



Mesa III Recursos y Reservas
Desarrollo No Convencionales

Horacio D. Marín

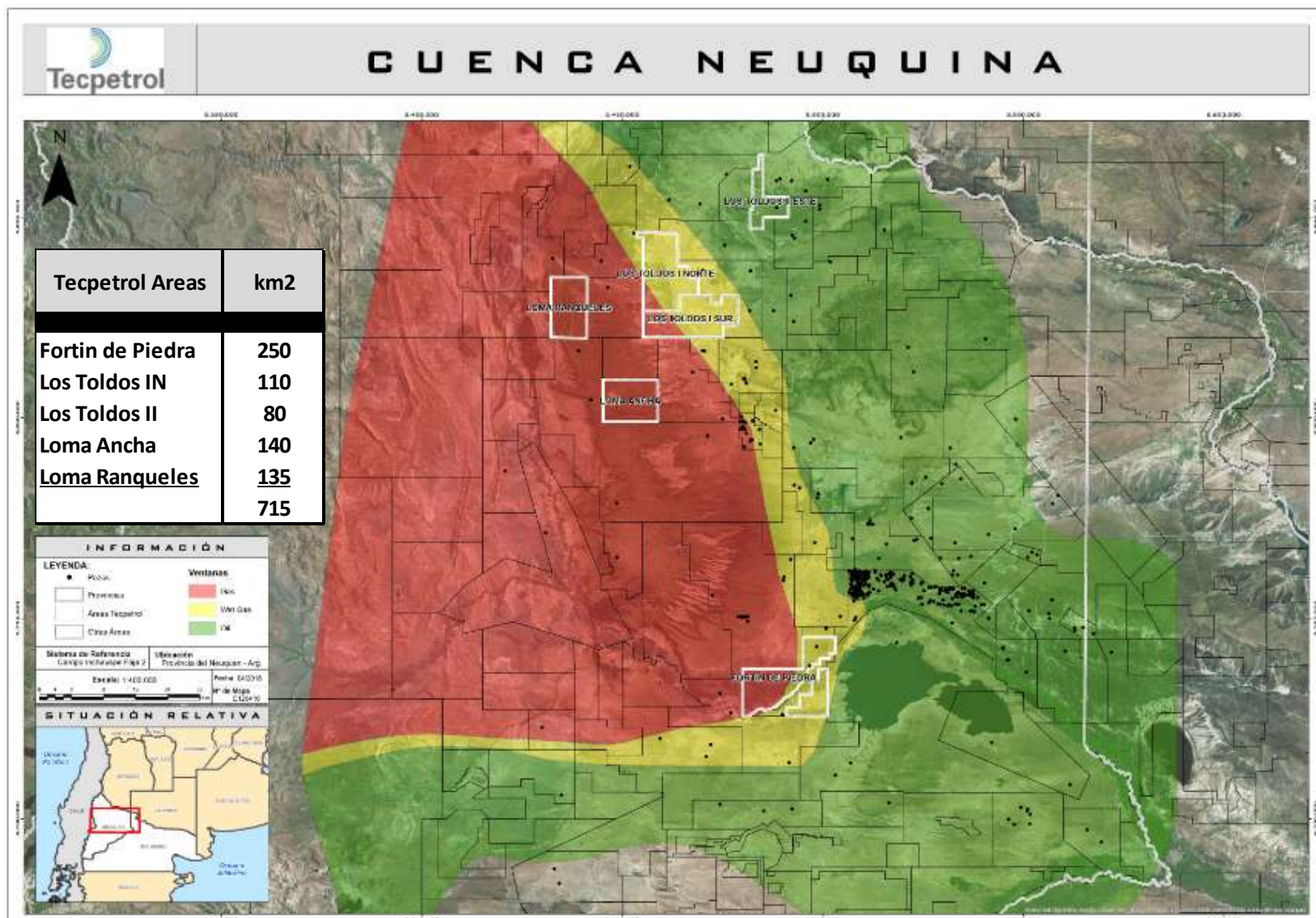
Mayo de 2018



AGENDA

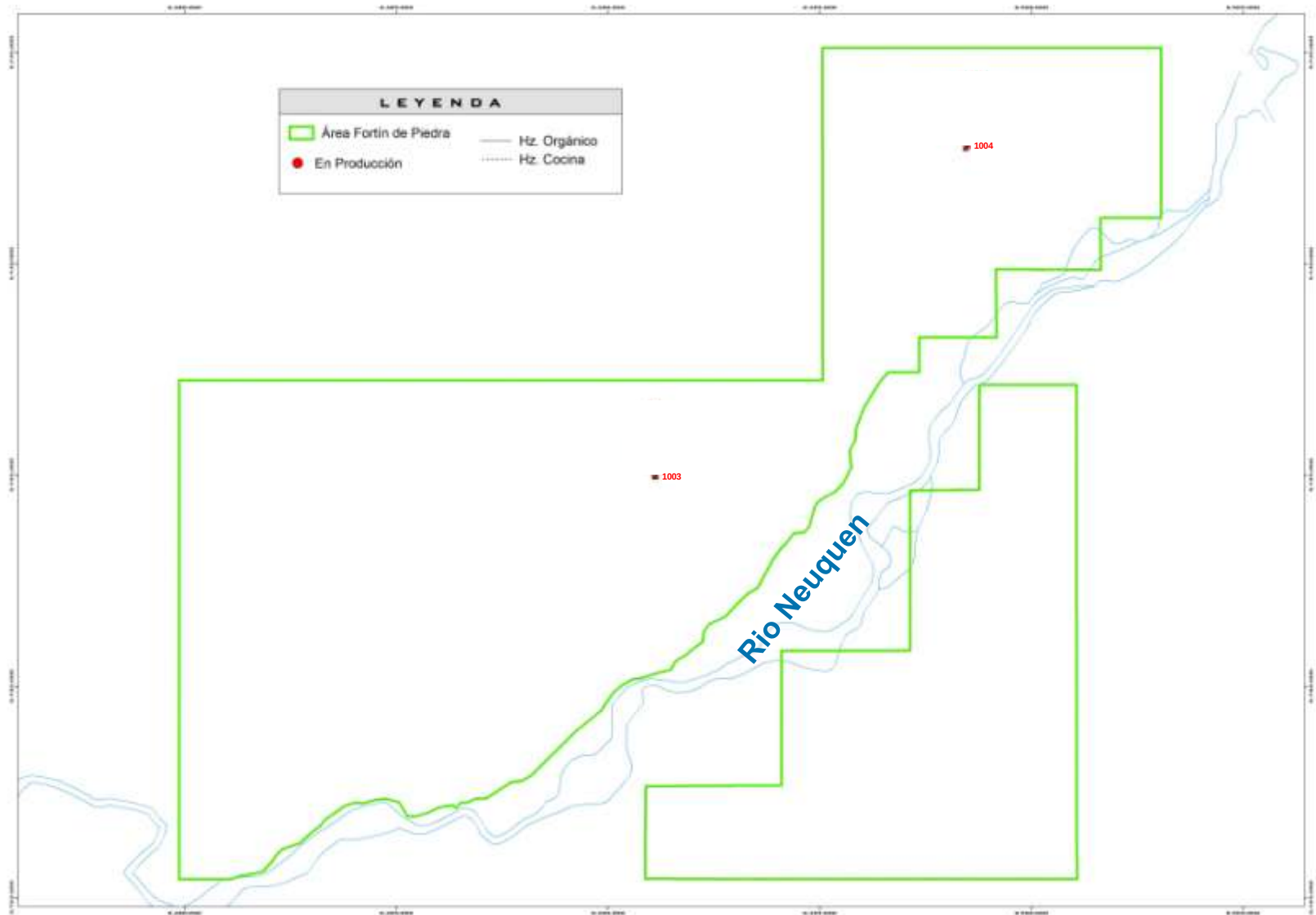
- Tecpetrol Unconventional Resources
- Fortín de Piedra Project
- Operational Challenges
- Reserves Estimation

