

Gorgon Upstream Overview



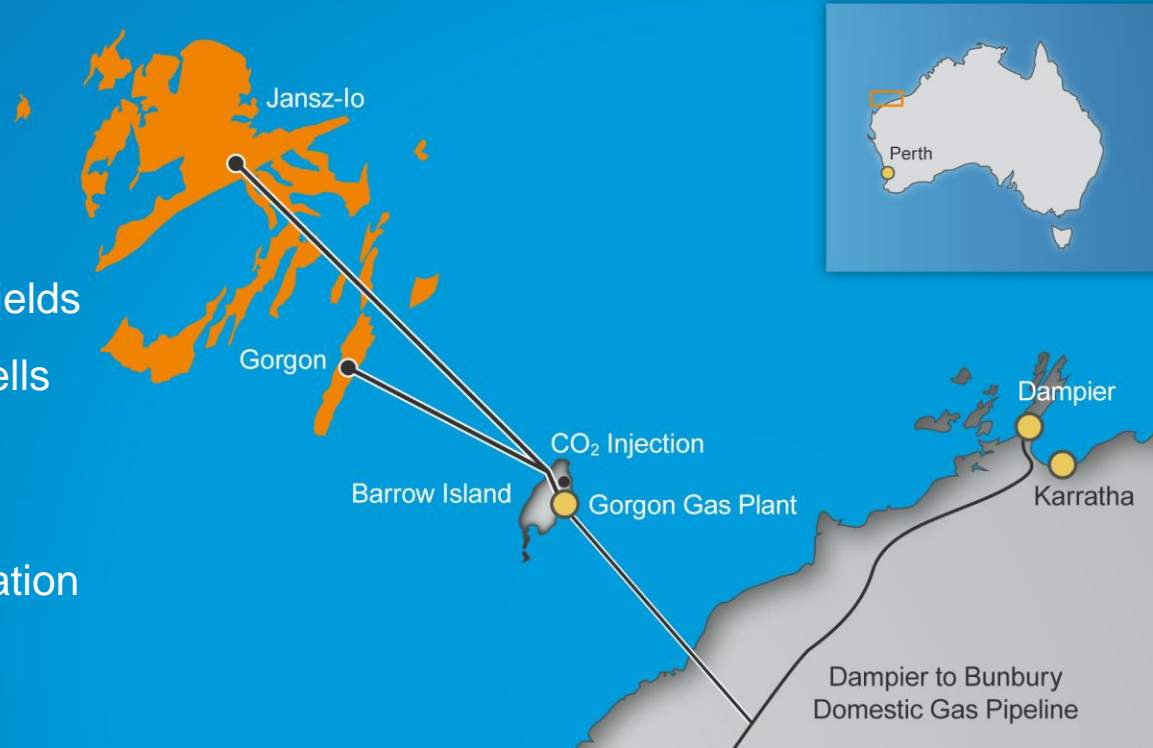
Kevin Shannon

Gorgon Upstream Development
25 September 2012

Upstream Scope



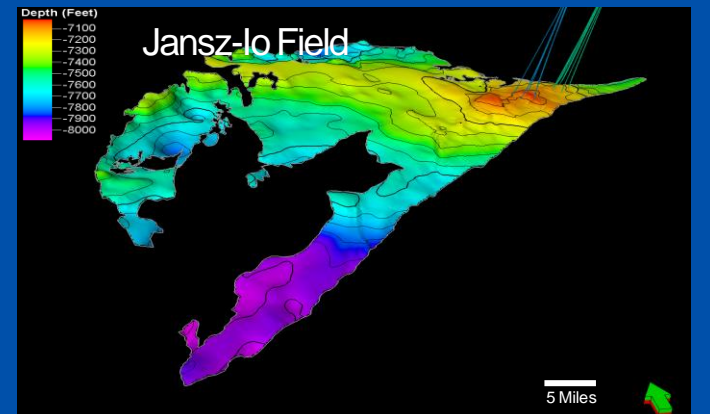
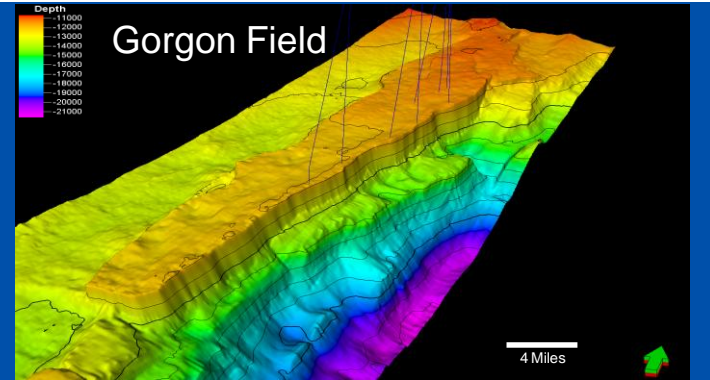
- 22 Tcf resource* to underpin foundation
- Gorgon and Jansz-lo, two separate world-class gas fields
- 18 high-rate, large bore gas wells
- All subsea facilities
- > 500 miles of pipelines with 2.0 million tons of rock stabilization



Drilling and Completion Scope



- 18 high-rate, big-bore development wells
- All Gorgon wells drilled, ready to complete
- 8 out of 10 Jansz-lo wells spudded, one drilled and completed
- Three Gorgon, two Jansz-lo subsea drill centres
- 655 ft – 4,265 ft water depth
- 10,350 ft – 13,600 ft well depth
- 3.1 bcf/d production (Gorgon 1.7, Jansz-lo 1.4)
- Well deliverability
 - Gorgon 270 mmscf/d
 - Jansz-lo 240 mmscf/d
- Gorgon 14% CO₂, Jansz-lo less than 1% CO₂



