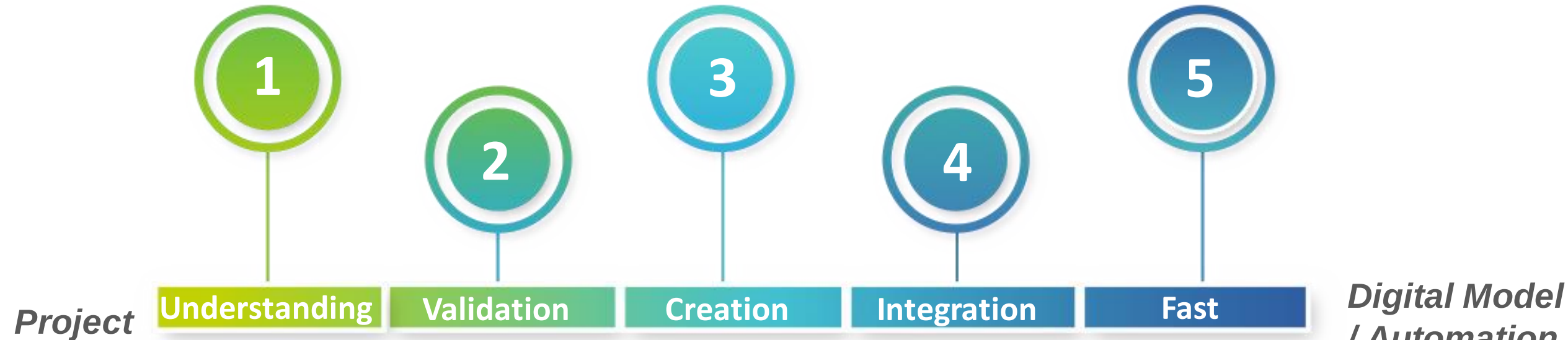
GENERATION OF VALUE

SLB-Private

BENEFITS OF APPLYING INTEGRATED MODELS

INCREASE RESERVES	Up to 10% RF: 80%
ANALYSYS & SENSITIVITIES	Unlimited full integrated model with insights all variables
DIGITAL TRANSFORMATION	Use Big Data & Cloud
PRODUCTIVITY INCREASE	Full cycle analysis reduces 80% of manpower time.
CONNECTIVITY & TEAM WORK	Integration Reservoir, Wells & Facilities
EMISIONS REDUCTION	Zero CO2 emissions Arjona Case

PROJECT SCOPE - WHAT ARE WE EXPECTING?