Tecpetrol Unconventional Resources



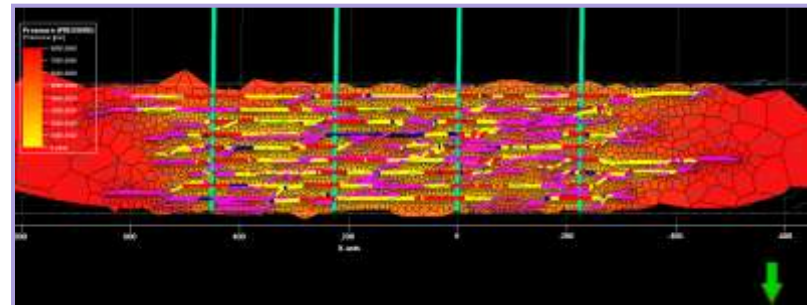
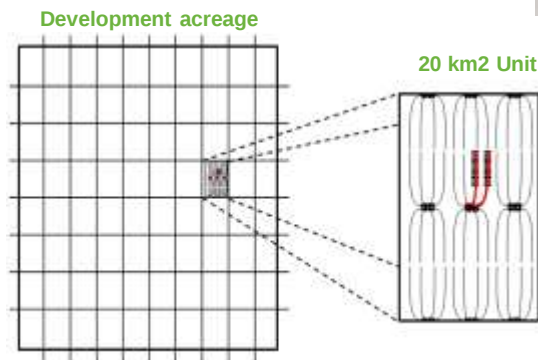
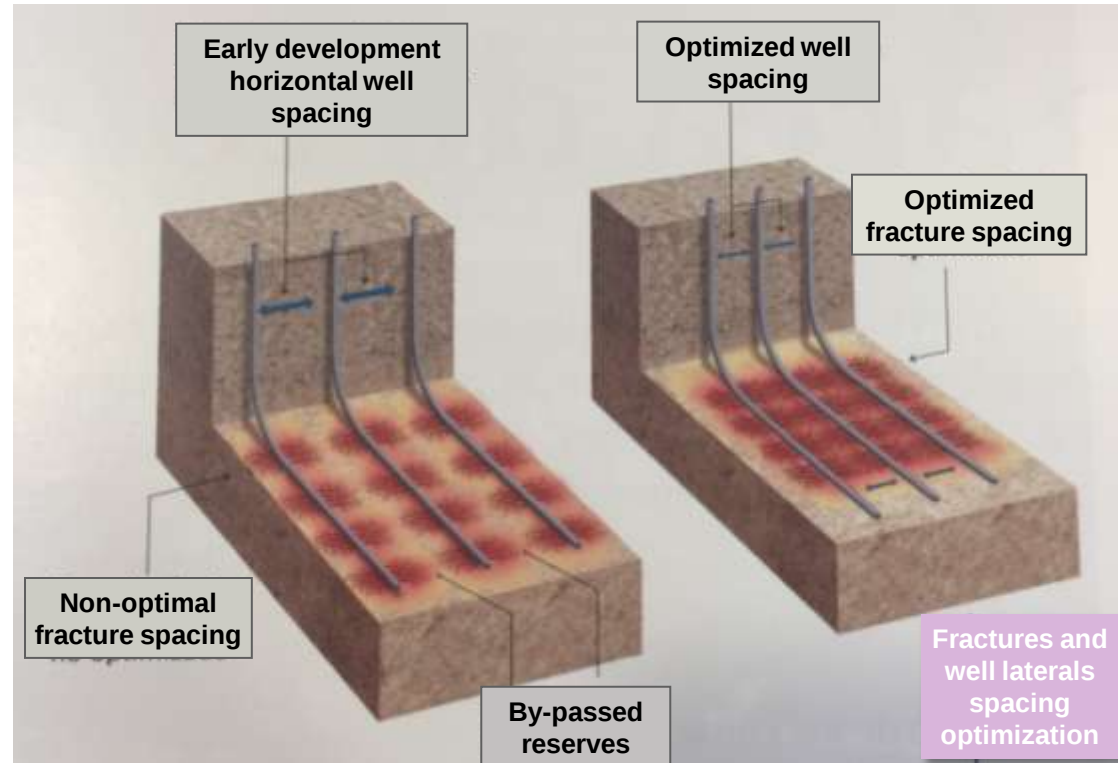
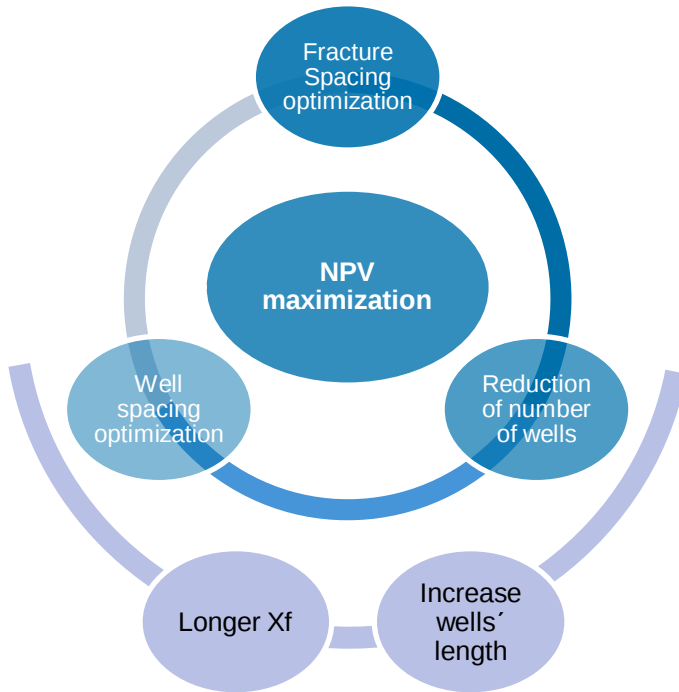
Fortín de Piedra Project

