

2011 BBY Agriculture, Clean Technology & Energy Conference

Crux Liquids Project

Melbourne 19 October 2011 **Presented by**

Michael Maloney Chief Operating Officer

Introduction – Crux liquids project



What has been achieved so far 2012 FYTD

- Funding and farm down negotiations advancing to schedule
- FID targeted by 2011 CY end
- Nexus project management team (PMT) strengthened
- EPCI contract terms with McDermott nearing completion
- Seismic inversion completed well locations being confirmed
- LOI for subsea flowlines and risers
- Commenced final term sheet negotiations for funding
- Completed schedule acceleration studies
- Commenced safety and risk studies
- Progressing engineering and procurement
- RISC reports completed
- NOPSA has accepted Nexus as registered operator

Crux liquids project



- Nexus (85%) and Osaka Gas (15%) hold rights over liquid reserves of the field
- Shell holds rights over the gas reserves
- Production Licence requires recovery operations to have commenced by February 2014
- Nexus and Osaka Gas are able to:
 - Pursue liquids stripping project until 31 December 2020; or, if extension executed, until 31 December 2023; or
 - Participate in Shell operated gas and liquids project

Financing

- Term sheets being finalised for up to US\$1 billion senior debt
- Sell down of Nexus' Crux interest from 85% to 50%, expected to cover Nexus' base equity requirement
- Strong project revenue supports early debt payout
- Leveraging Asian banking liquidity in conjunction with traditional bank finance (China)
- Independent technical expert to be appointed by banks
- Timeline is consistent with FID processes

Project management system

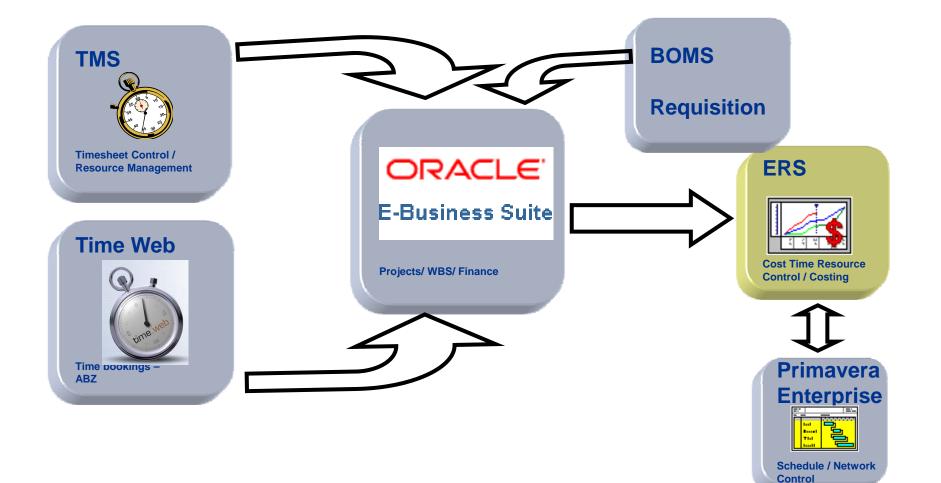


Project management system (PMS) is in place

- This defines the methods and controls needed to execute the project
 PMS covers
- Project integrity
- Change management
- Control of cost and schedule
- Management of procurement and construction
- Communications and reporting

Business system





October 2011

Organisation



- Nexus project management team (PMT) currently comprises >385 man years of relevant experience
- Nexus PMT will be augmented for execution phase, post FID
- McDermott is main FPSO contractor taking the project to FID
- Subcontractors TMS (APL), Topsides fabrication and integration yard (QMW), tanker conversion yard (QWHI) and tanker conversion engineering (Six Tee)
- Wood Group is supporting the Subsea element of the project
- AGR Perth analysing existing well design

Leading contractors – towards FID



- McDermott operates in more than 20 countries across the Atlantic, Middle East and Asia Pacific
 - In 2010, McDermott was ranked in top 10 O&G engineering contractors by revenue
 - McDermott has extensive topsides engineering and fabrication experience and is a leading offshore installation contractor
- Proven mooring design from Advanced Production and Loading (APL)
- Proposals expected this month from APL or Framo for swivels
 - Framo gas swivel qualified to 515 bar @ 120 deg C and delivered to 3 projects (BP, BG and OGX)
 - Framo swivel can be easily integrated into the APL turret system for Crux
- FPSO fabrication planned for China shipyards