World Class Wells

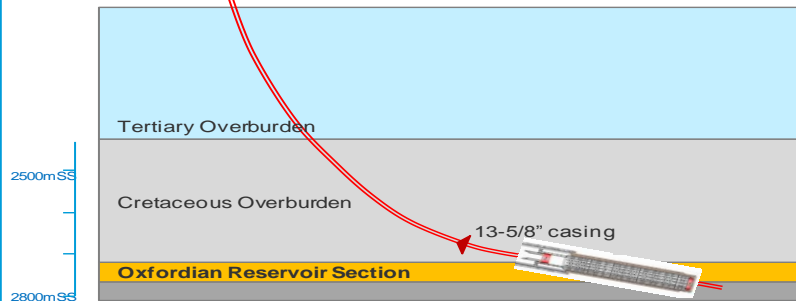
High Deliverability



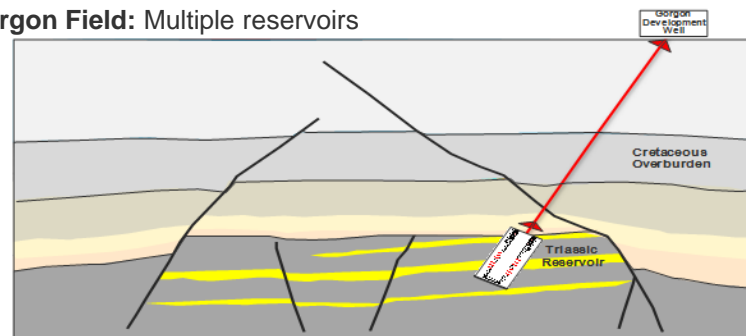
Project	Location	Wells	Avg. Well rate* (mmscf/d)	Field Gas Rate (mmscf/d)	Well Life (years)
Gorgon / Jansz-lo	Australia	18	164	2,950	25+
Troll East	Norway	40	58	2,331	15+
Sakhalin	Russia	13	133	1,728	15+
Shale Gas	United States	Thousands	1.0-2.6		1 - 4
Coal Bed Methane Gas	Queensland	Thousands	0.2-0.8		1 - 4

* Source: Geoscience Australia, Society of Petroleum Engineers, and company estimates

Jansz-lo Field: One reservoir



Gorgon Field: Multiple reservoirs



World Class Wells

Large Scale Completions

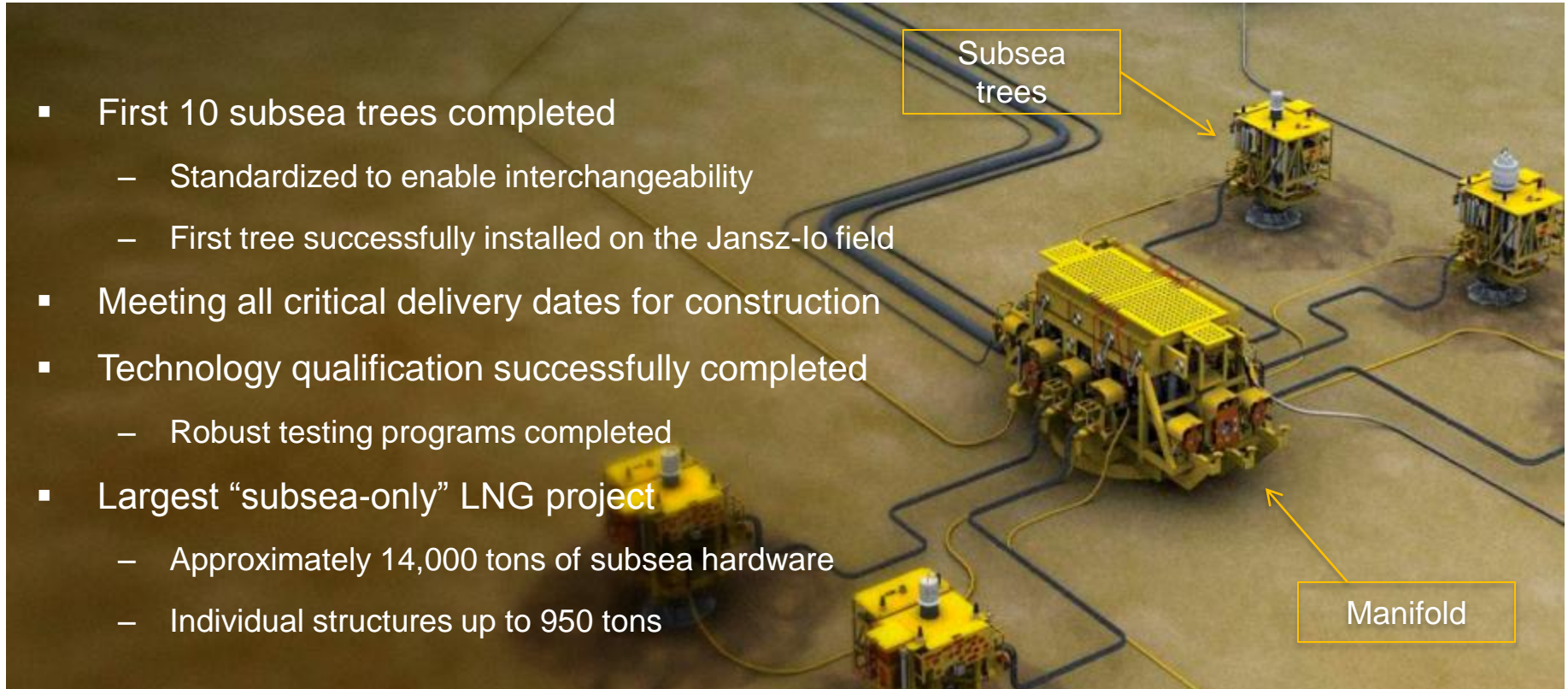


	Jansz completion	Gorgon completion	Typical gas completion
Hole size	8 ¹ / ₂ inches	8 ³ / ₄ inches	8 ¹ / ₂ inches
Completion type	Open hole with 5- ¹ / ₂ " gravel pack screens	7" perforated production casing	7" perforated production casing (or gravel pack)
Tubing	9 ⁵ / ₈ inches	7 ⁵ / ₈ inches	4 ¹ / ₂ inches
Wellbore inclination	75° - 80°	0° - 40°	0° - 40°
Perforation length	230 – 330 feet	500 feet	100 feet
Capacity <small>(erosion limited)</small>	240 mscf/d	270 mscf/d	30 mscf/d
Completion life	25+ years	25+ years	10 years

Subsea Scope



- First 10 subsea trees completed
 - Standardized to enable interchangeability
 - First tree successfully installed on the Jansz-Io field
- Meeting all critical delivery dates for construction
- Technology qualification successfully completed
 - Robust testing programs completed
- Largest “subsea-only” LNG project
 - Approximately 14,000 tons of subsea hardware
 - Individual structures up to 950 tons



Proven Upstream Contractors



Key Project Drivers

- FEED provided high-quality definition
- Strategy to divide packages into manageable scope
- Global economic conditions in 2009 provided opportunities to capture savings

Subsea

- Proven global leaders enrolled
- Technology driven with joint venture expertise
- Subsea equipment vendors
- Corrosion resistant alloy pipe manufacturing technology

Drilling

- Chevron and ExxonMobil global drilling leverage
- Synergy capture
- Common execution plans
- Legacy experience on Barrow Island for CO₂



Upstream Progress Delivering as Predicted



43%
complete

Upstream activities
on track, on budget

1,200
People in
the field

22+
Vessels
supporting
operations

2012 Achievements

- First five subsea trees delivered, first Jansz-10 tree installed
- Jansz-10 drilling program started, first well drilled and completed
- Eight Gorgon wells drilled and ready for completion
- Directionally drilled shore crossing complete
- Construction on the domestic gas pipeline well underway
- All line pipe manufactured and 97% coating complete
- Main subsea umbilical manufactured, ready for shipment
- All shallow water small-diameter pipelines installed



Directionally drilled shore crossing site on Barrow Island



Pipeline installation underway looking out from the shore crossing site.