2016: 2 Vertical Wells



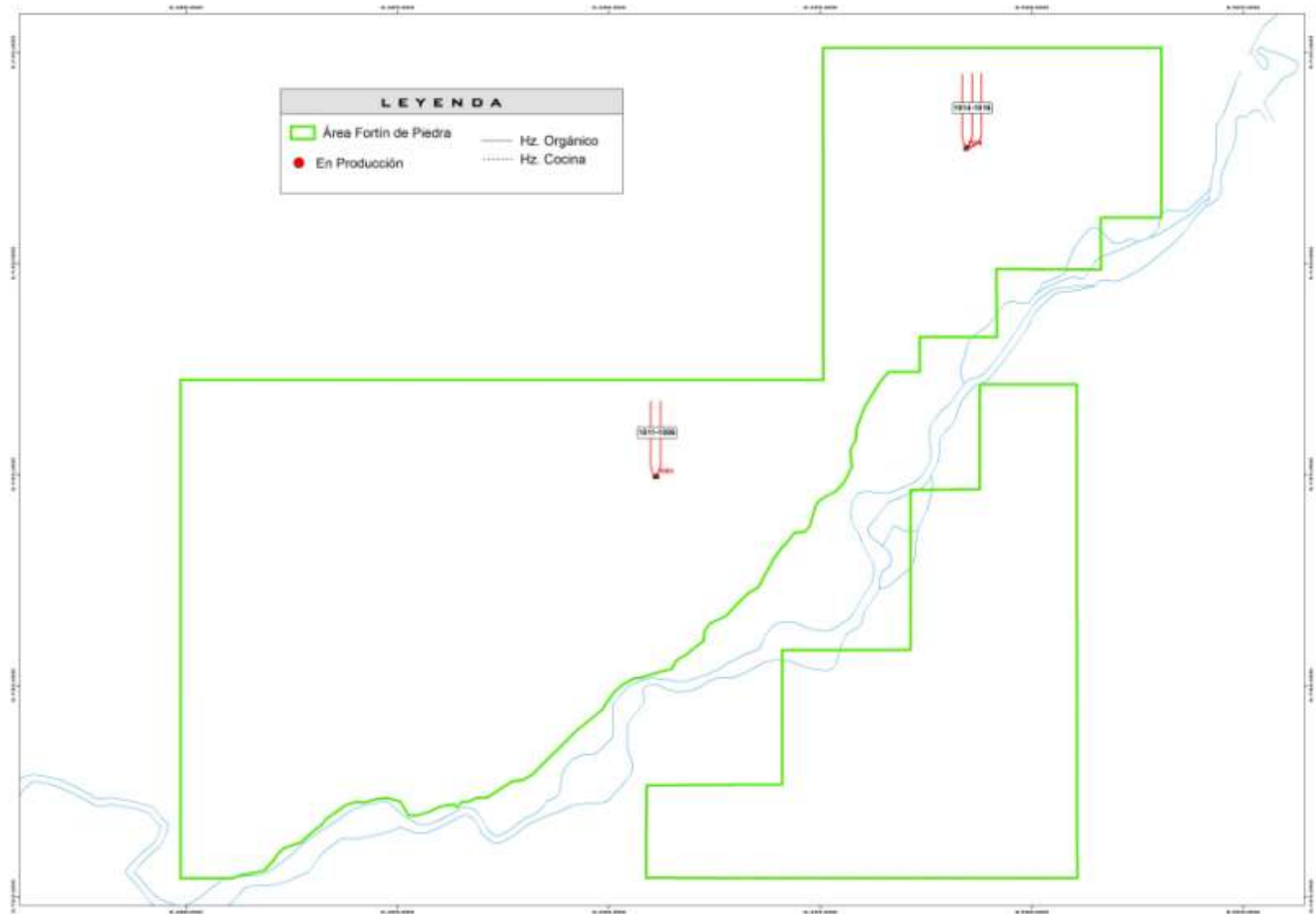
Development Plan Definition

Well spacing optimization- NPV maximization



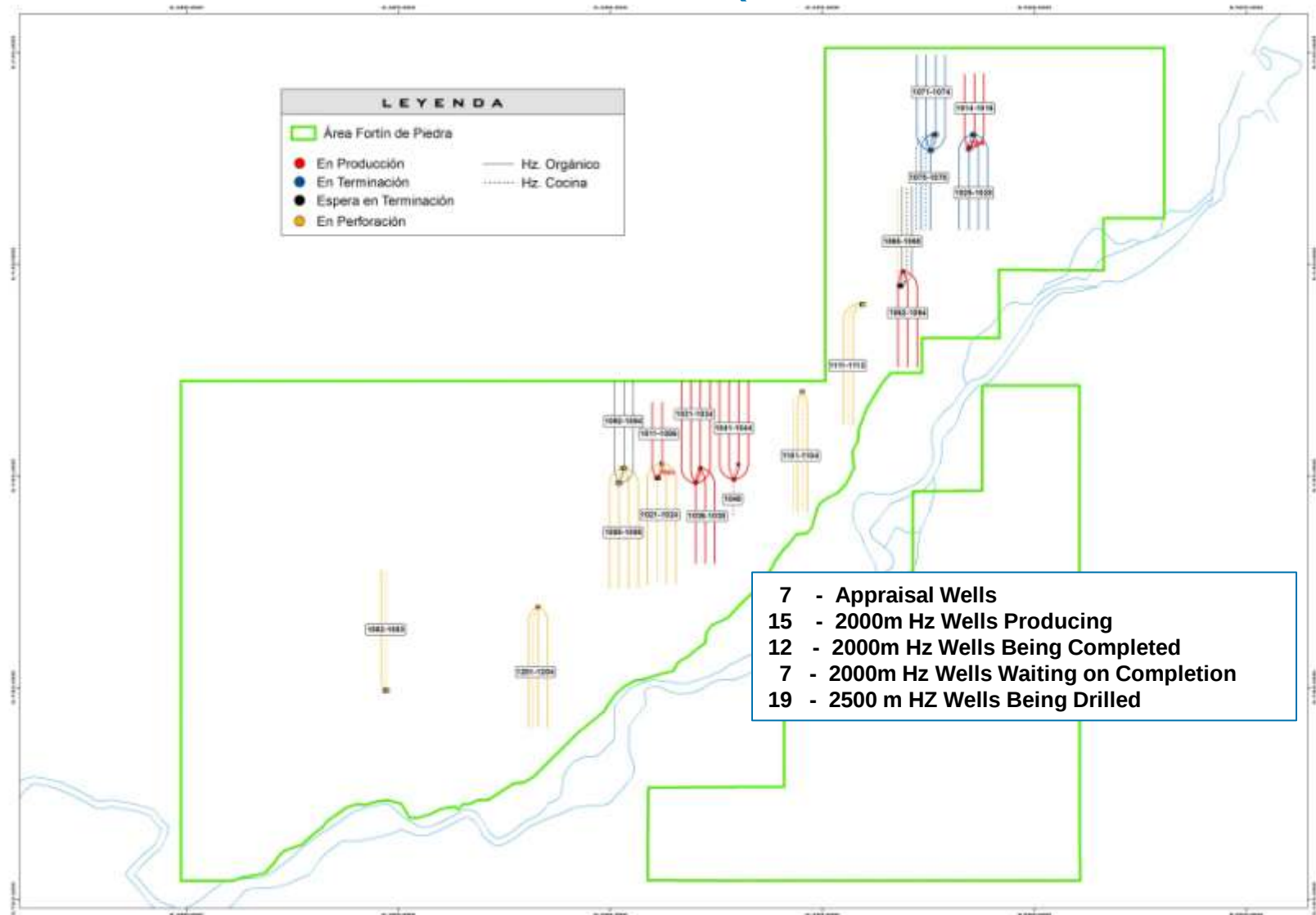
Fortín de Piedra Project

23/Mar/2016: 2V+5 Horizontal Wells (1500m laterals)