APL based turret mooring system with swivels



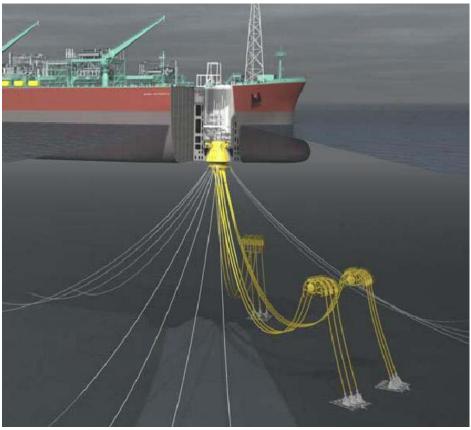


- Crux TMS based on APL STP concept
- Larger "5000" unit with full depth moonpool
- Buoy supports chains and risers
- Fully disconnectable design
- Pre-install prior to FPSO hook-up
- Swivel stack within moonpool
- 4 fully rated production swivels
- 1 fully rated re-injection swivel
- Simple re-injection manifolding downstream
- Emphasis on proven track record

APL swivel stack within turret moonpool







October 2011



- GE Compressors
 - Reinjection Compressors awarded to GE Florence
 - First (of 2) Compressor ready for testing late October 2011
- Cameron Subsea Trees
 - Factory Acceptance Test of first two subsea trees
- Flowlines & Umbilicals
 - LOI issued to Wellstream

Current status



FPSO

- Revised mete-ocean analysis led to the decision for a disconnectable FPSO based on a converted Suezmax tanker
- SBM engineering has been validated
- Critical equipment has been identified and quotations have been obtained from suppliers
- Further definition of piping, flare, modules and structural supports and a new topsides general arrangement plan has been produced

Tanker

- A set of tanker selection criteria has been developed
- 4 candidate vessels have been identified

Subsea

- A new field layout has been produced to optimise FPSO location and flowline lengths based on current well locations
- Scopes of work and specifications have been updated and supplier quotations have been received for SURF components
- Regulatory Plan has been prepared

Technical activities have focused on supporting RFQ for critical components



	Crux-1	Crux-2	Crux-2ST1	Crux-3	Crux-4	Libra-1	Octans-1
Date	Apr-00	Dec-06	Dec-06	Dec-07	-07 Jan-08 D		Jun-09
Conventional Core	\checkmark			\checkmark			
Sidewall Core	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Production Test	$\checkmark\checkmark$			\checkmark			
Pressure Tests	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Fluid Samples	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	✓
Resistivity Logs	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓
Nuclear Logs	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓
Acoustic Logs	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	✓
NMR Logs	\checkmark						
Spectral Gamma Logs	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
Borehole Image Logs	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		
Velocity seismic profile	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	

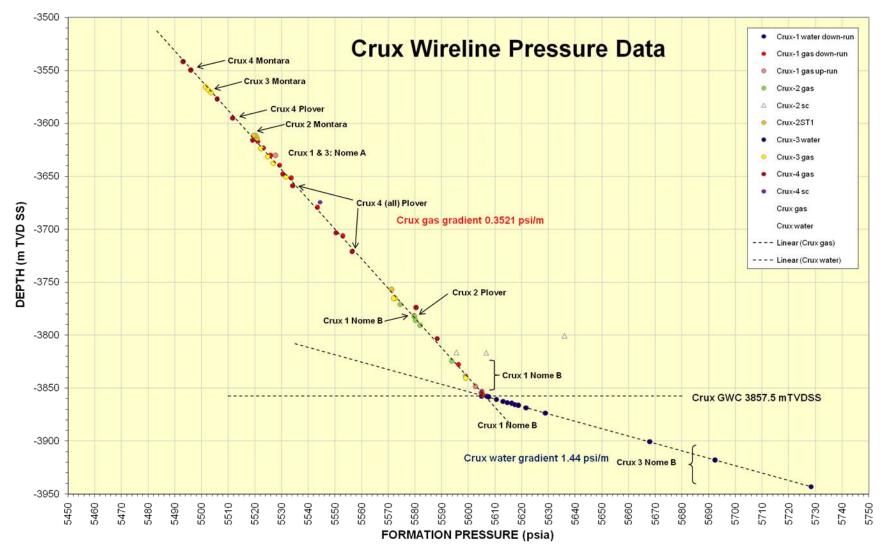
Seven modern boreholes with comprehensive data acquisition (logs, cores, test data)

- Petrophysical well evaluation is reliable
- Numerous well/seismic ties facilitates confident seismic interpretation

