



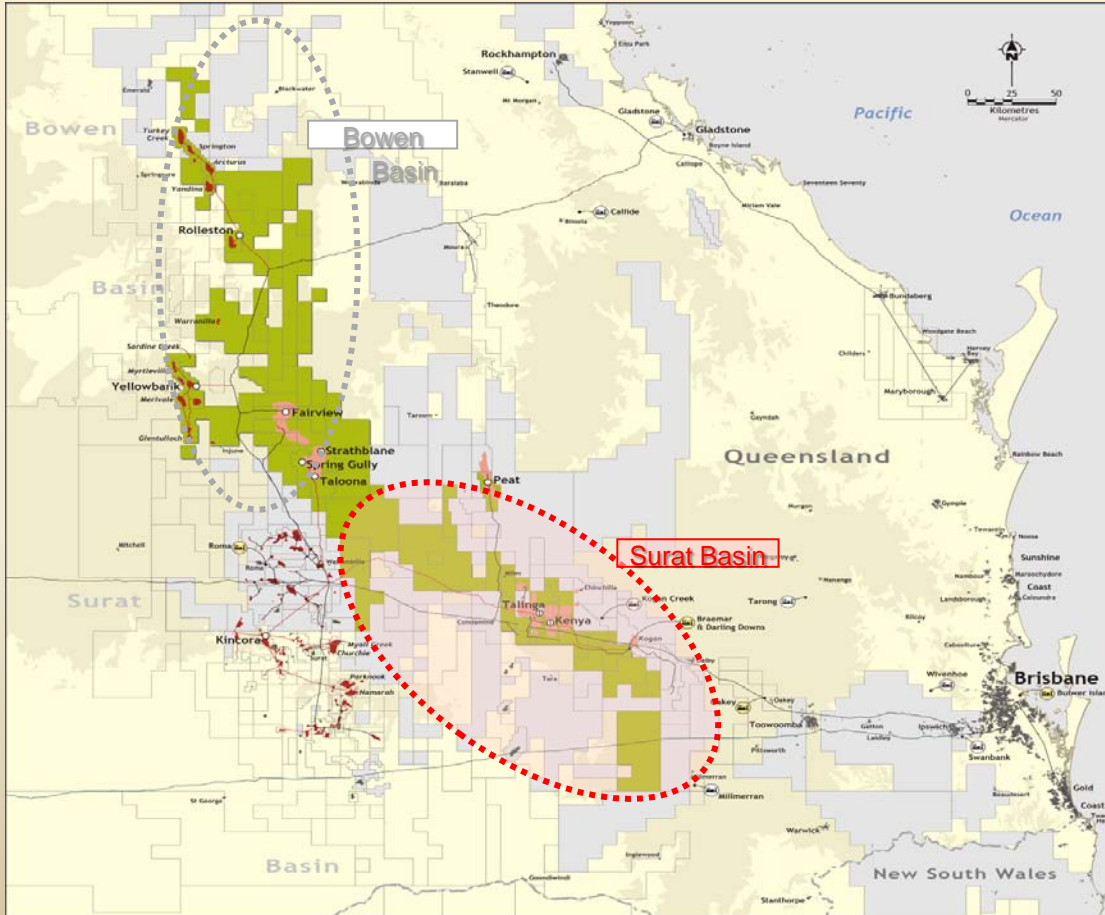
Hybrid Coiled Tubing Development Drilling Technology



