



Sustainable Sand Management Control and Solutions - Balancing Performance, Costs, and Environment

20–21 AUGUST 2024 | KUALA LUMPUR, MALAYSIA



Accomplishment Of Sand Control Performance Thru Proper Ramp-up/Down Procedures, A Study Case In Sisi-Nubi Field

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Current Production:

- 450 MMscfd
- 25 Kbpd (oil+condensate)

6 oil/gas processing facility:

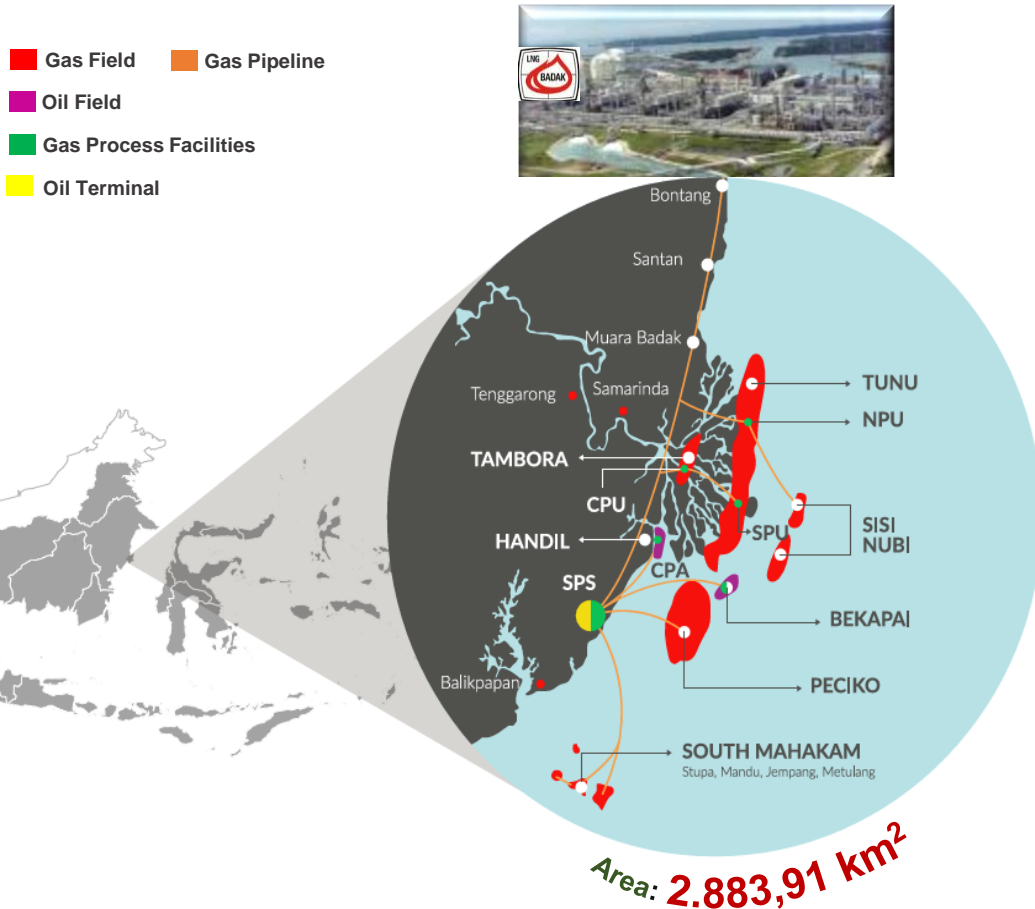
- CPA, SPS, BKP, CPU, NPU, SPU
- 1 loading terminal (Senipah)

Oil Fields :

- Bekapai (1974)
- Handil (1975)