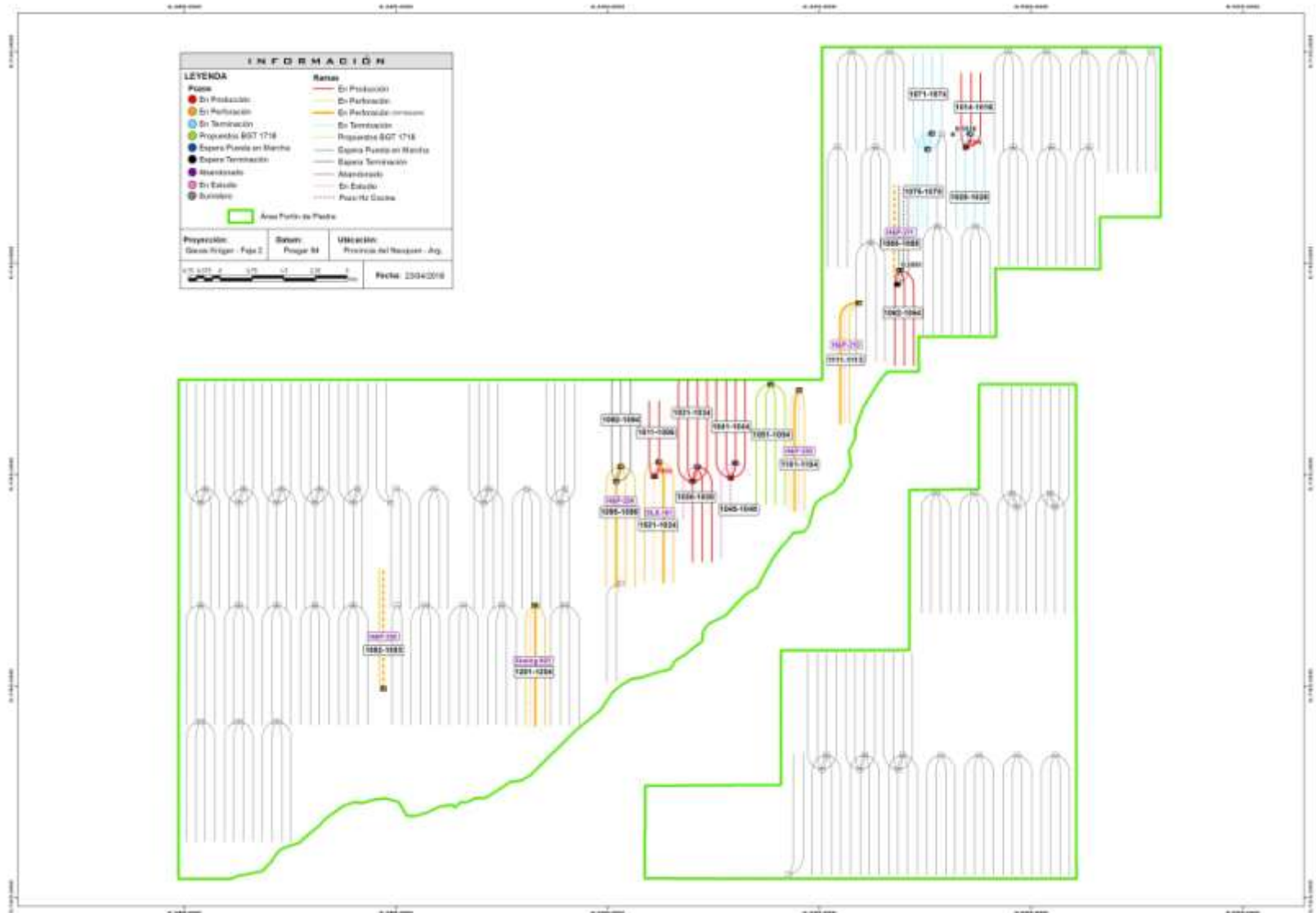
Fortín de Piedra

Current Situation (May/18)