Pipeline Progress



- More than 500 miles of total pipelines
- Pipe coating completed with 50% delivered to site
- 200 miles of offshore pipeline now installed
- Cross-island pipeline approximately half complete
- Domestic gas pipeline mobilized in June with 30 miles laid
- Large deepwater pipe lay program begins Q1 2013



Drilling Progress



Gorgon Field

- Custom built, new semi-submersible deepwater drill rig
- 8 gas wells drilled to total depth and casing installed
- Results confirmed pre-drill subsurface predictions for reservoir thickness, quality
- Completions and flowbacks scheduled for Q1 2013

Jansz-lo Field

- First Jansz-lo well spudded April 2012
- Batch drilling to capture efficiencies
- First lower completion and open-hole gravel pack installed
- First subsea tree installed

CO₂ Program

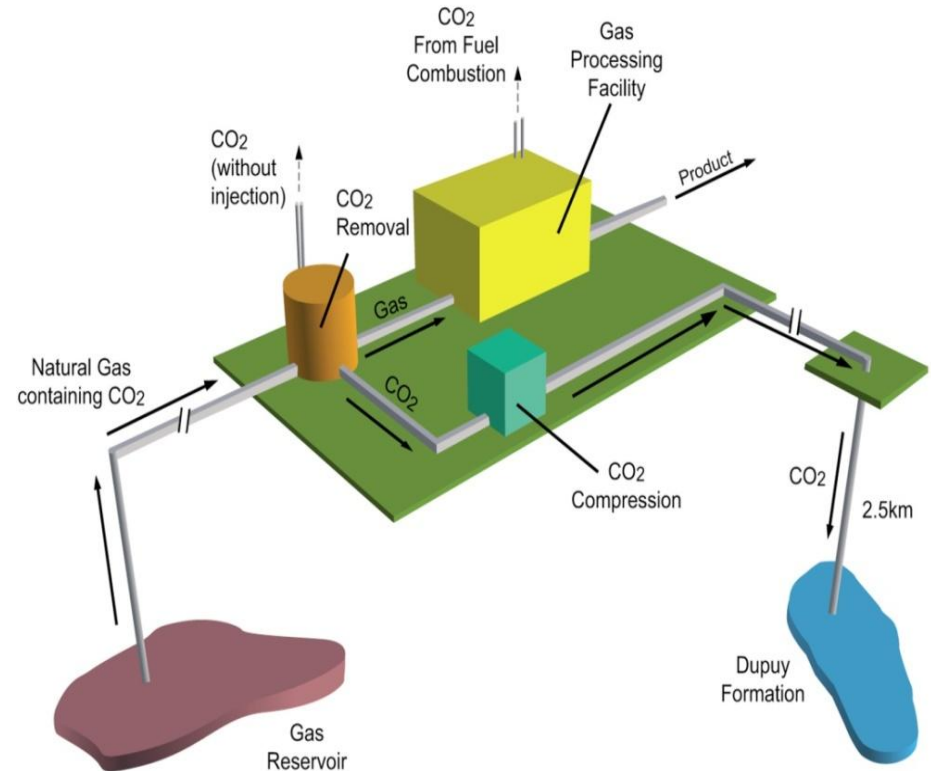
- Custom-built, new drilling rig
- Drilling program commences in 2013
- Ready for Gorgon field gas



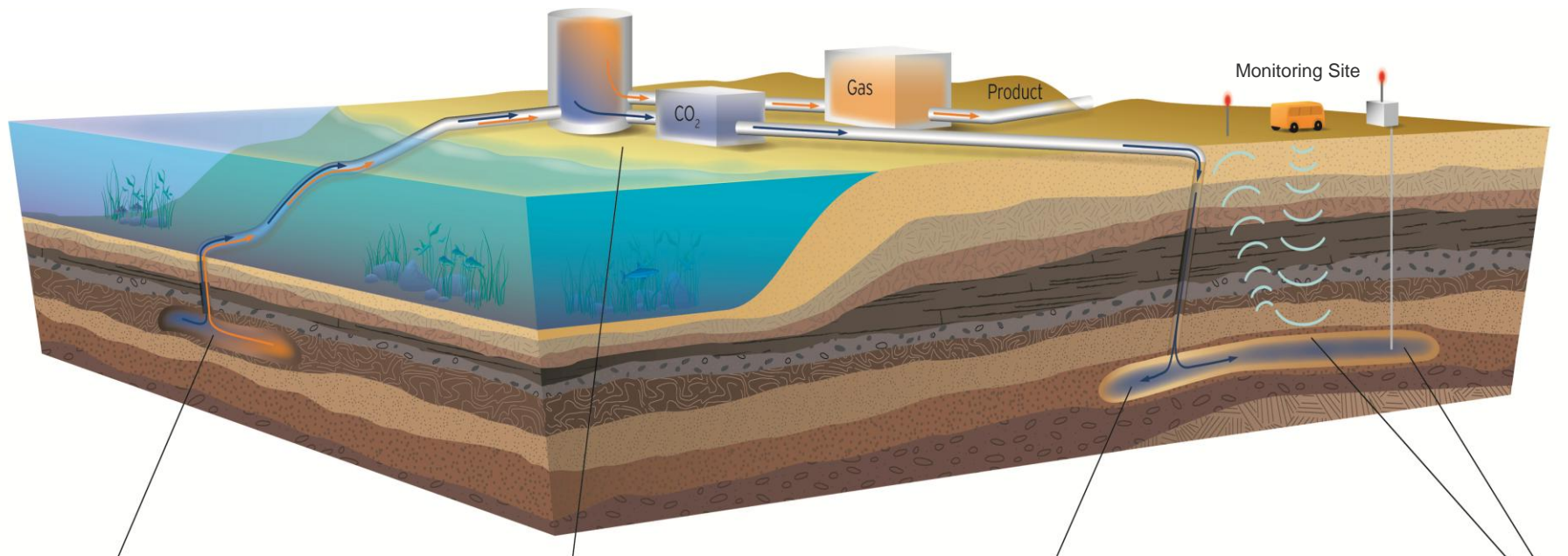
CO₂ Injection and Storage History



- Chevron injecting CO₂ for decades for tertiary oil recovery
- Gorgon reservoirs contain 14% by volume of CO₂
- Chevron participation in CO₂ sequestration research in Australia since 1995
- Dupuy formation under Barrow Island is ideal rock for sequestration
- Government expectation for CO₂ injection included in Barrow Island Act