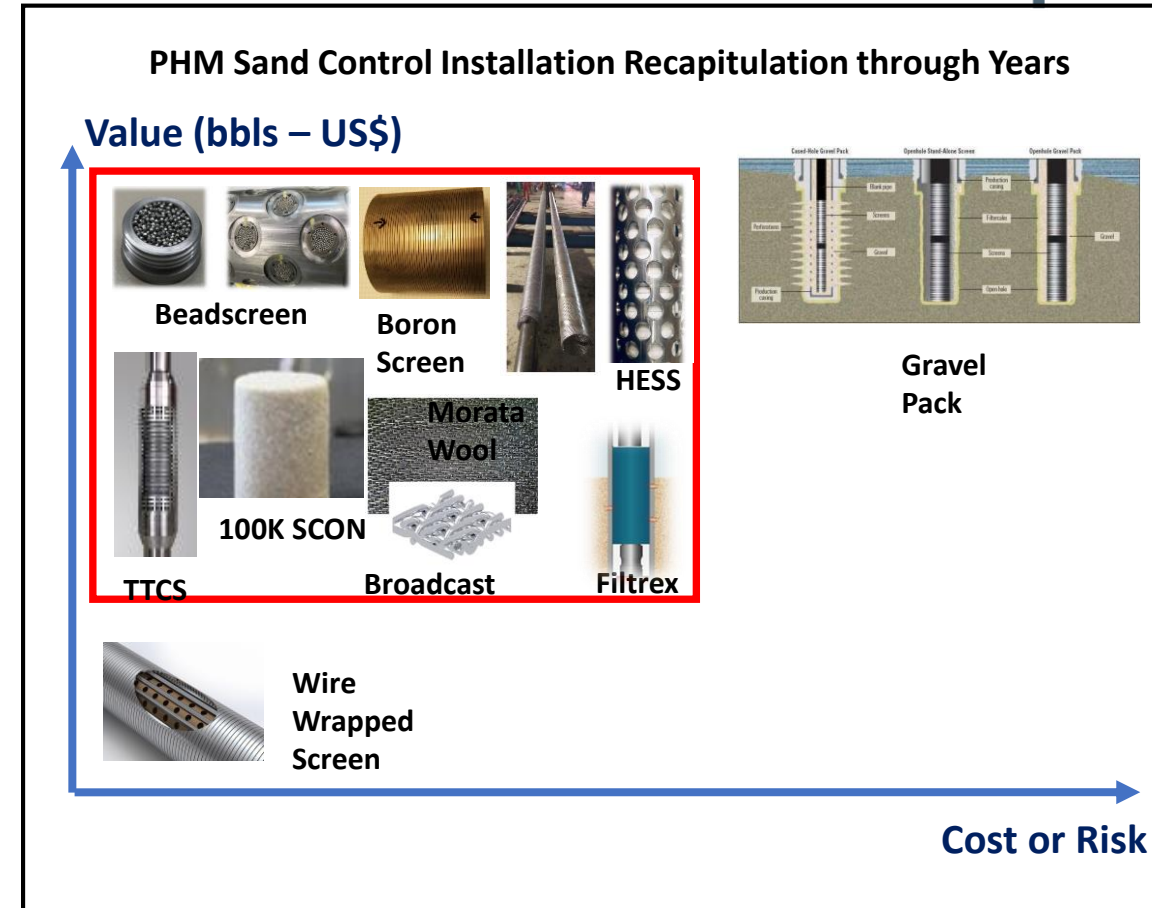
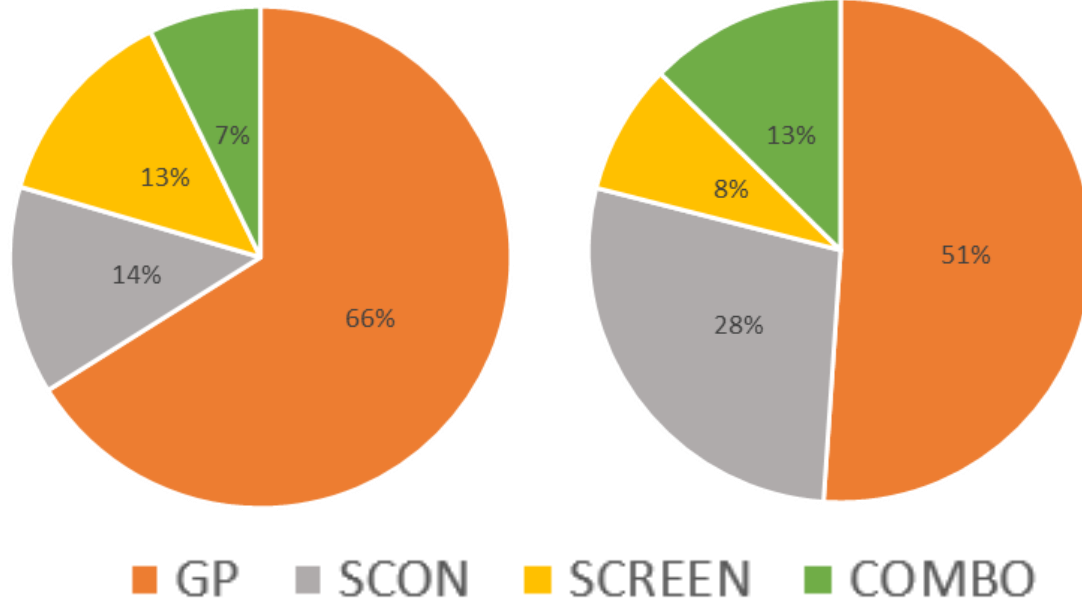
Gas Fields :