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Origin Energy

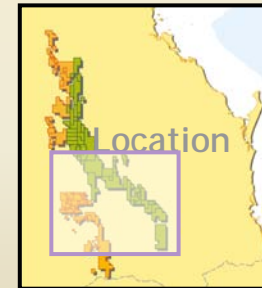


APLNG CSG to LNG Development Project



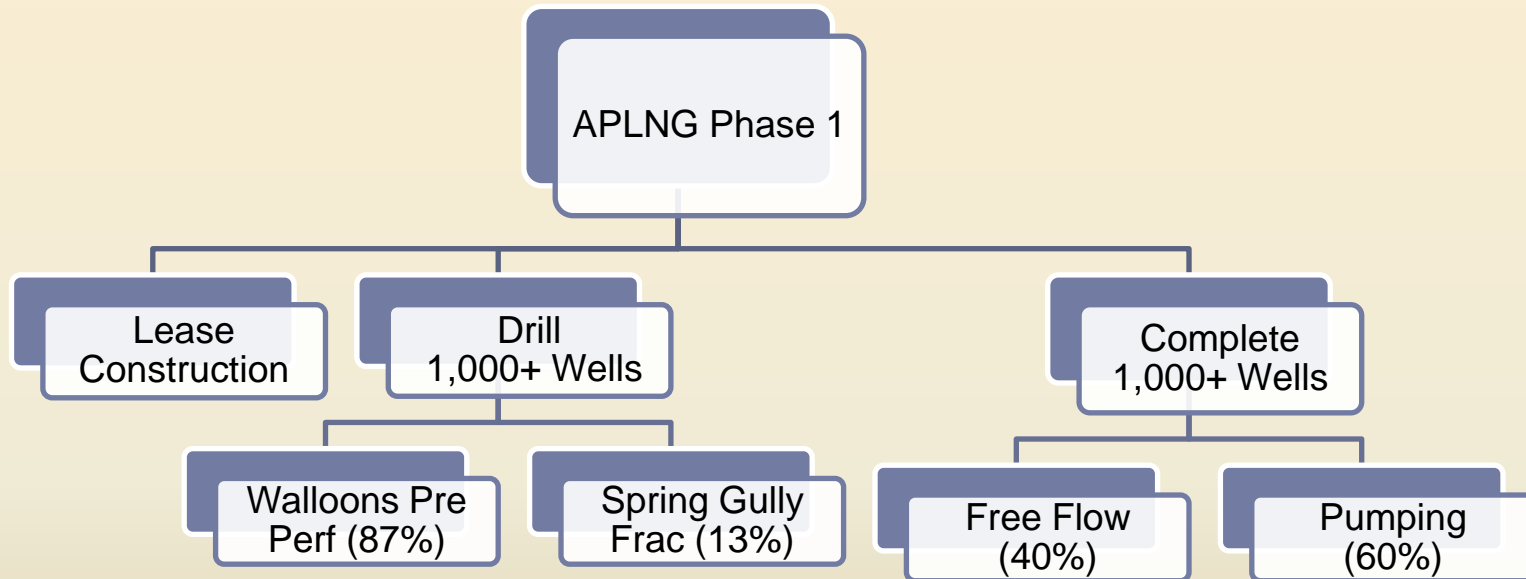
Legend

- All permits
- Other CSG permits
- APLNG CSG





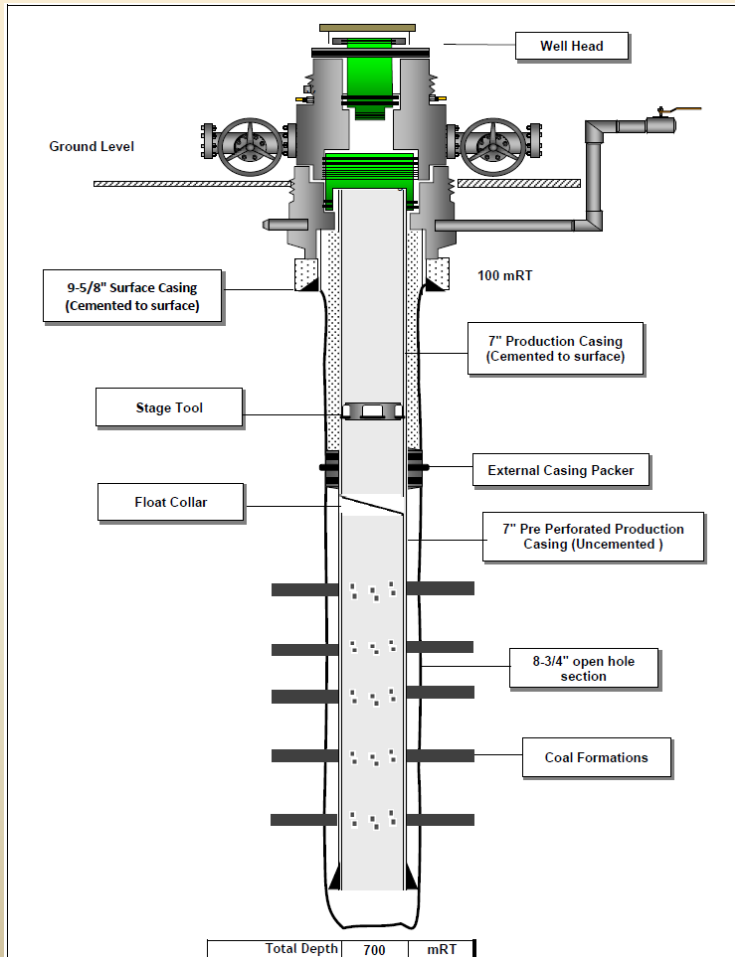
The APLNG Project scope = the need for innovative technology...