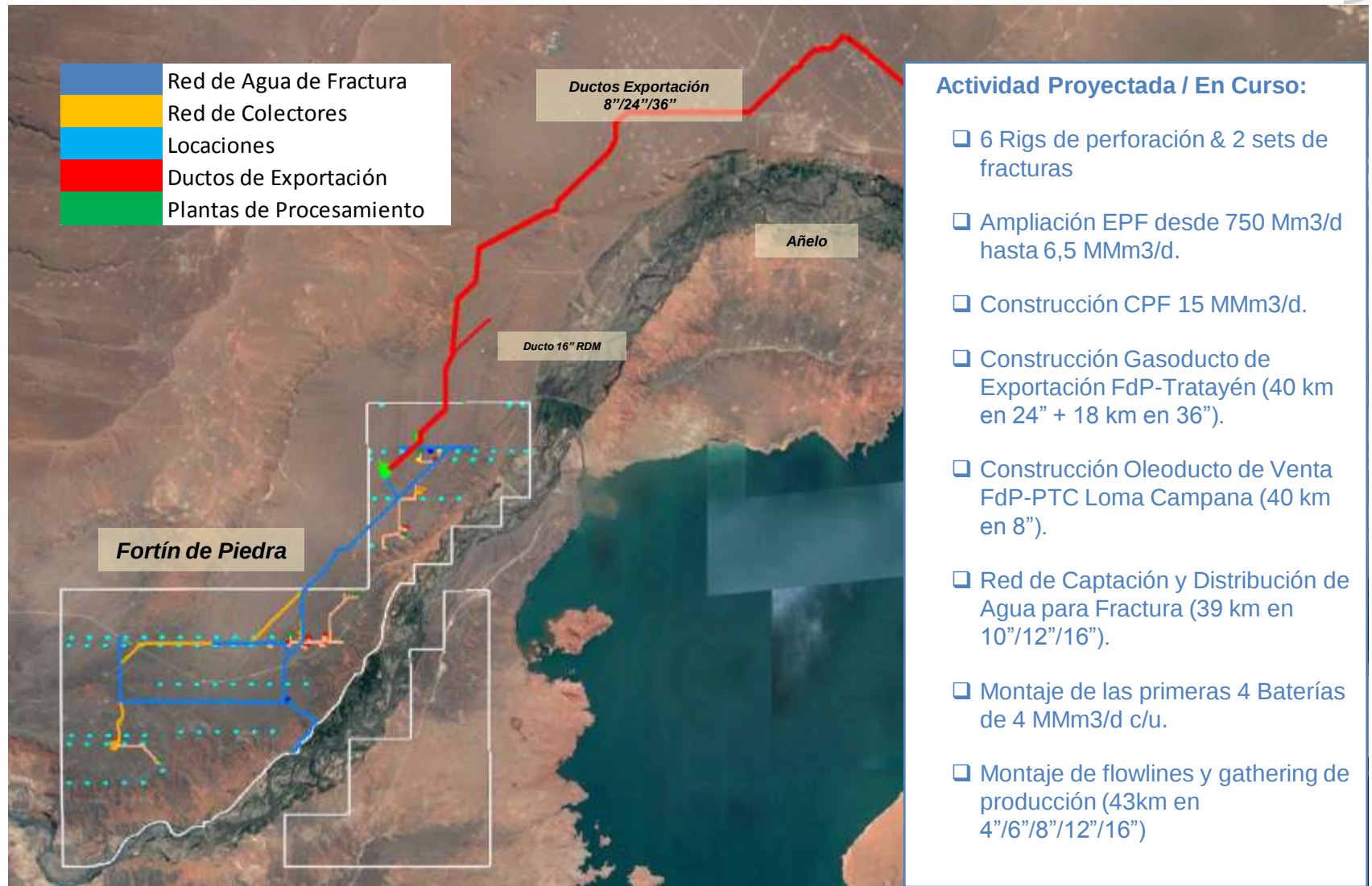


Fortín de Piedra

Development Plan (1 layer, 84 pads)



Fortín de Piedra Project