- Tambora (1984)
- Tunu (1990)
- Peciko (1999)
- Sisi Nubi (2007)
- Stupa (2012)
- East Mandu (2013)
- Jempang
- Metulang (2015)
- Jumelai (2022)



2011

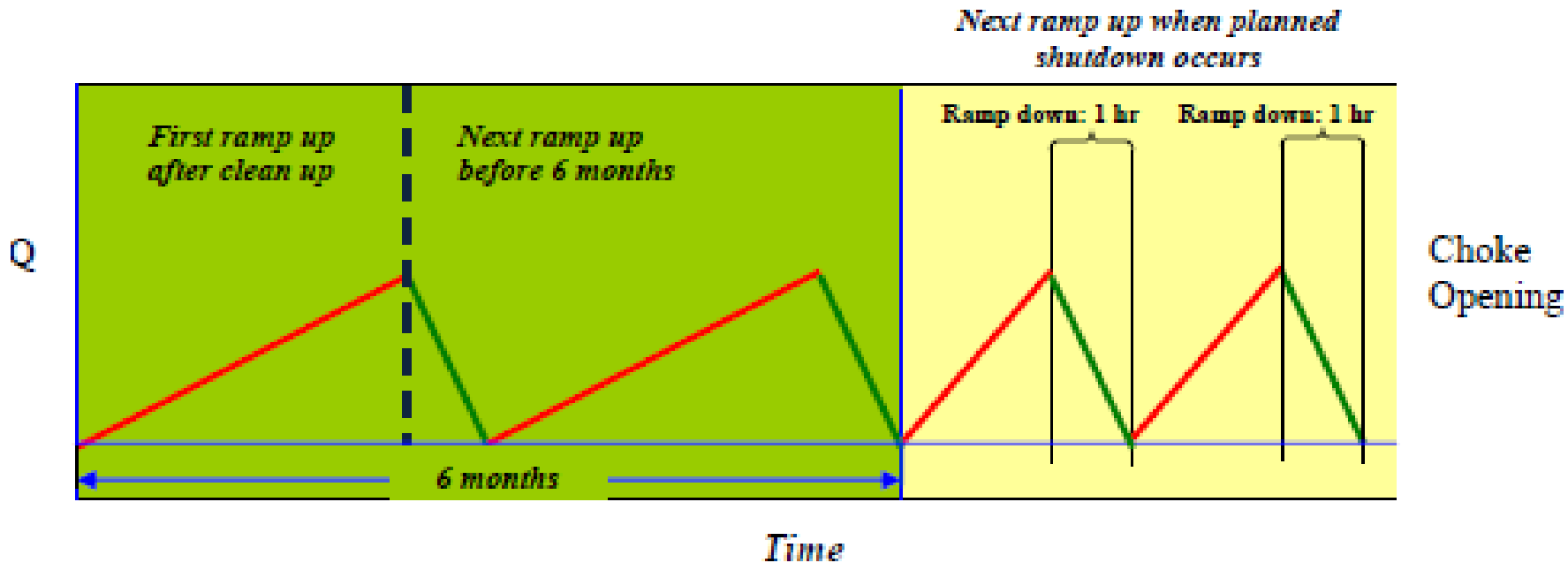
2023



- Gravel Pack installation is less through years
- Chemical SCON succeed at TUNU but not at SISI-NUBI field
- No sand control can manage 0% sand production
- **Good well operation: ramping up/down is key for succeeding sand control natural sand packing (NSP) → minimize sand/fines produced at surface**