- Very repetitive development well “manufacturing project”
- Long term project to be executed over 5 years
- Fit for purpose technology required to deliver maximum development efficiency



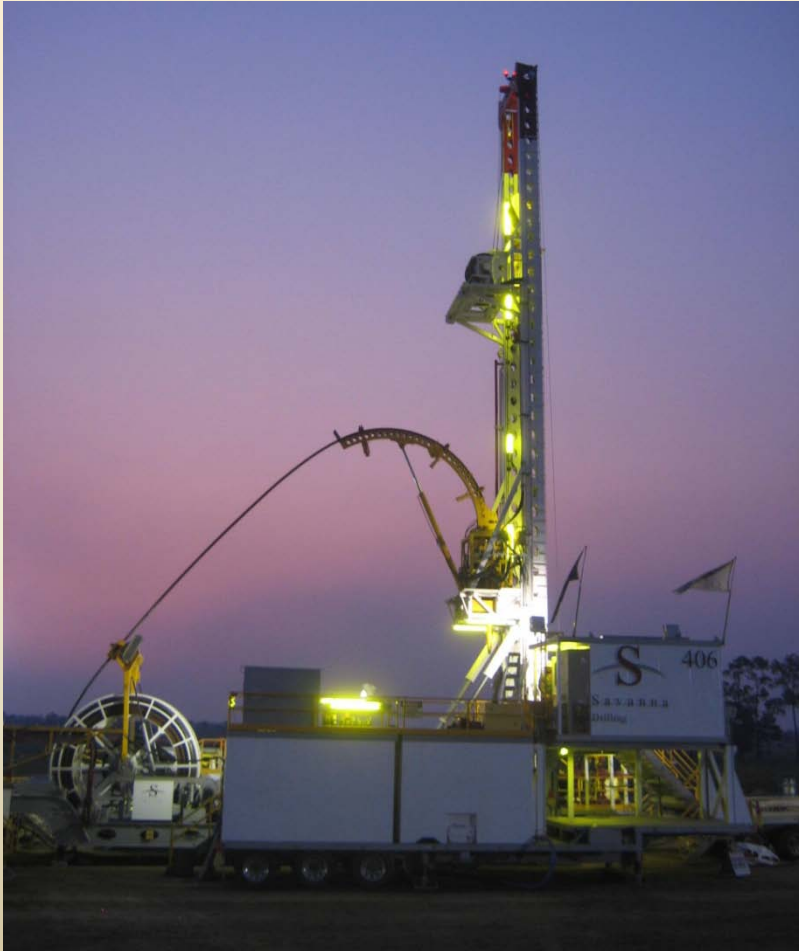
Walloons CSG Development Well Design



- 12-1/4" surface hole drilled to ~100mRT
- 9-5/8" surface casing cemented to surface
- 8-3/4" vertical production hole drilled to ~800 mRT
- 7" production casing with pre-perforated casing spaced out across coal intervals
- Production casing cemented above top coal seam to surface
- Uncemented open hole production interval across coal seams