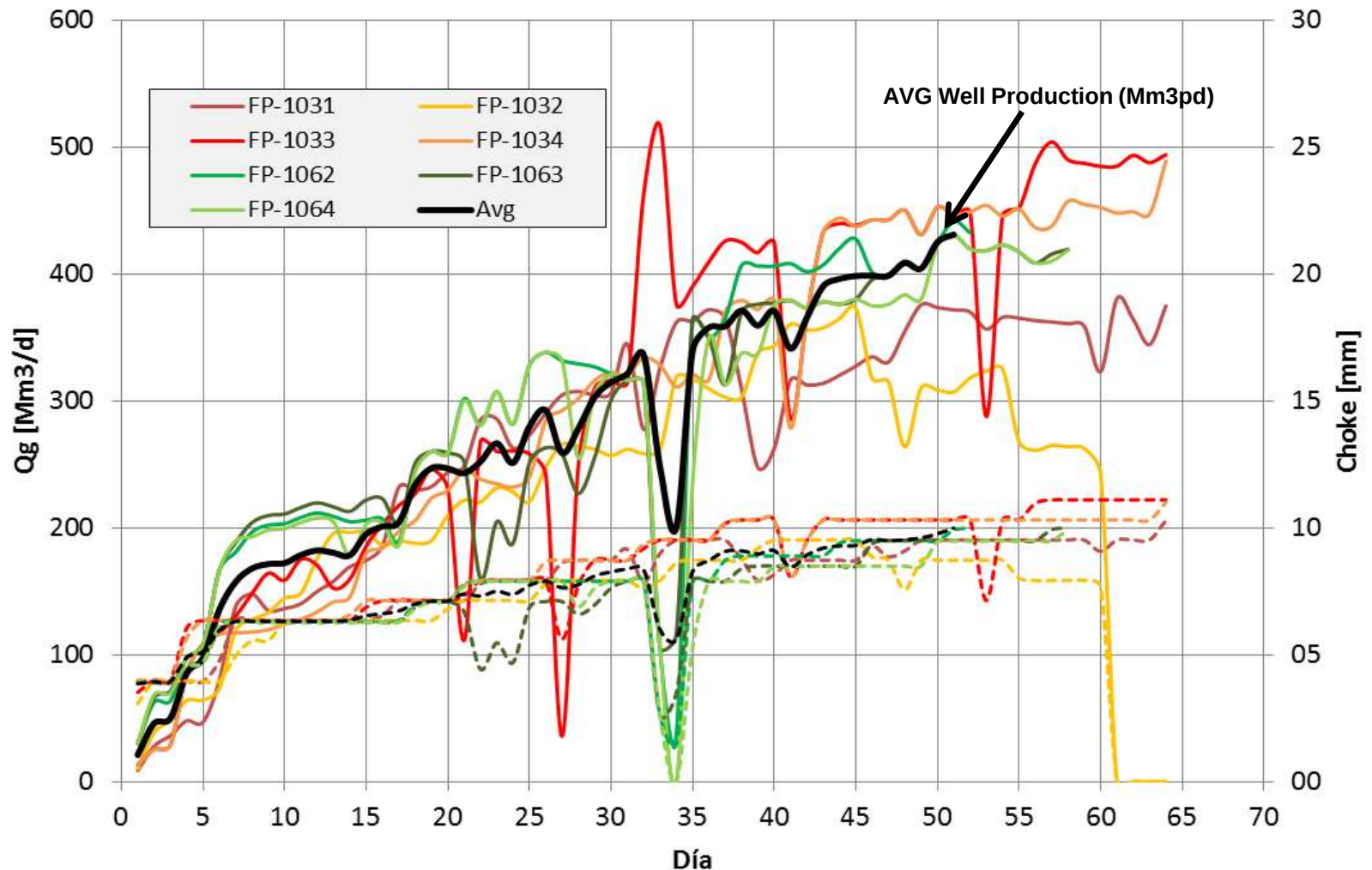
- Desarrollo de Infraestructura 2017/2019 – Capex: 700 MMu\$