Accomplishment of Sand Control Performance

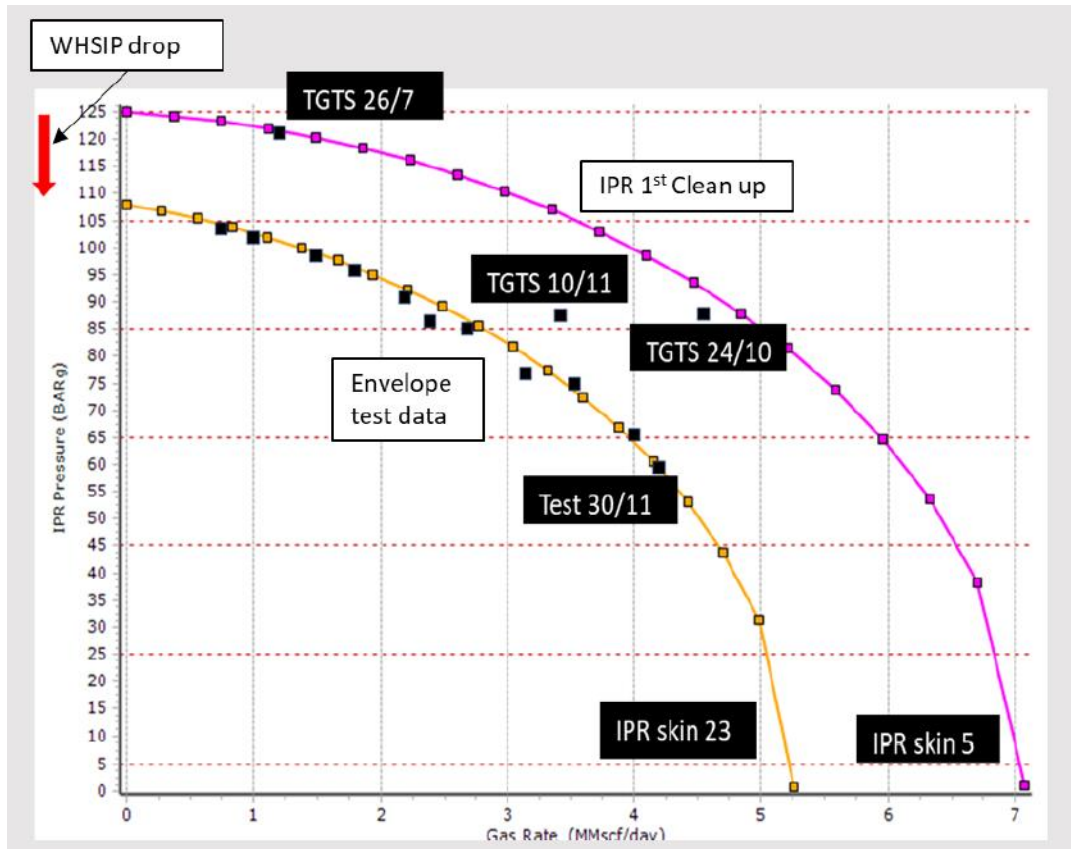
Ramp-up/Down Guideline – Gravel Pack example