Reservoir Carbon Dioxide Disposal World's Largest CO₂ Injection Project



1 Natural gas is fed from the reservoir to the plant

2 Naturally occurring CO₂ is separated from the inlet gas.

3 CO₂ is compressed and injected more than 8,200 ft underground in the Dupuy formation beneath Barrow Island.

4 Movement of the CO₂ underground is monitored by repeated seismic surveys and in surveillance wells.

Dupuy Formation Containment Mechanisms

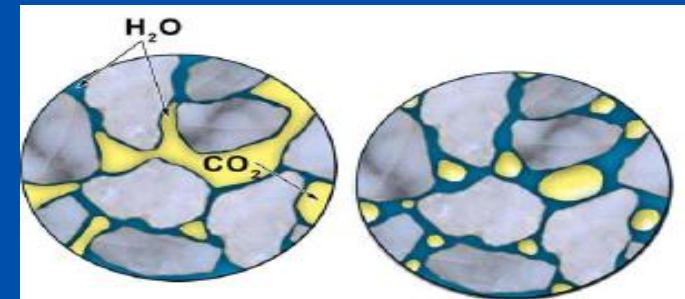


- Two main trapping mechanisms
 - CO₂ solution into formation water
 - Residual gas trapping
- Dupuy formation has ideal permeability
- Other mechanisms
 - Large scale geometric trapping not required (smaller scale structural/ stratigraphic trapping will occur)
 - Dupuy Formation - chemically inert so mineralogical trapping is a longer term effect