SLB-Private

hocol

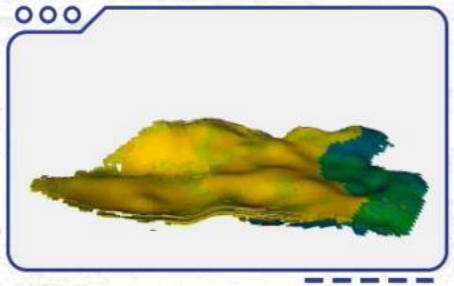
GAS ASSESTS IN HOCOL, COLOMBIA

hocol

Reservoir Modeling + Wells & Networks

Mamey

Bonga

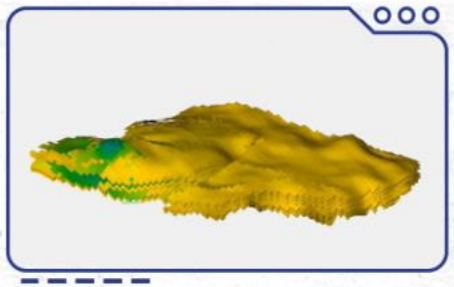


PETREL

IX INTERSECT

ECL ECLIPSE

OFM OIL FIELD MANAGEMENT

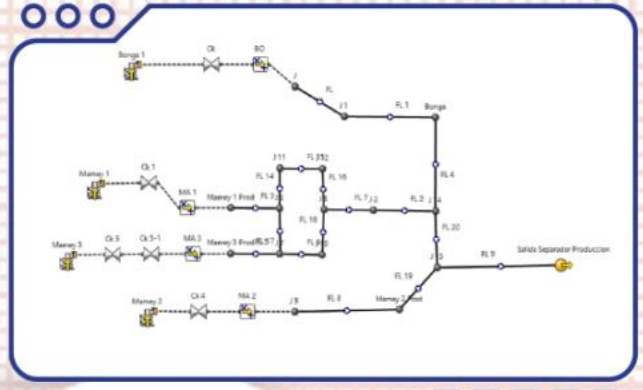


hocol

Reservoir Modeling +