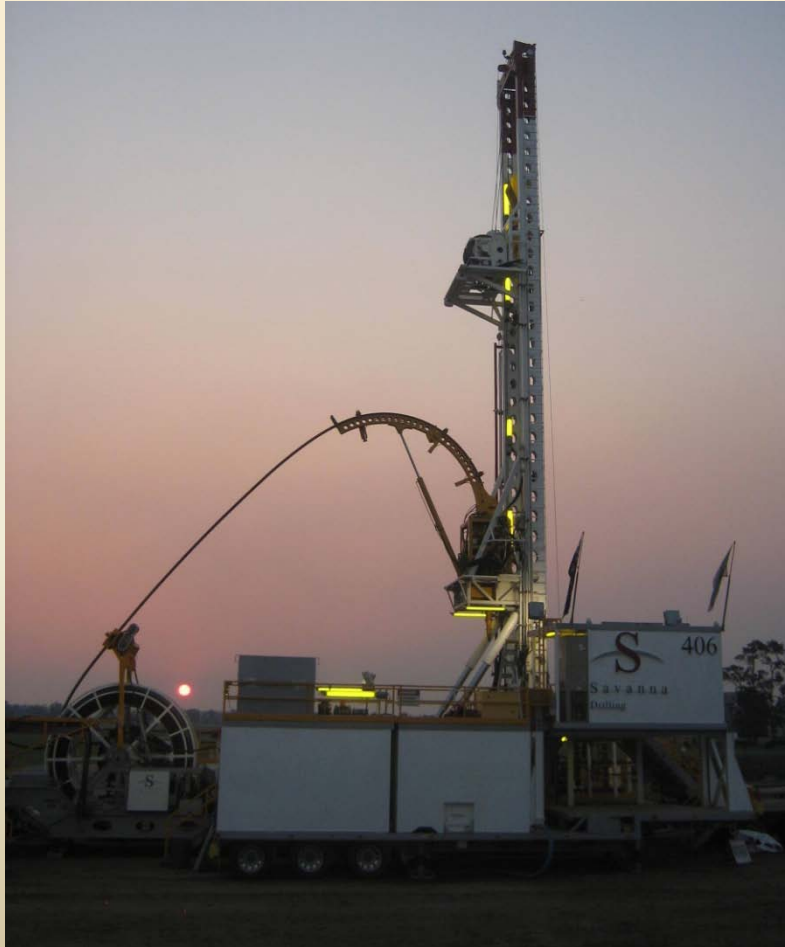
Savanna Hybrid Coiled Tubing Drilling Rig Specs



- 1st of its type in Australia
- Hybrid functionality – coil or conventional drilling capability
- 100,000 lb derrick rating
- 1100m CSG development well depth rating
- 3-1/2", 6.7ppf, GT-80X coiled tubing string
- Hydraulic trailer mounted
- PLC automation
- Volant CRT implementation



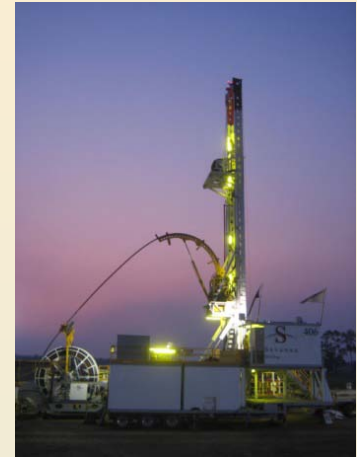
Hybrid Coiled Tubing Drilling Rig Advantages



- Reduced Health & Safety risk exposure
- Enables Environmental improvement
- Increased operational efficiency
- Hybrid Functionality promoting well type flexibility
- Improved hole conditioning
- Reduced noise exposure
- Improved rig move strategy & flexibility