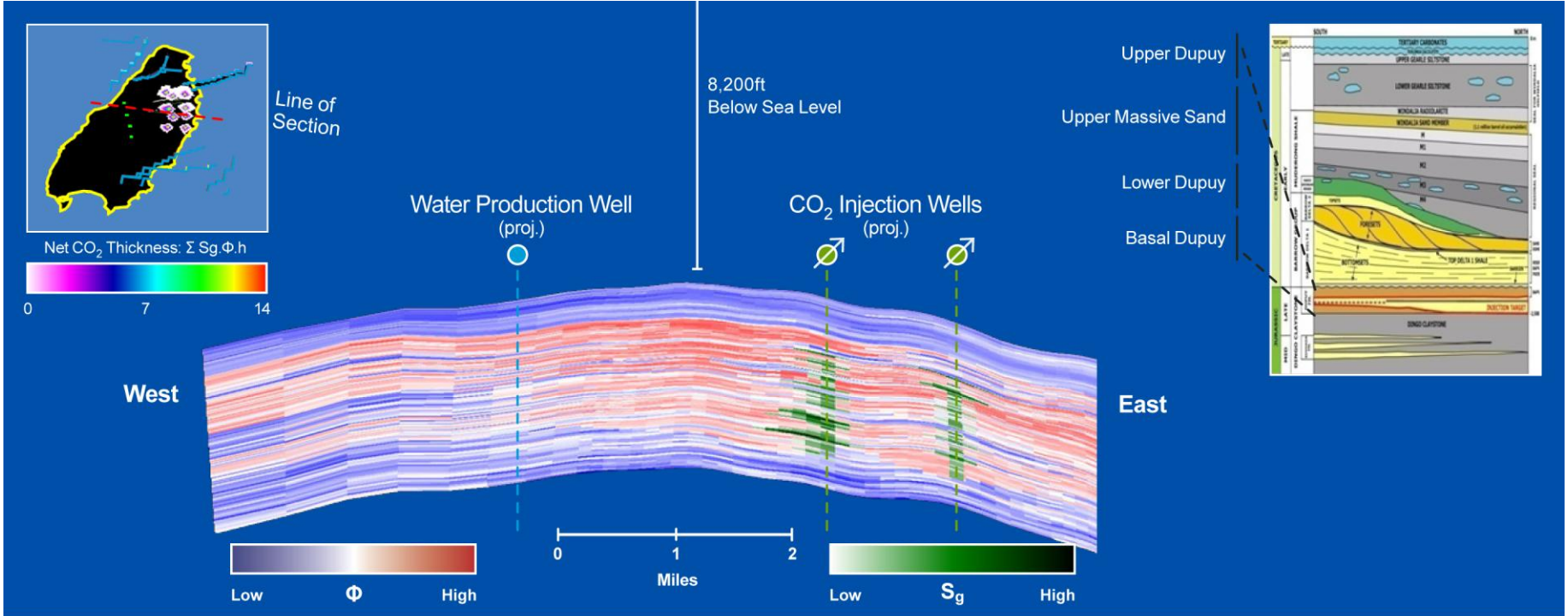


Fine-grained sandstone

1mm



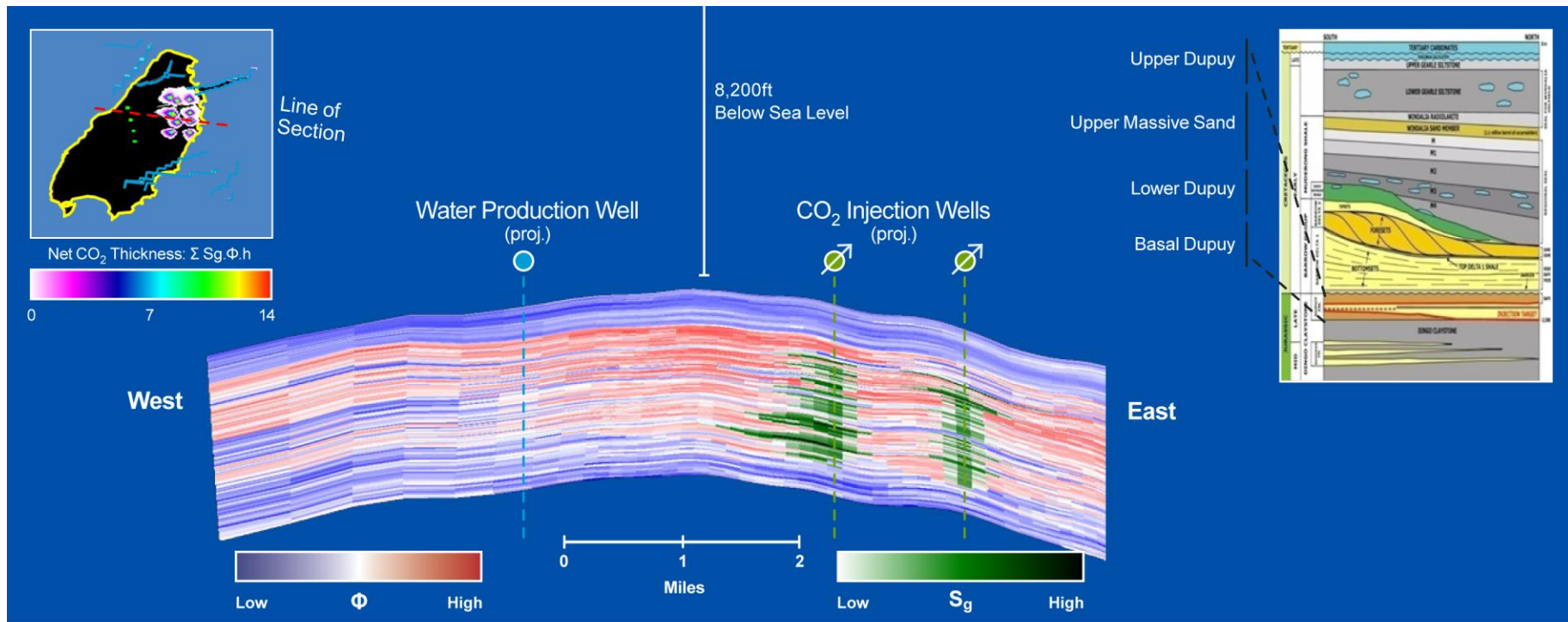
Modeled Migration of CO₂ Over Time YEAR: 0005