Wells & Networks +
Process & Facilities

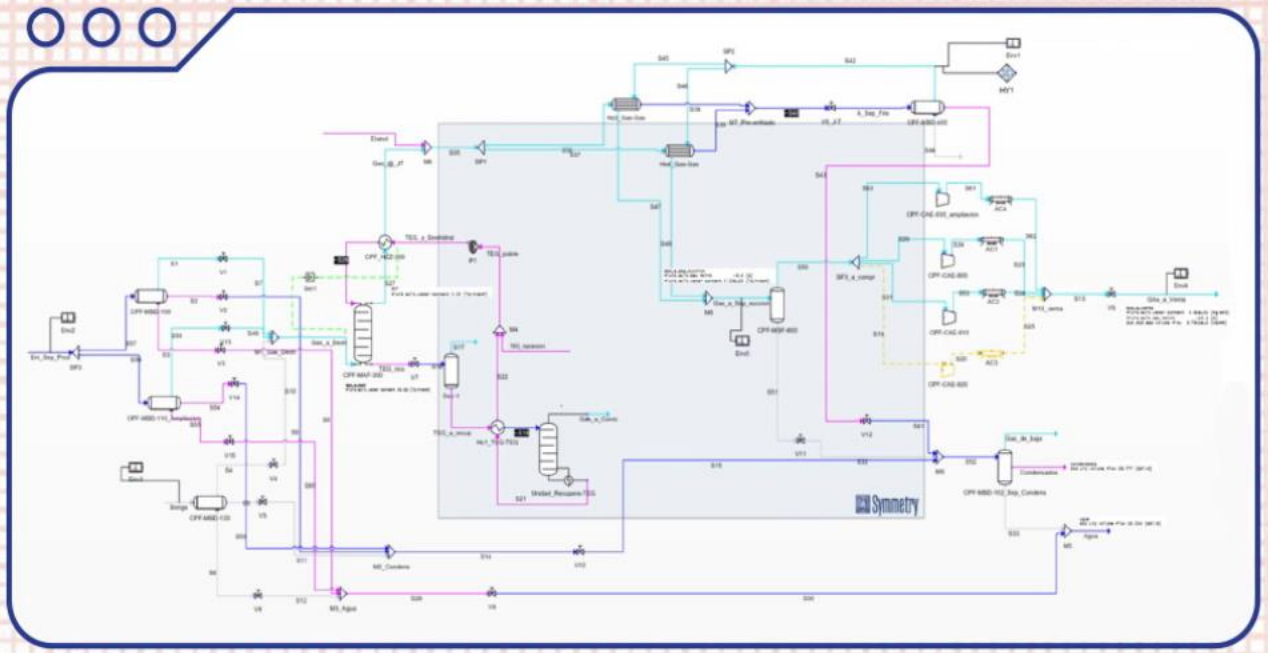
PIP PIPESIM

OLGA DYNAMIC MULTIPHASE FLOW SIMULATOR

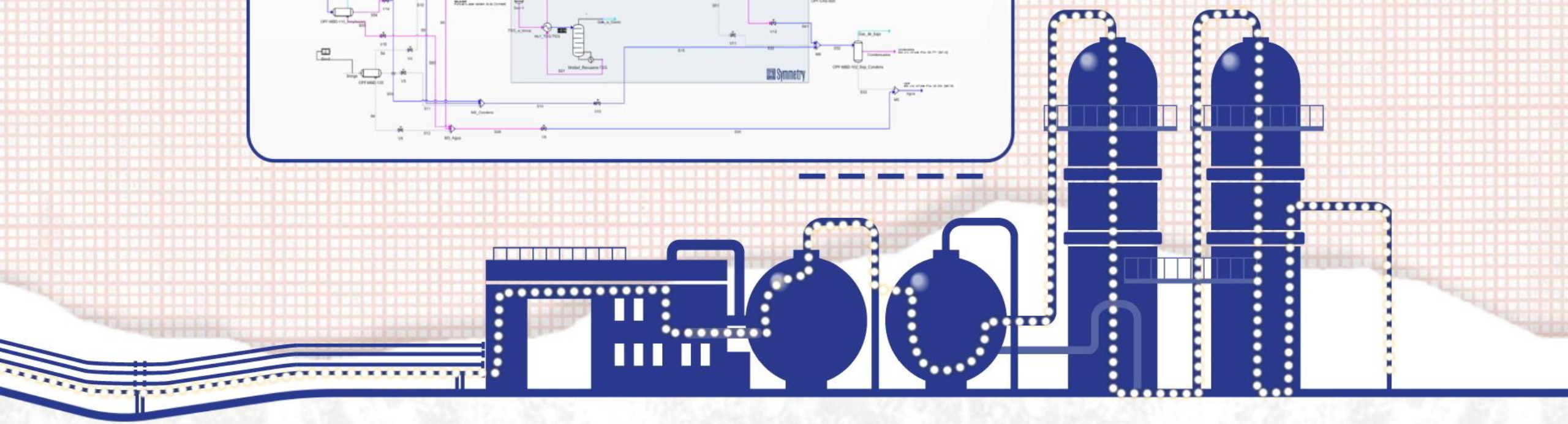


Integrated model complete with IAM

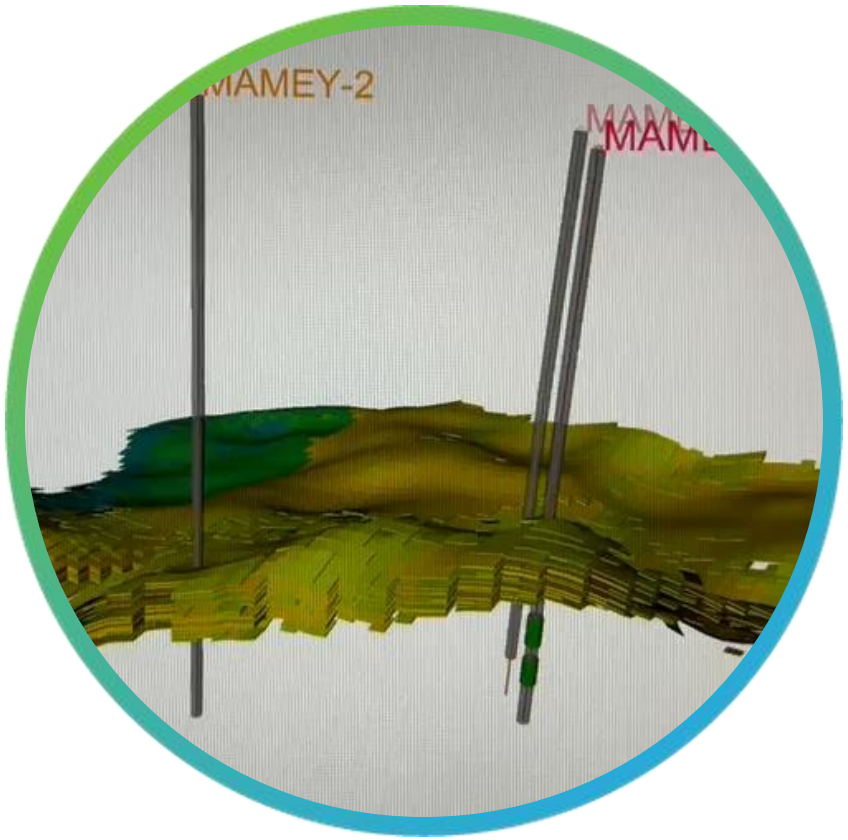
hocol

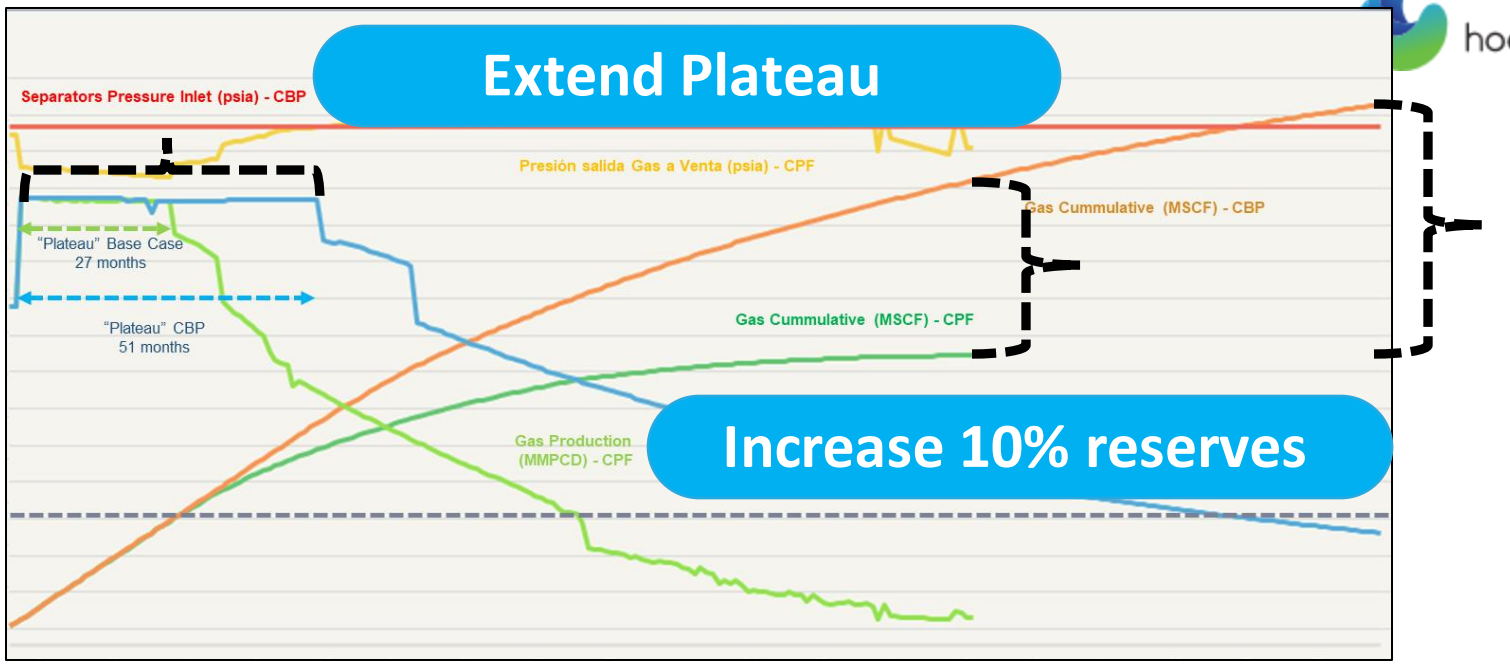


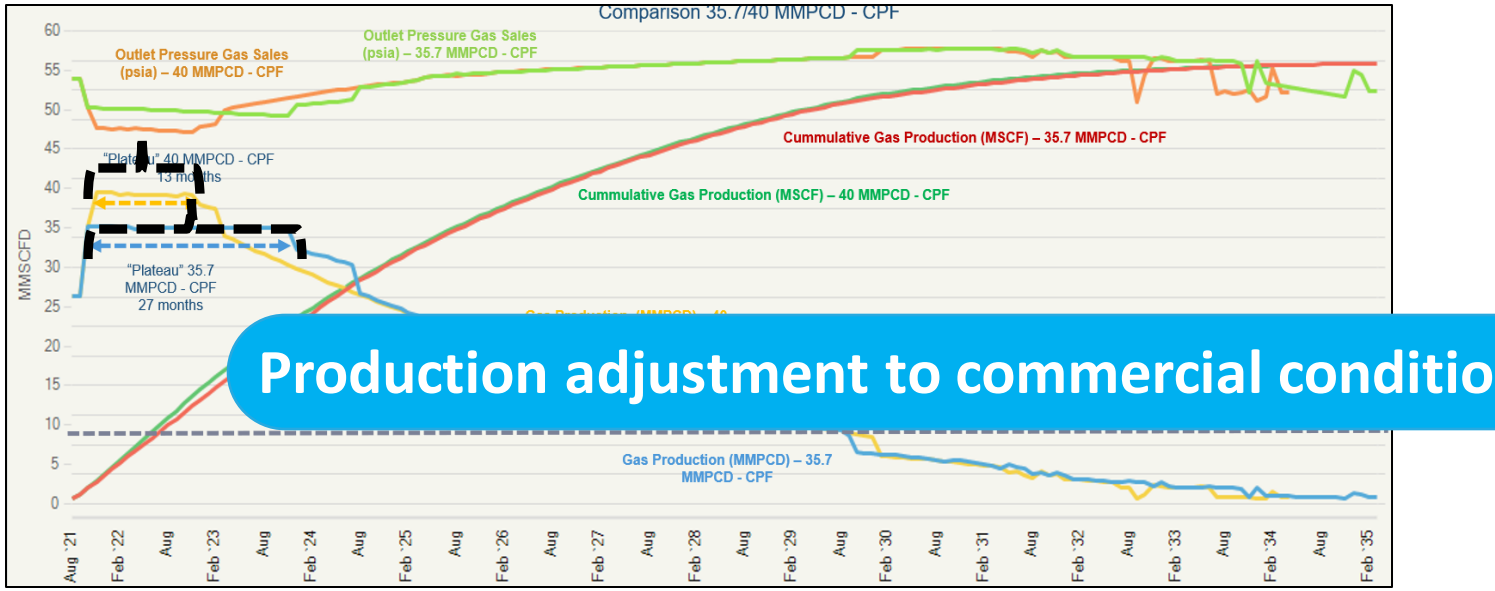