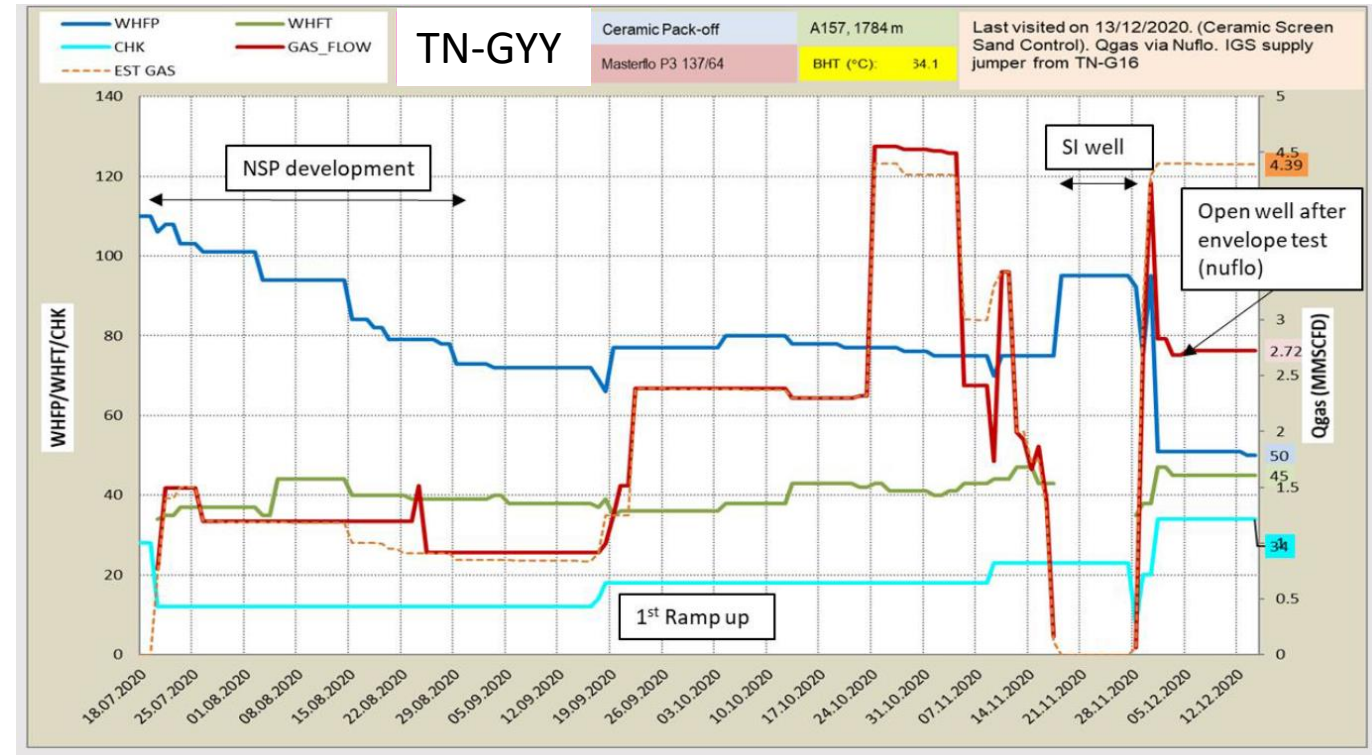
- Most of gravel pack sand control showed good performance
- Qg up to 35 MMscfd bottom hole Drawdown 1000 psi