Years 5

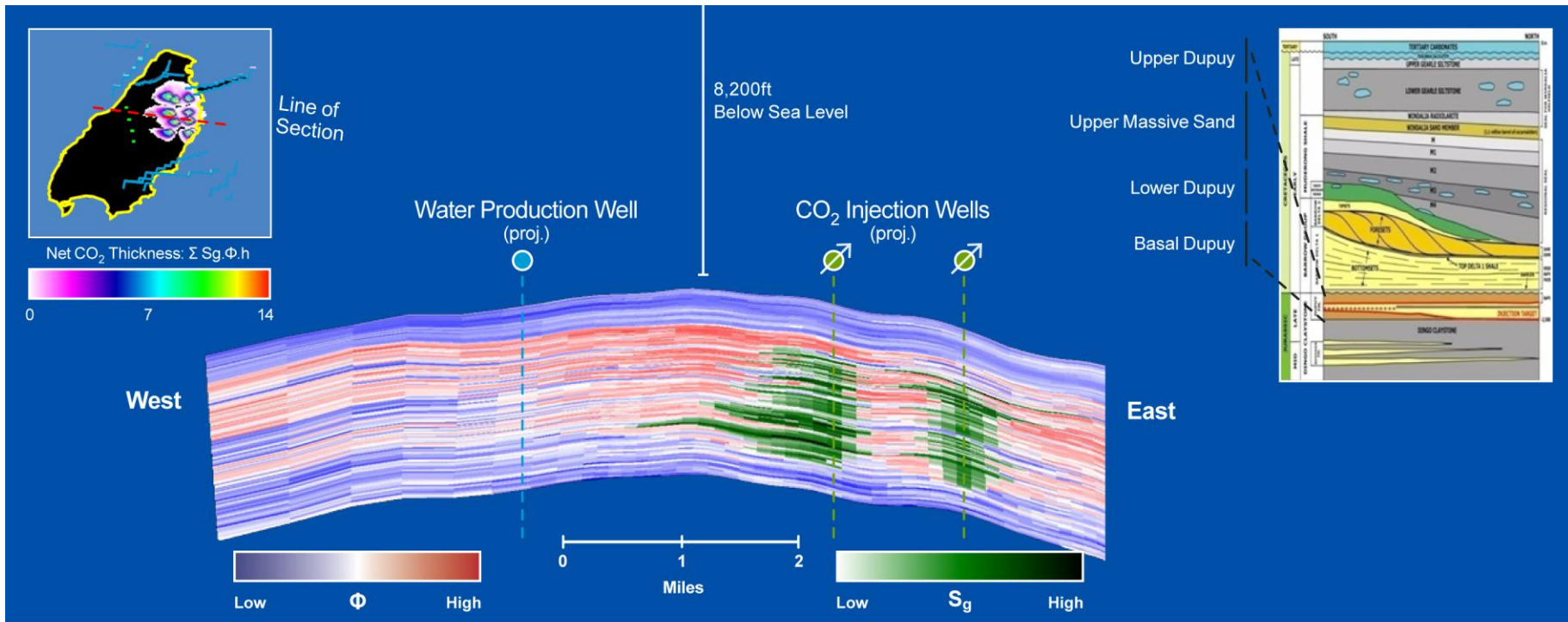
Modeled Migration of CO₂ Over Time

YEAR: 0010



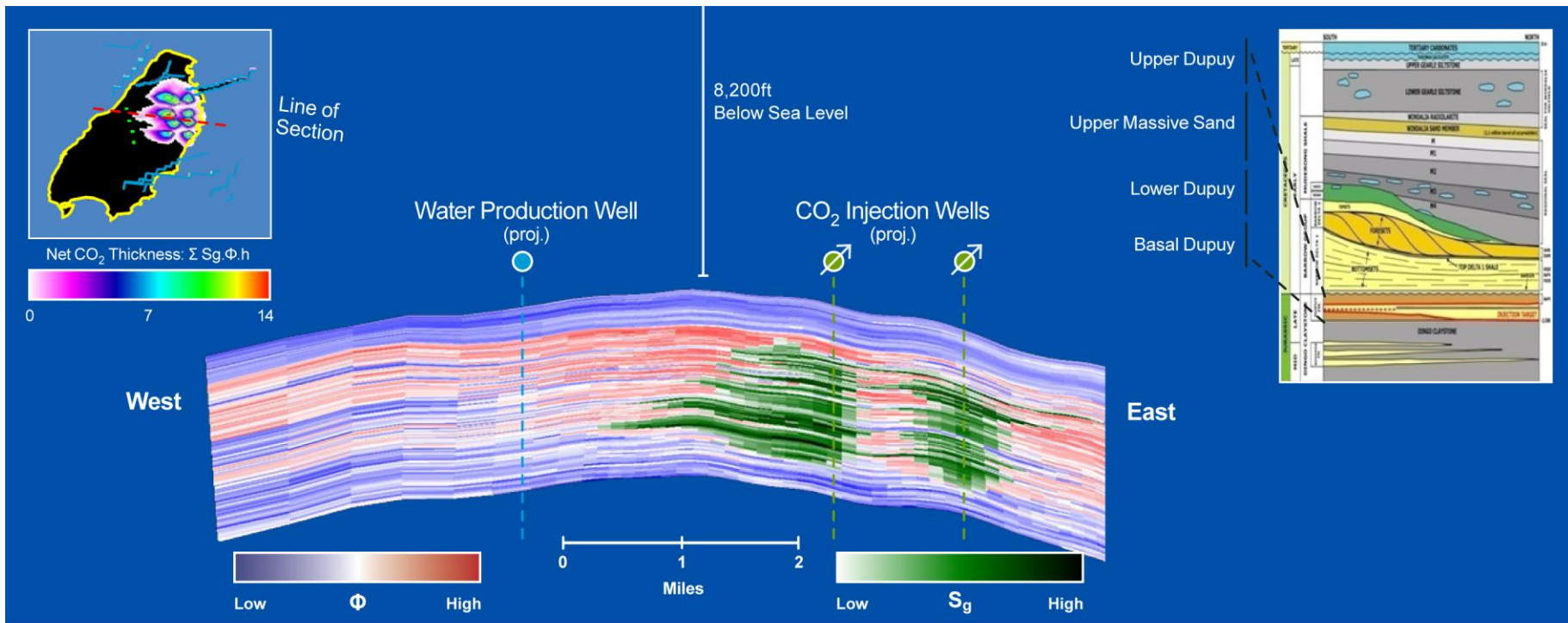
Modeled Migration of CO₂ Over Time

YEAR: 0020