SYMMETRY PROCESS SOFTWARE PLATFORM



PRODUCTION PROFILES

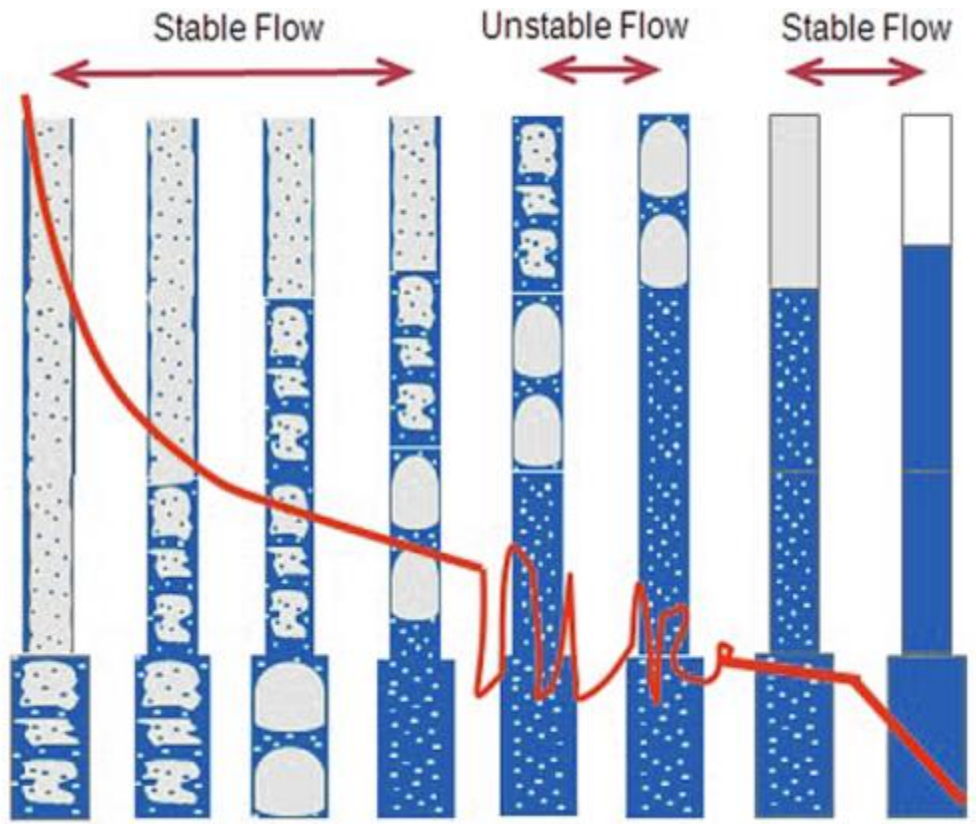


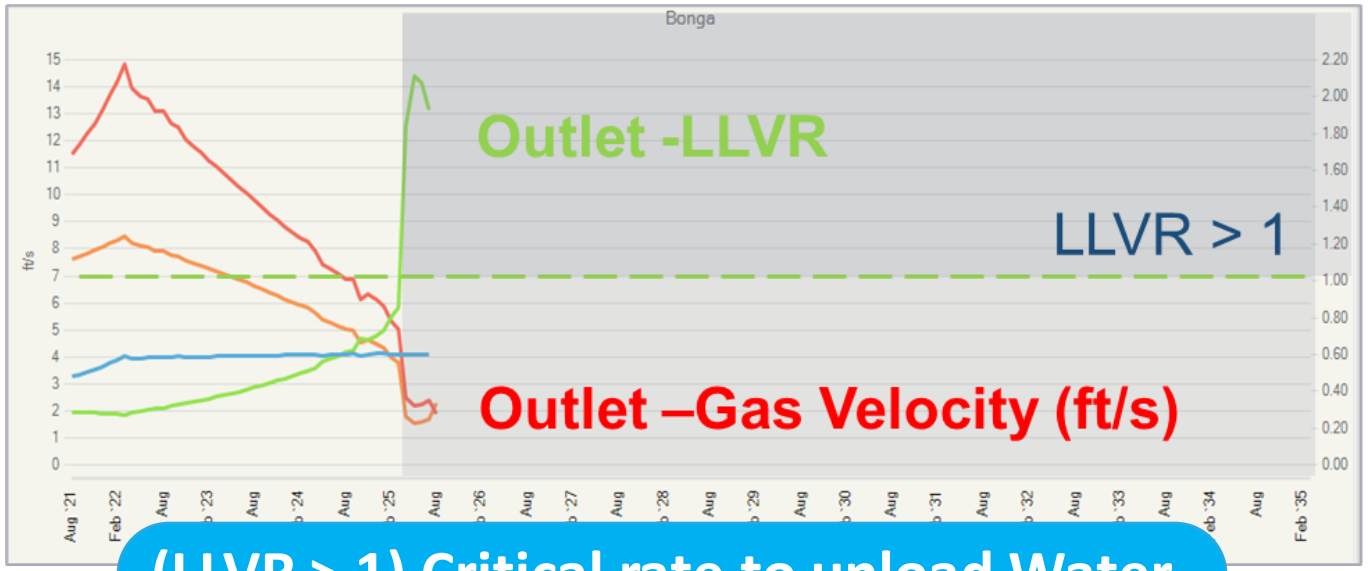




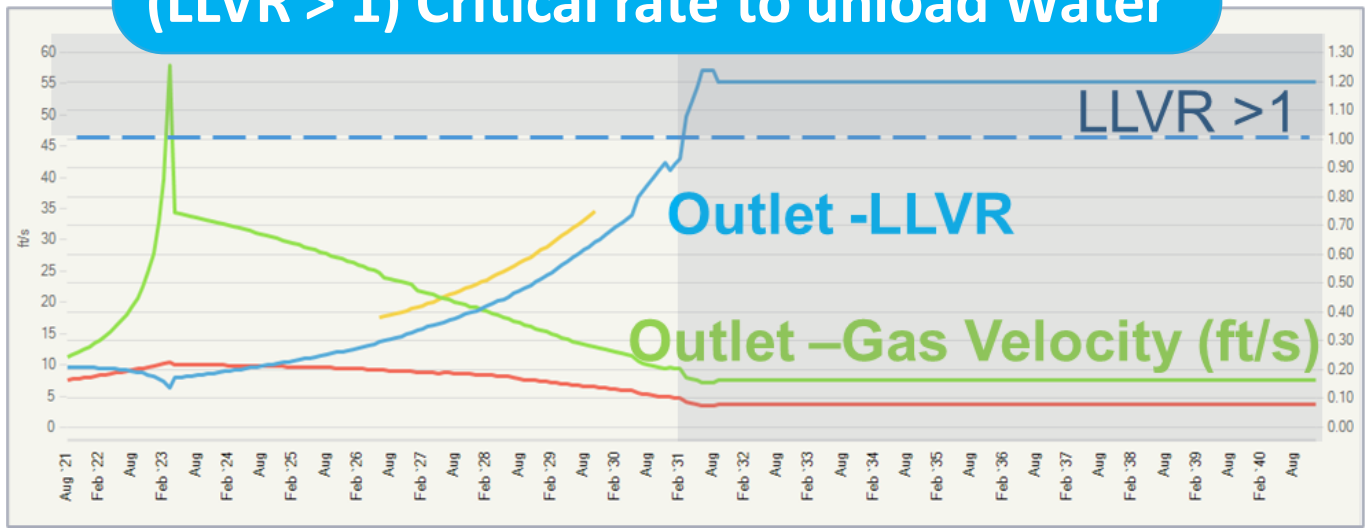
SLB-Private

WELL BEHAVOIR: LIQUID LOADING PREDICTION





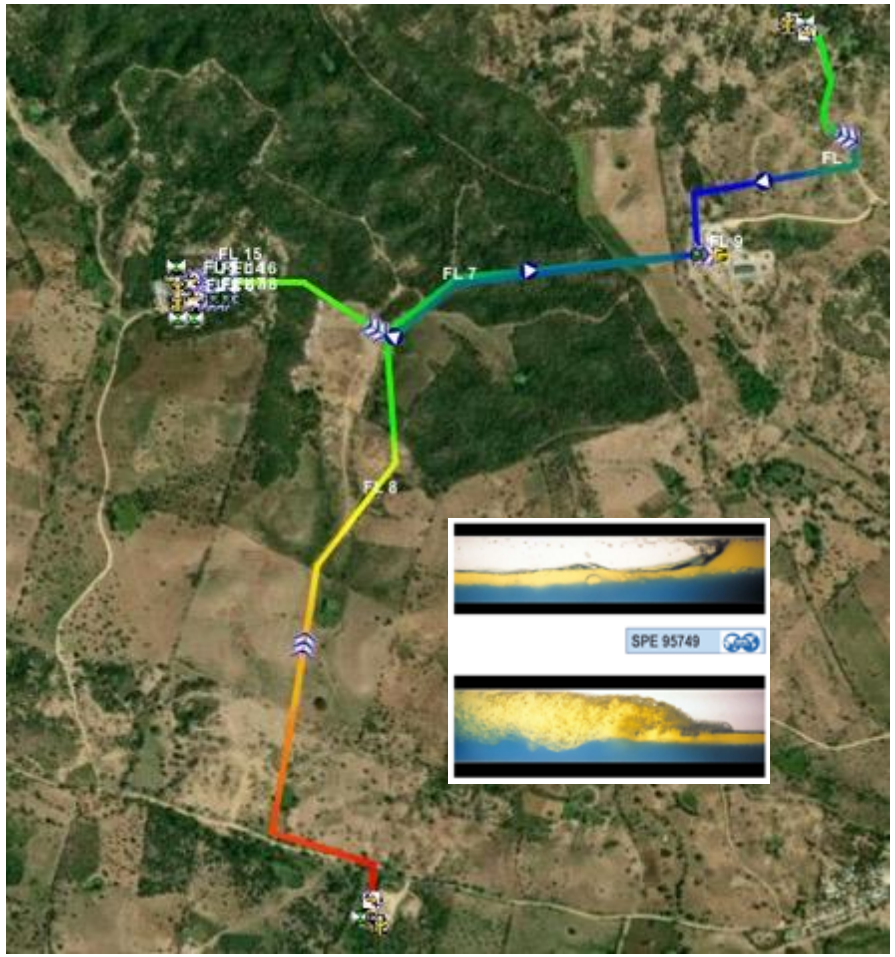
(LLVR > 1) Critical rate to unload Water