Fortín de Piedra Project



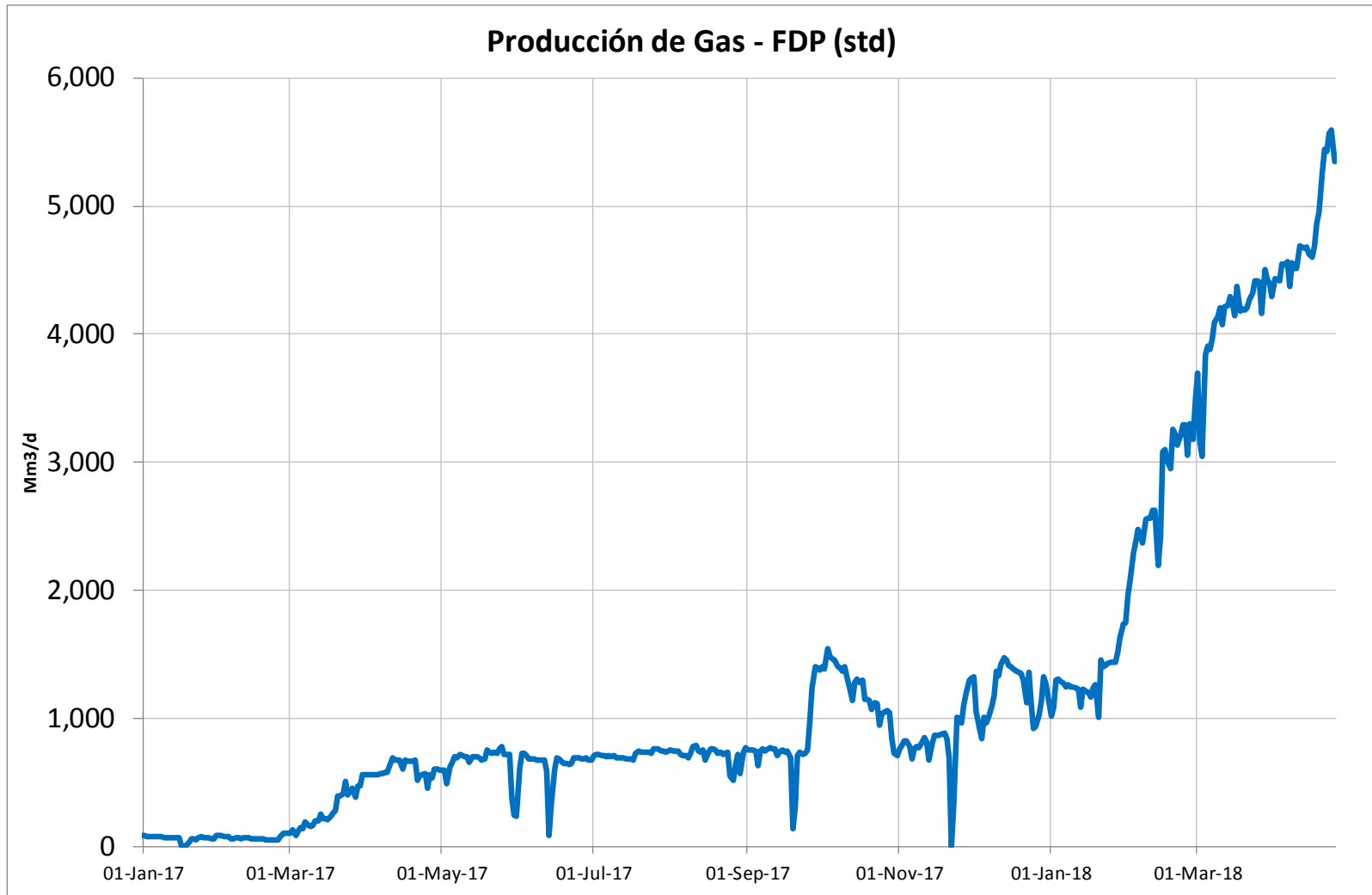
Fortín de Piedra Project

Individual Well Production



Fortín de Piedra Project

Daily Production

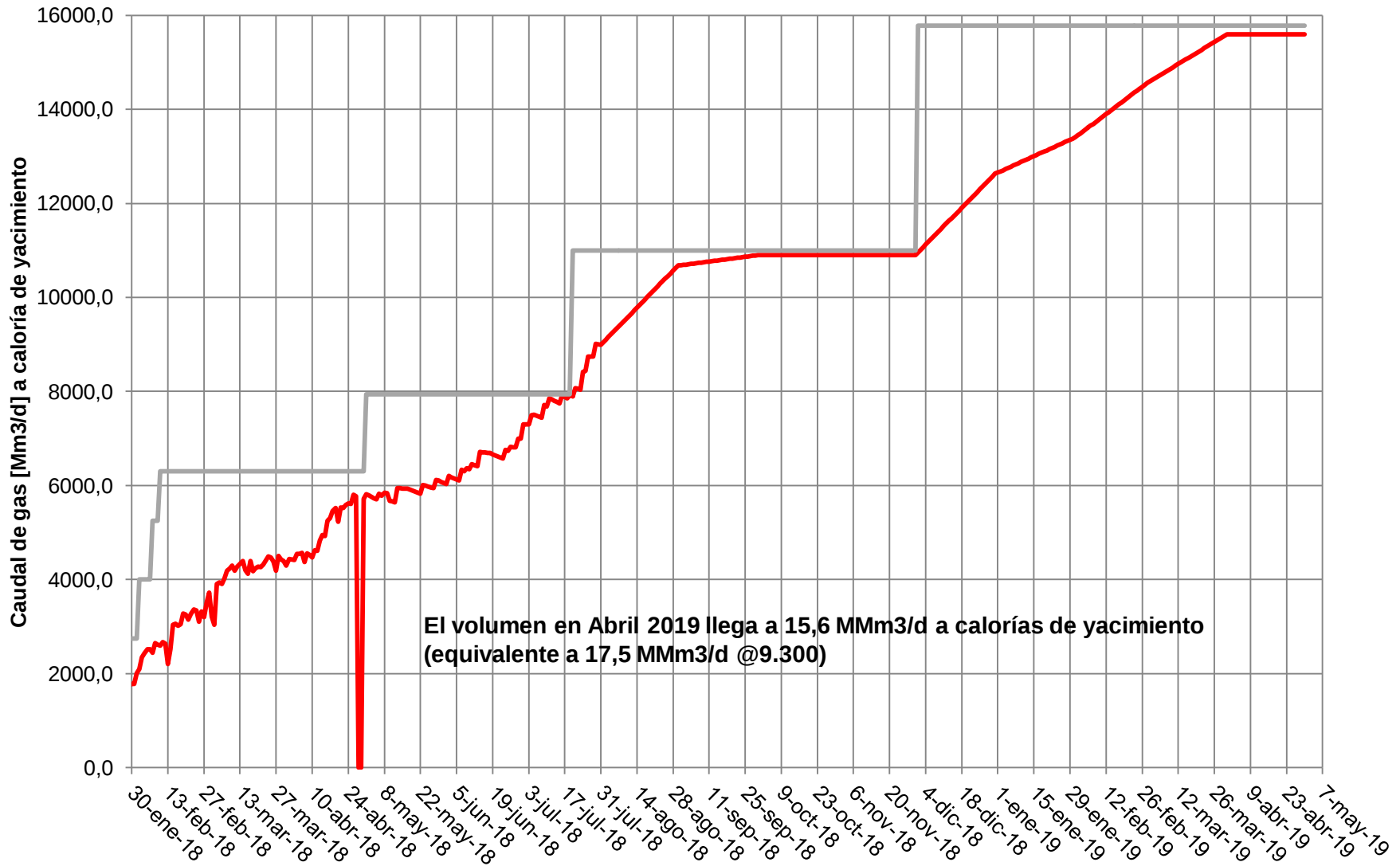


Fuente: Elaboración Propia

Fortín de Piedra Project



Pronóstico de Producción de Gas @ Calorías de Yacimiento



Operational Challenges



- Choke Management / Sand Productions
- Well Construction Optimizations
- Process Efficiencies (Big Scales)



Reserves Estimation – SEC Rules



- No SEC special rules for unconventional estimation and classification
- Volumetric Method required a multidisciplinary approach
 - No industry standards currently exist for analysis and interpretation in shale gas/oil reservoirs.
 - Methods and models are still evolving and adapting.
- It is best practice to check volumetric against by back calculating the (recovery efficiency) and evaluate its reasonability.
- In general, the combination of a well defined volumetric method and performance with decline curve analysis type Arps modified can sufficient to support reserves reporting before SEC



Muchas Gracias