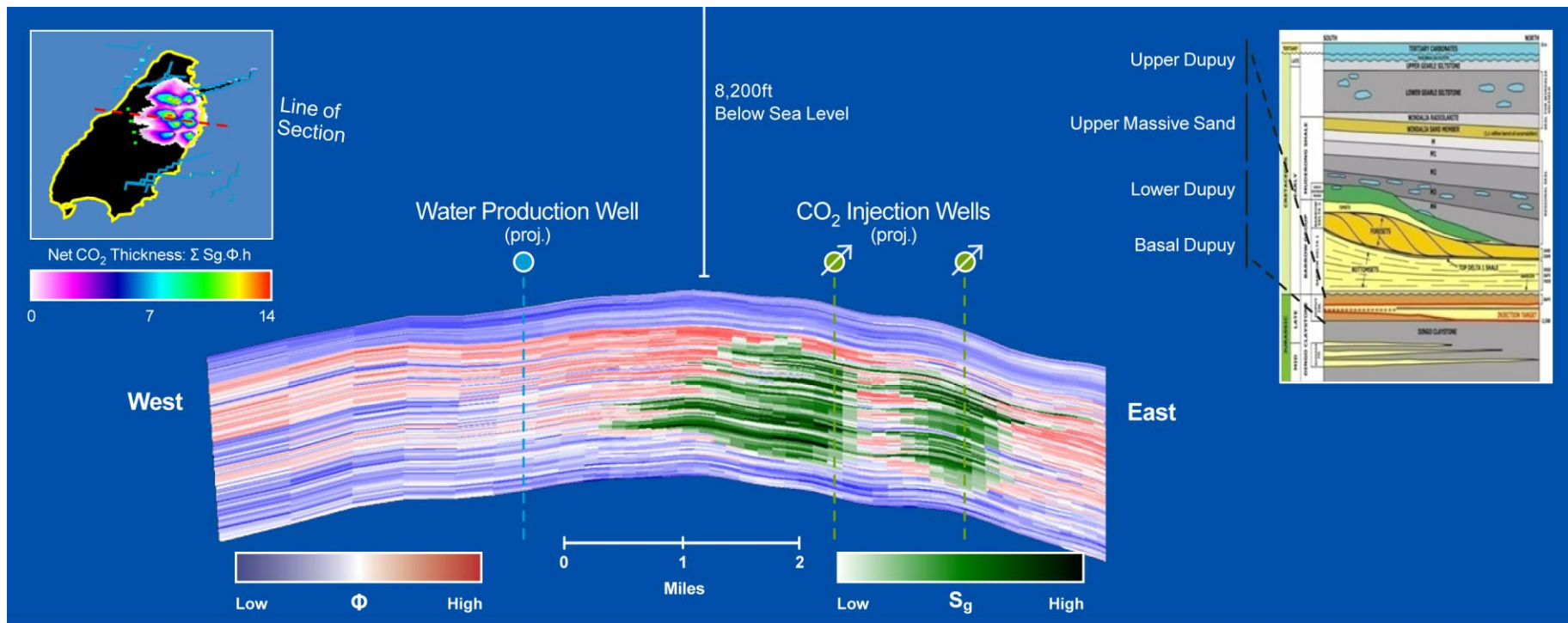
Modeled Migration of CO₂ Over Time

YEAR: 0040



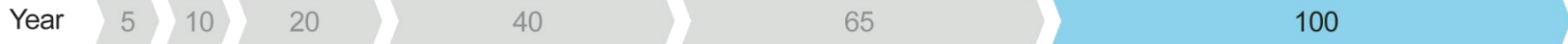
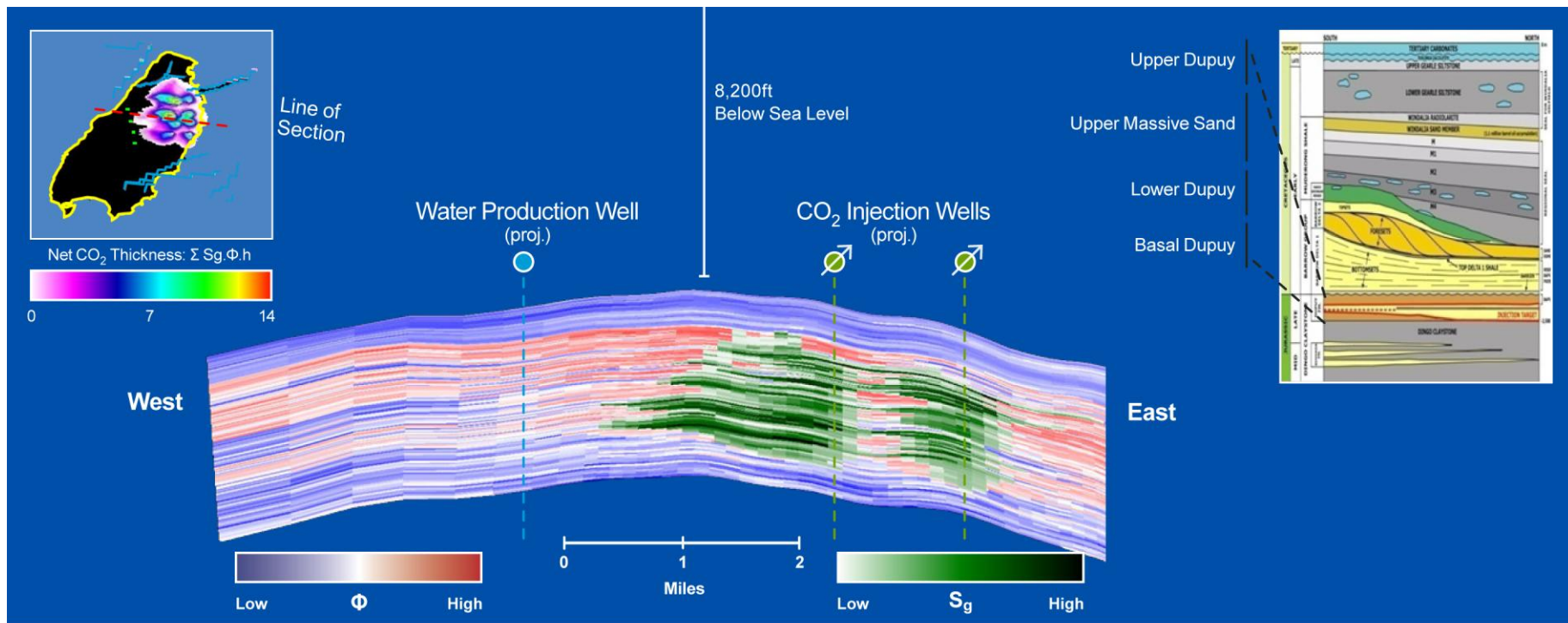
Modeled Migration of CO₂ Over Time