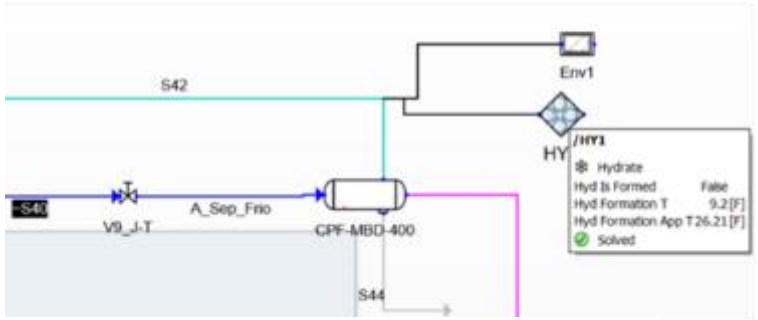
SLB-Private

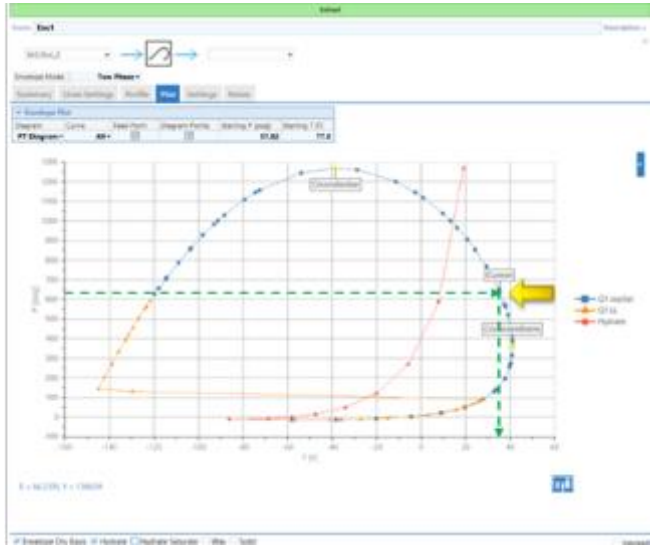
FLOW ASSURANCE

Use integration model to avoid solid formation & minimize pressure drop.

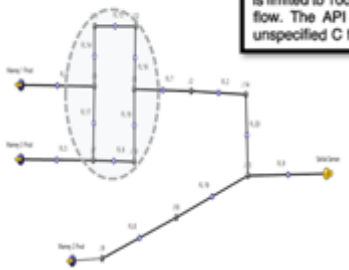


Solids Formation





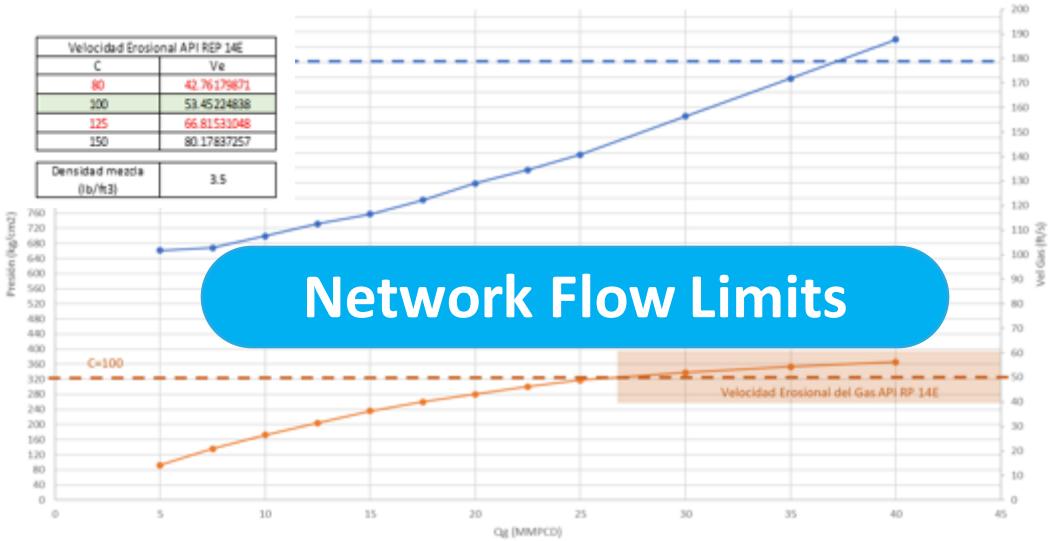
For a sand-free, two-phase flow situation, the C factor is limited to 100 for continuous flow and 125 for intermittent flow. The API RP14E recommends the use of a lower unspecified C factor for fluids containing sand.



Velocidad Erosional API REP 14E	
C	Ve
80	42.76179871
100	53.45224838
125	66.81533048
150	80.17837257