Sequence illustration for sand prone, sandy wells, and sand controlled wells

Natural Sand Packing



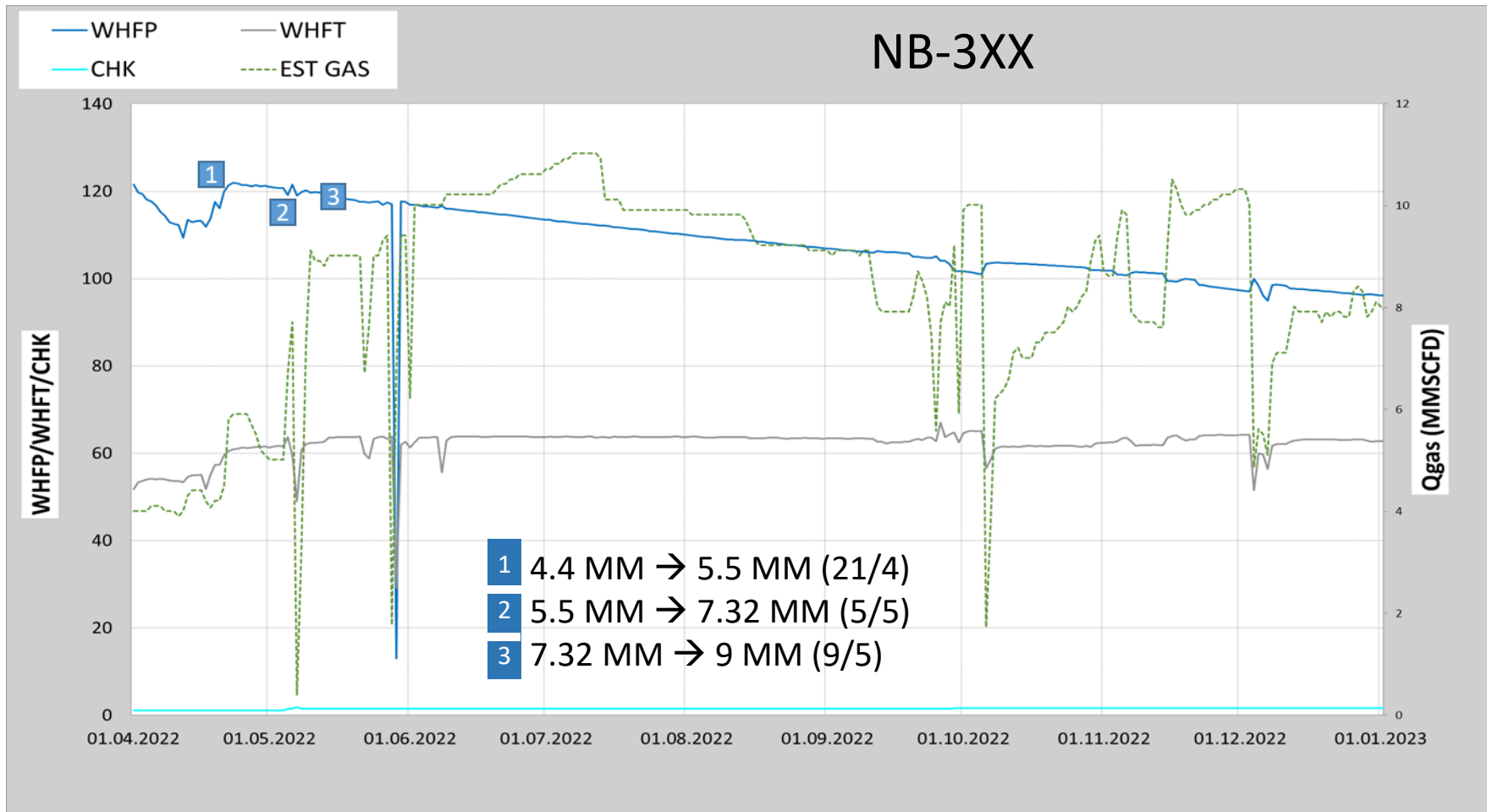
Perfo length: 1 m, Phi: 15-20%,
Perm: 53-170 mD, Vsh: 39-49 %



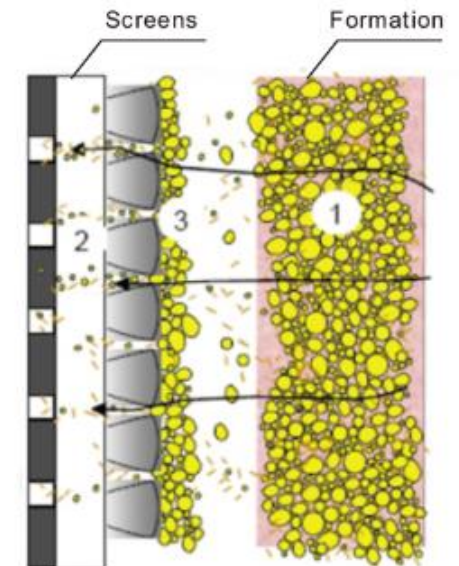
- Post TTCS installation, 3-6 months NSP (natural sand packing)
- Skin increase from 5 to 23 as NSP was build
- Conclude TTCS Max Production per Zone 4.4 MMscfd