YEAR: 0065



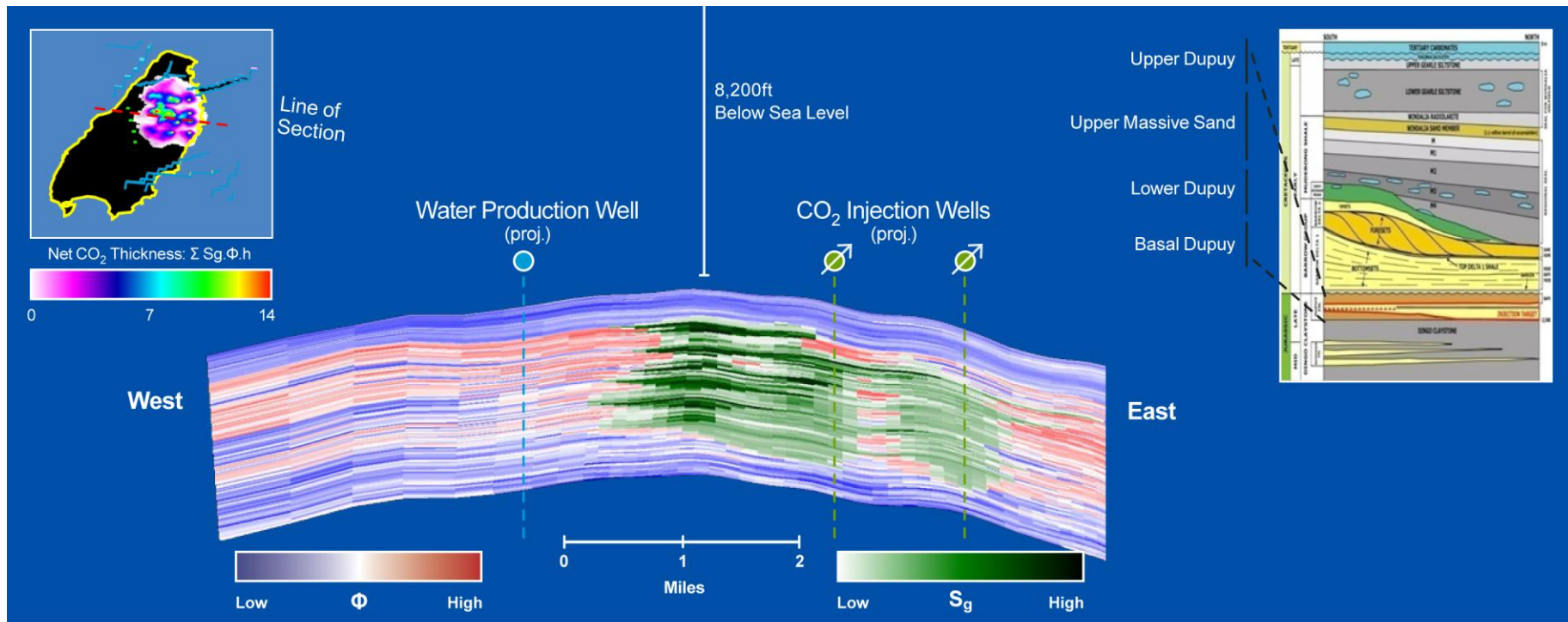
Modeled Migration of CO₂ Over Time

YEAR: 0100



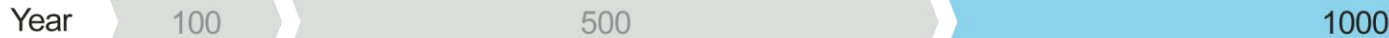
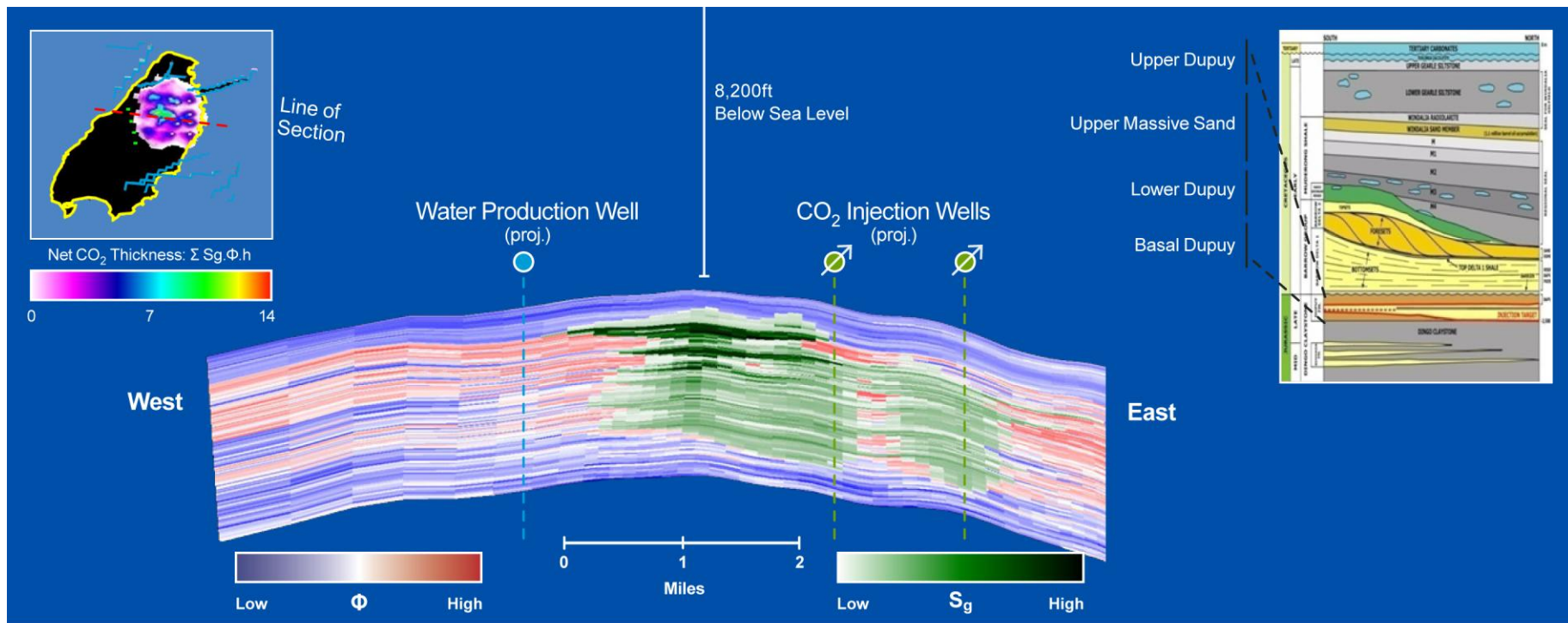
Modeled Migration of CO₂ Over Time

YEAR: 0500



Modeled Migration of CO₂ Over Time

YEAR: 1000



Compressor Design and Assurance Testing



Project includes six CO₂ compressors to be incorporated into three modules

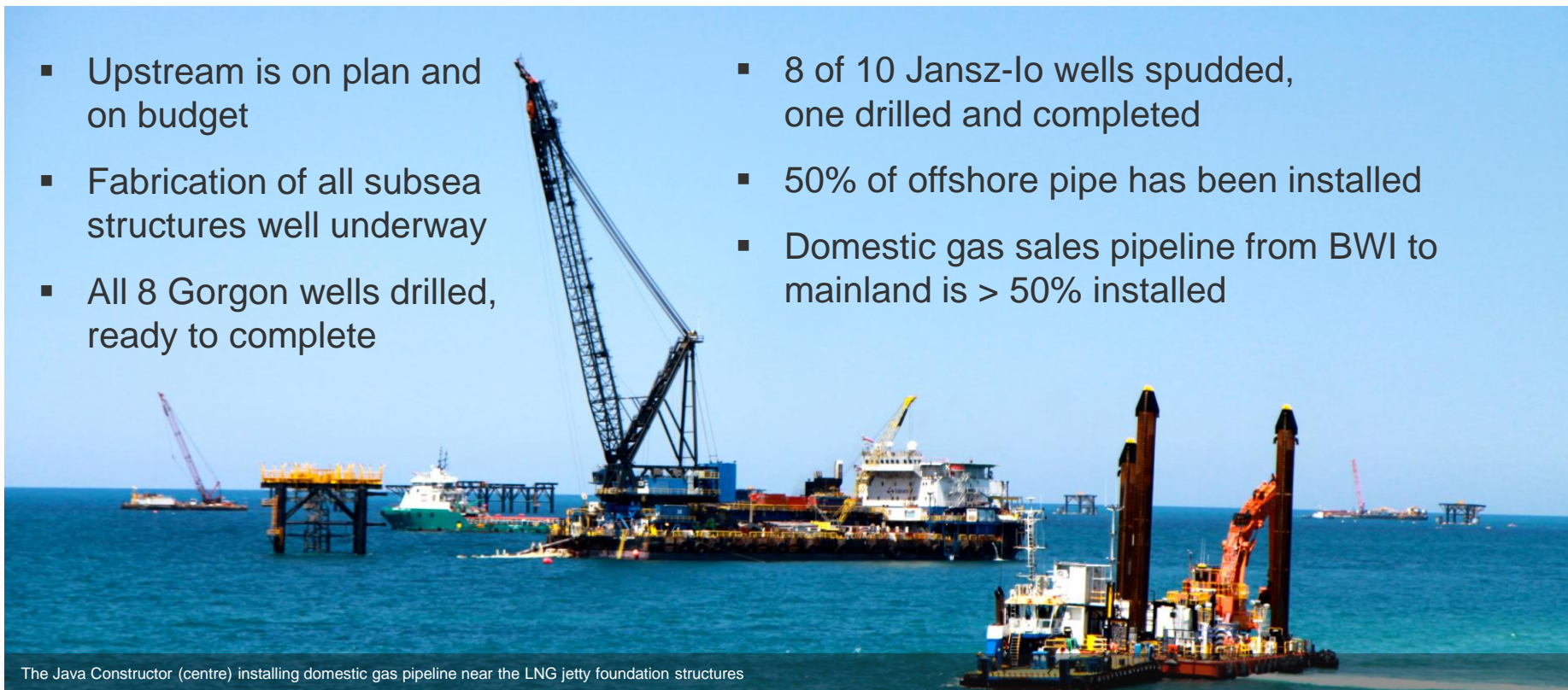
- 200 mmscf/d throughput
- Variable speed electric drive
- Corrosion resistant materials
- Full train assurance test at manufacturing site



Upstream Progress



- Upstream is on plan and on budget
- Fabrication of all subsea structures well underway
- All 8 Gorgon wells drilled, ready to complete
- 8 of 10 Jansz-lo wells spudded, one drilled and completed
- 50% of offshore pipe has been installed
- Domestic gas sales pipeline from BWI to mainland is > 50% installed



The Java Constructor (centre) installing domestic gas pipeline near the LNG jetty foundation structures

chevron.com



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