Densidad mezcla (lb/ft3)	3.5

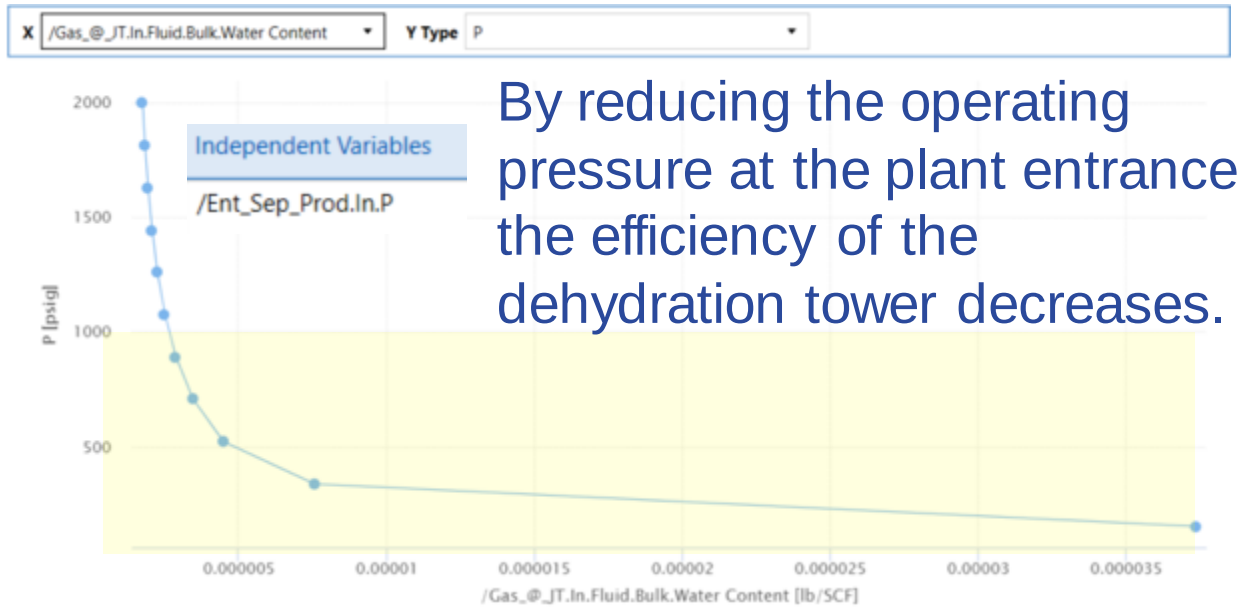
Network Flow Limits



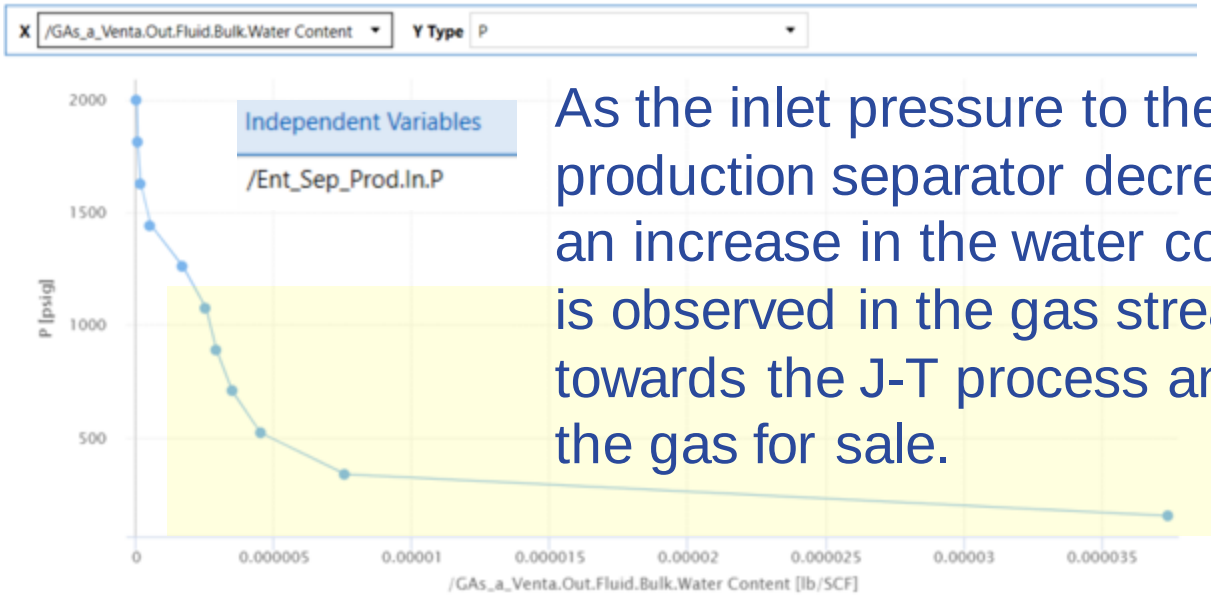
SLB-Private

FACILITIES LIMITATIONS

Facility adjustment optimization to ensure product conditions

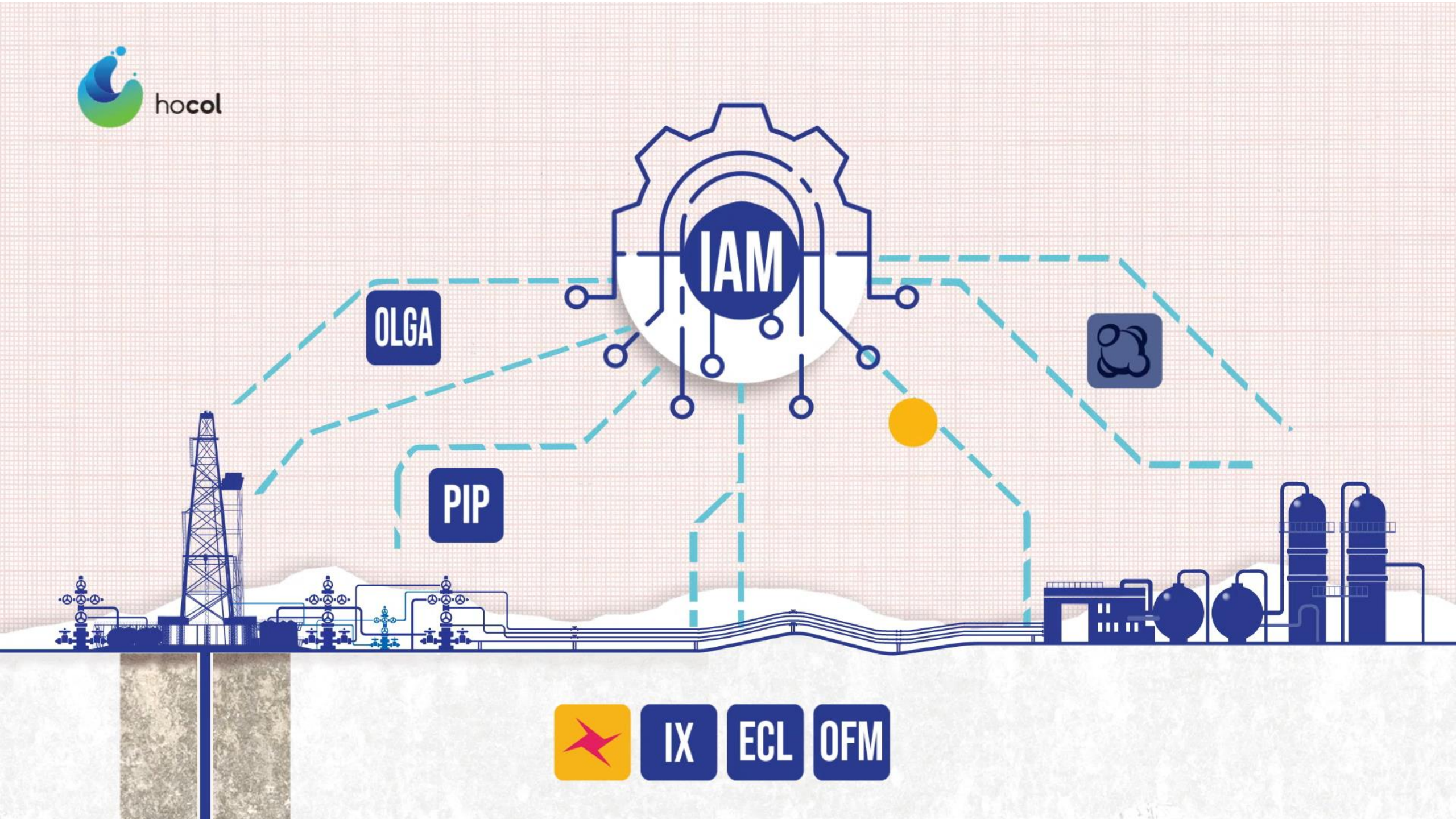


By reducing the operating pressure at the plant entrance, the efficiency of the dehydration tower decreases.