Example Excellence Screen Result at Sisi-Nubi

NB-3XX: 3 joint TTCS

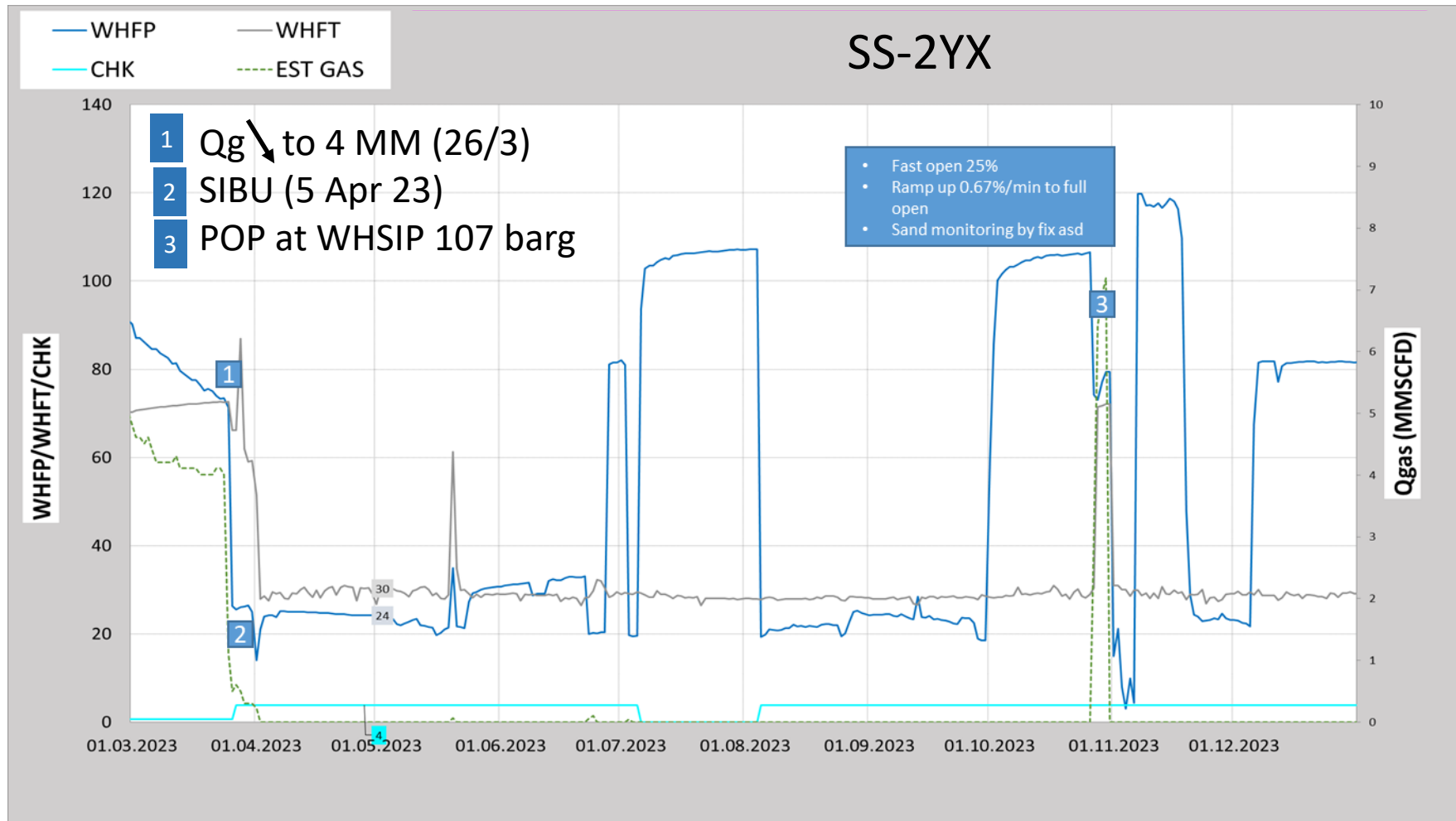


- WHFP showed decline at early POP → NSP process
- Smooth ramp-up in 2 months → good NSP achieve production target



Courtesy of TexeryEnergy by Google.com

SS-2YX: Hanging screen, multiple reservoirs



- WHFP Gradual decline at early stage indicated NSP process
- No flow, suspected d/t liquid loading → Plugging indicator
- SIBU for 7 months, pressure build up
- Re-POP by fast opening choke to unload liquid → leak at Autochoke
- Found failure at packer

Gradual Ramp up minimize Plugging Risk

CONCLUSION



Accomplishment of Sand Control Performance starts when the well is open delicately



Gradual ramp-up/down prevents sand plugging



Natural sand packing help to prevent fine sand produce to surface, longer safe production



Screen & chemical sand control are cheaper than gravel pack, solution for limited stakes, need more patient to produce : slower opening step, lower rates → optimum reserves recovery



Lesson learnt at Sisi-Nubi: consistent to procedures, deep analysis before action on unexpected well behavior



THANK YOU