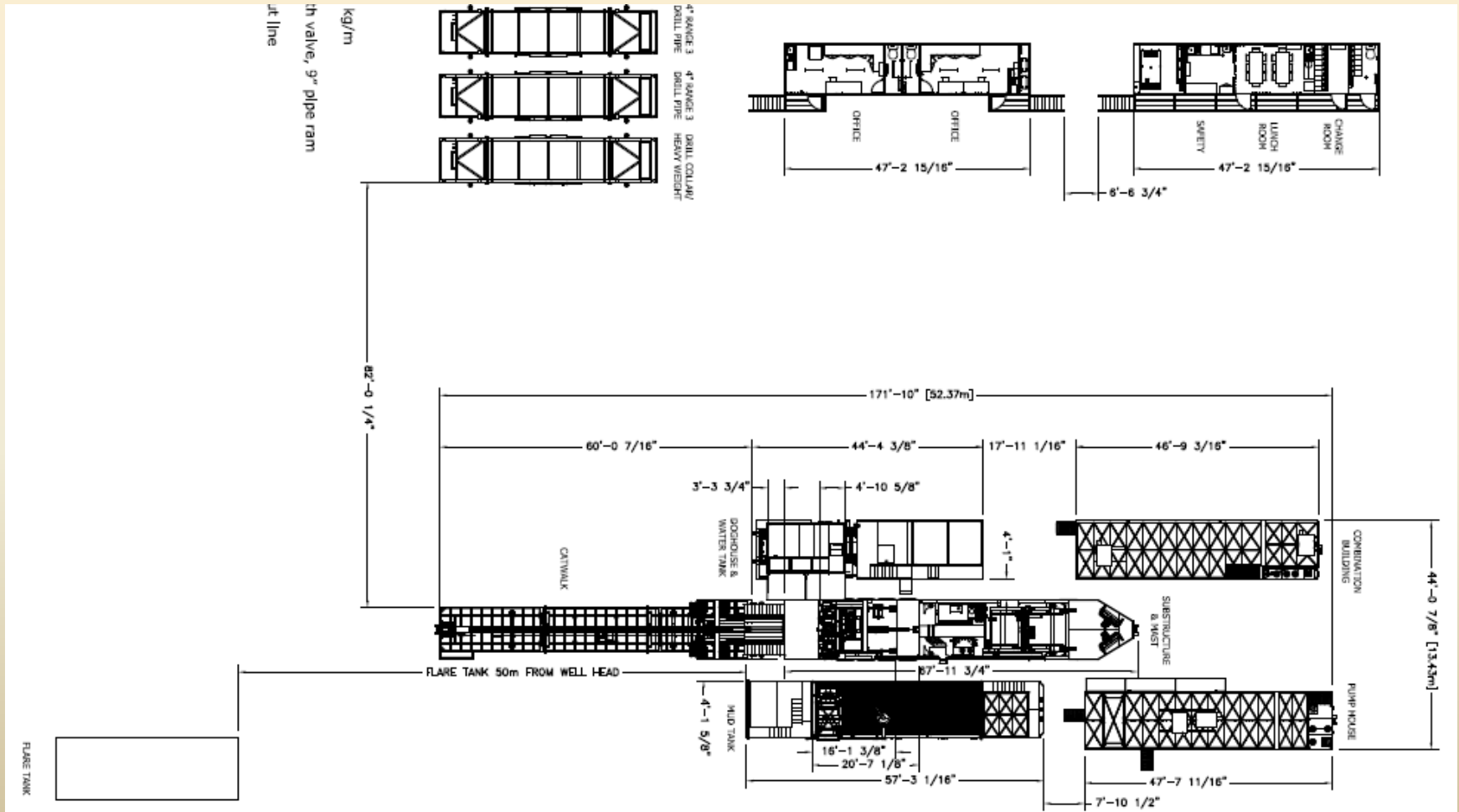


Innovative Technology Improvements





Rig Package Lease Layout



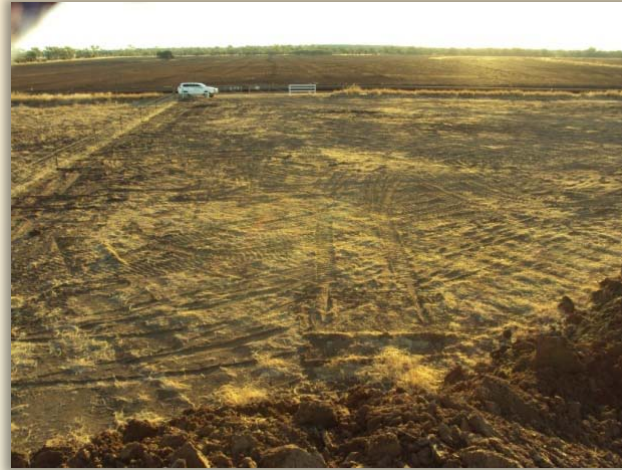


Origin Conventional ADR vs. Coiled Tubing Development Drilling Rig Performance

| Activity | Conventional ADR Drilling Rig | Hybrid Coiled Tubing Drilling Rig | Improvement |
|------------------------------------|-------------------------------|-----------------------------------|-------------|
| Rig Move & R/U (days) | 1.5 | 0.5 | 67% |
| Drilling - Production hole (hours) | 16 | 11 | 31% |
| Running Production Casing (hours) | 12 | 6 | 50% |
| Total Well Duration (days) | 4.6 | 3 | 35% |



Enabling Environmental Improvement



- Continuous drive to reduce landowner disturbance, environmental foot print, & avoid spills
- Implemented of MDL's where possible
- HCT Drilling Rig equipped with hydraulic self-levelling rams
- Reduced equipment footprint
- Reduced fluid leak paths
- Reduced potential wellbore contaminants



Questions?



Thank you