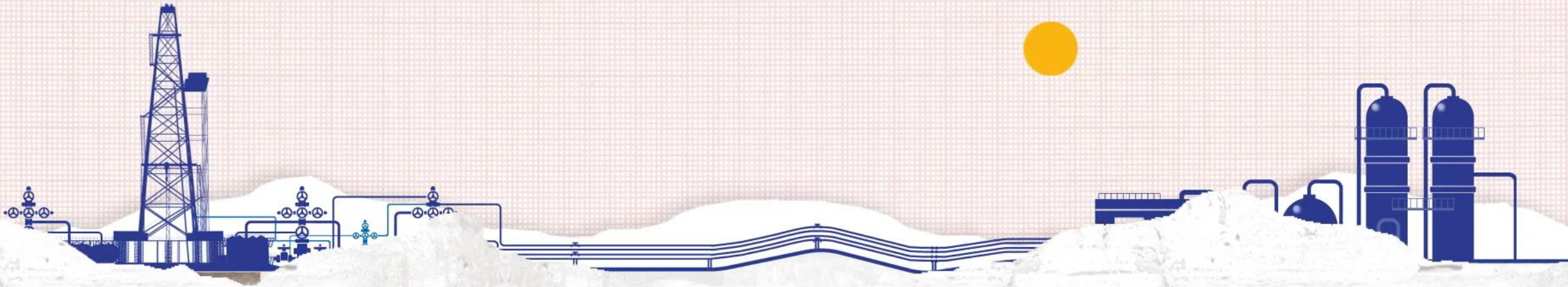


As the inlet pressure to the production separator decreases, an increase in the water content is observed in the gas stream towards the J-T process and in the gas for sale.

SLB-Private

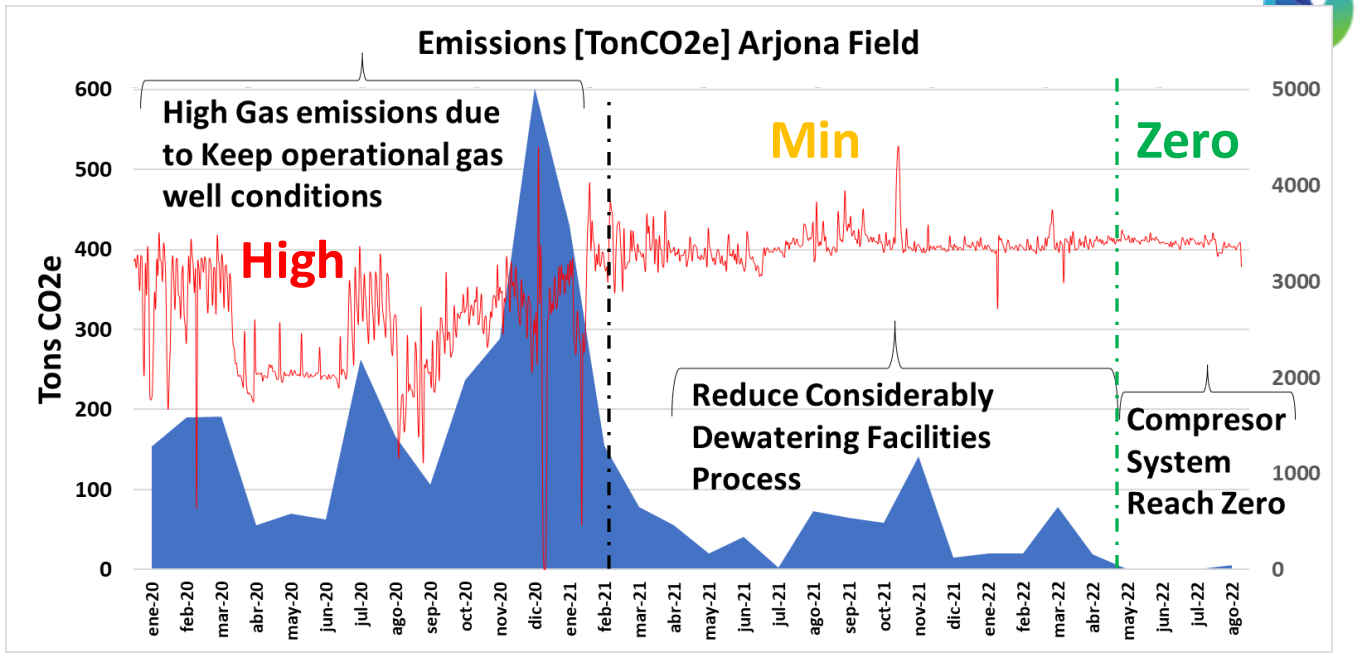

hocol
IAM
OLGA
PIP
IX
ECL
OFM

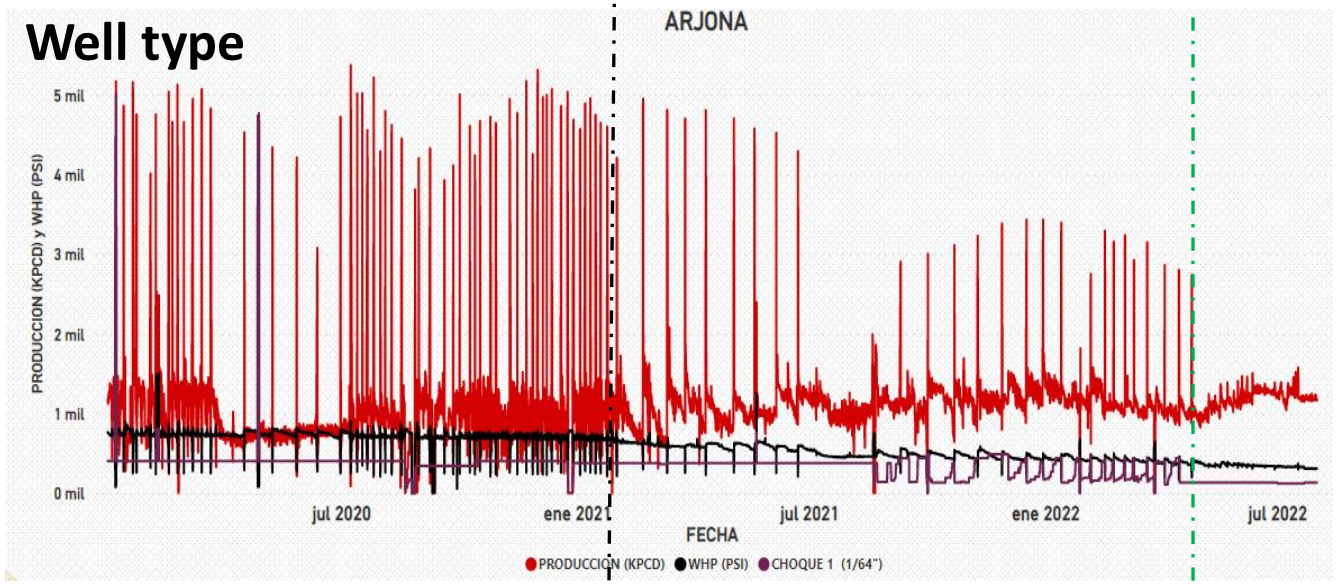
hocol



EMISSION CO2 REDUCTION

Dewatering Flaring Reduction

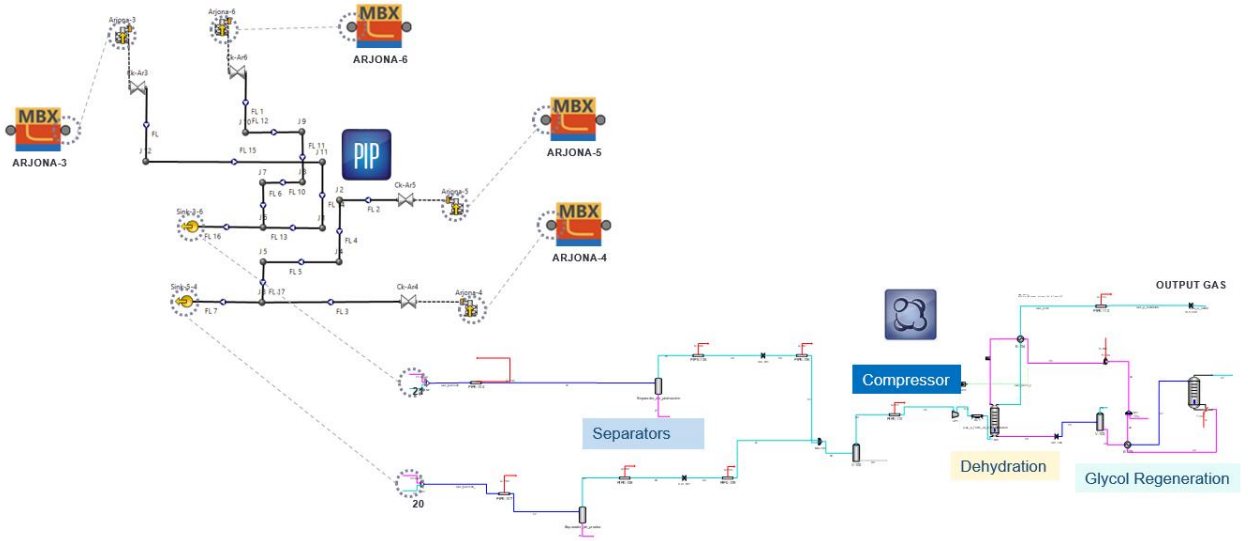


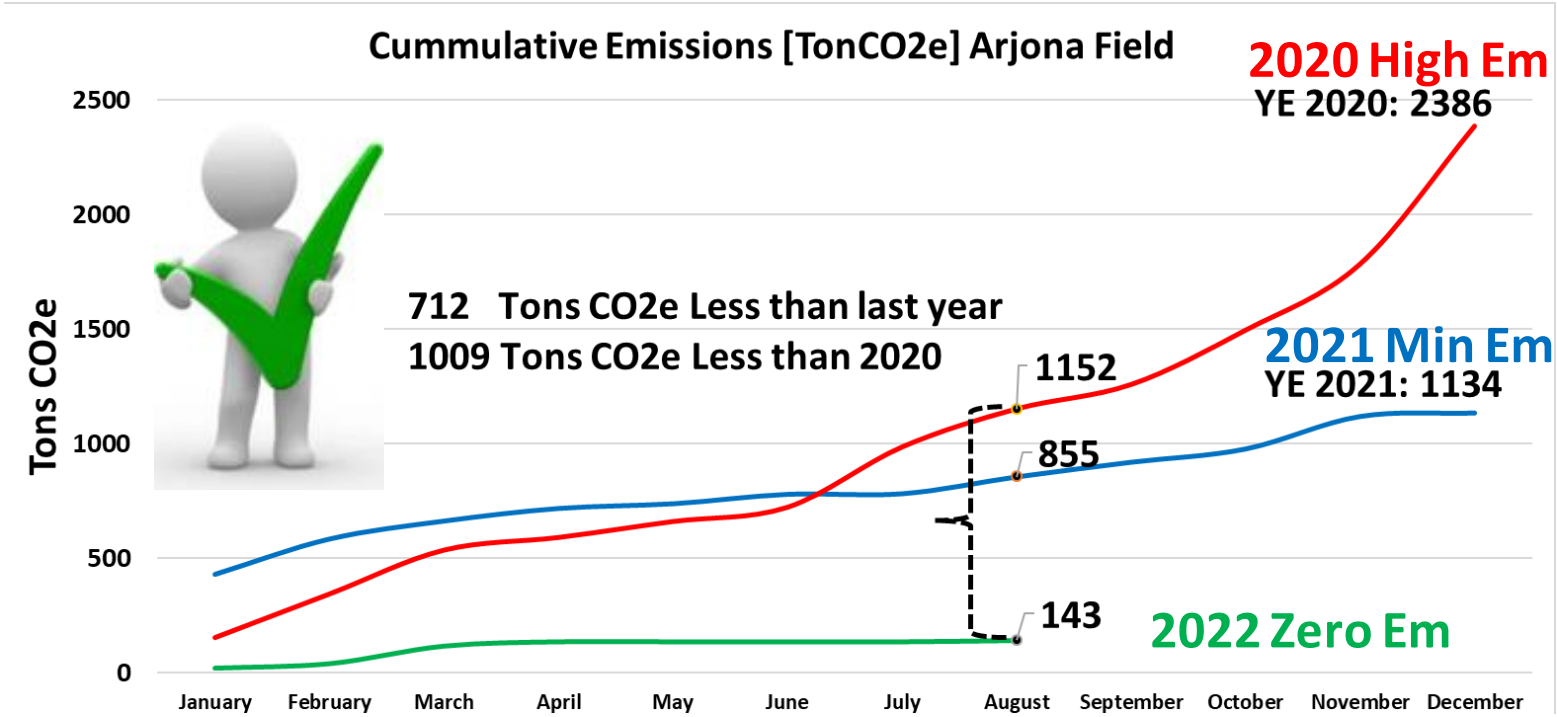


SLB-Private

EMISSION CO2 REDUCTION

Dewatering Flaring Reduction





SLB-Private

NEXT STEPS

IT REQUIREMENTS

- Include IAM in (DELFI) environment. Faster & high-performance models.

PRODOPS INTEGRATION

- Automate real data with ProdOps ML/AI algorithms.
- Include FDP planner to evaluate economical decisions.

ENVIRONMENTAL TASKS

- Energy savings strategies
- Carbon footprint reduction
- Create new products from production processes wastes.
- End-to-end emissions solutions (SEES).

VISUALIZATION AND KNOWLEDGE SHARE

- Improve dashboards visualization.

SLB-Private

ACKNOWLEDGMENT

Team HOCOL

Hugo Roberto Caycedo Garcia (DM)
Diana Marcela Pérez Rodríguez (RE)
Gerson Orlando Rivera Ortega (RE)
Jose Manuel Bermúdez González (RE)
Wilson Murillo (PE)

Team SLB-GU-ECP

Linda Cristina Guevara Saavedra (PL)
Olga Lucia Villarreal Barragán (AM)
Julieta Alvarez Martinez (PL)
Dulce Roció Canul (PE)
Sasha Baptista Parra (PE)
Nicolas Gomez Bustamante (PE)
Diana Marcela Victoria (RE)
Ruben Dario Gutierrez Bedoya (RE)
Jesus Antonio Borjas Nery (PE)

SLB-Private

¡THANK YOU!

www.hocol.com.co - Colombia

CV

ID Card

QR CODE

Do not hesitate to contact me

Diego Rodriguez

Production Technology Engineer