* Red colour indicates data not acquired

Subsurface: 2 Confidence in G&G data base : Well pressure data

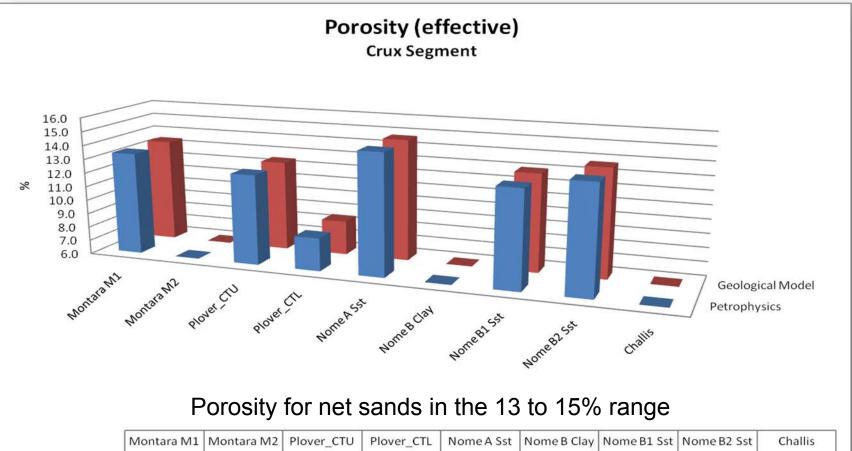




Pressure data indicates a single gas column greater than 300m



Lower Montara, B Clay and Challis zones are treated as non-net

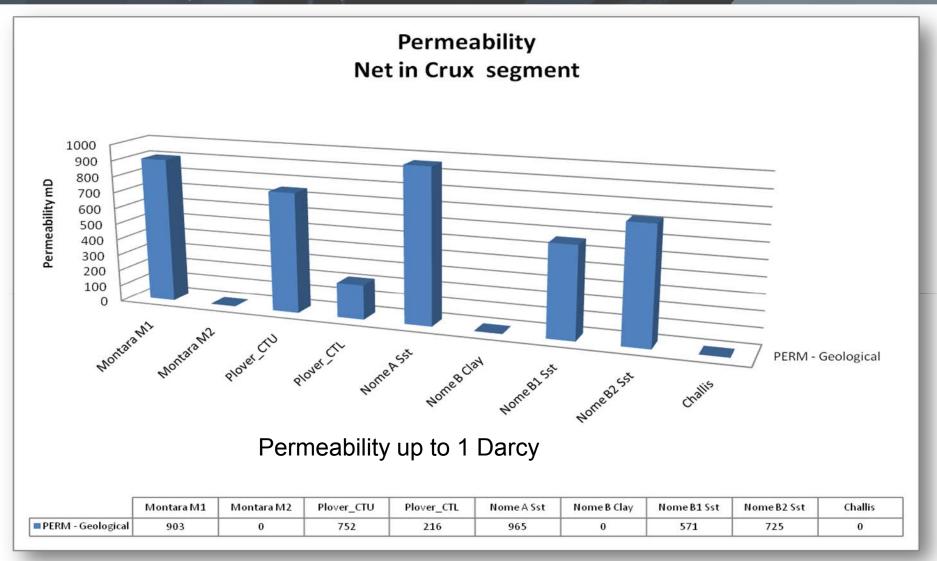


	Montara M1	Montara M2	Plover_CTU	Plover_CIL	Nome A Sst	Nome B Clay	Nome B1 Sst	Nome B2 Sst	Challis
Petrophysics	13.4	0.0	12.5	8.4	14.7	0.0	13.0	13.7	0.0
Geological Model	13.4	0.0	12.5	8.5	14.7	0.0	13.0	13.7	0.0

Log evaluations have been supported by conventional core analysis

Subsurface: 4 Reservoir quality : Permeability

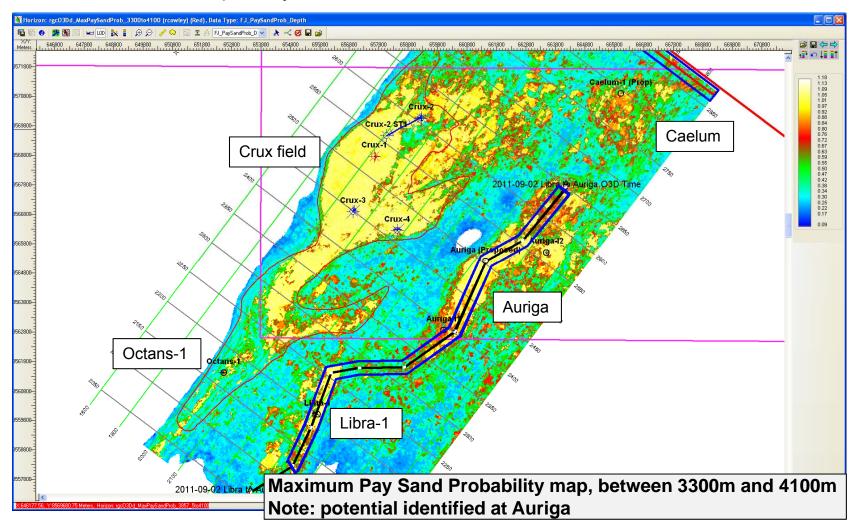




Lower Montara, B Clay and Challis zones are treated as non-net

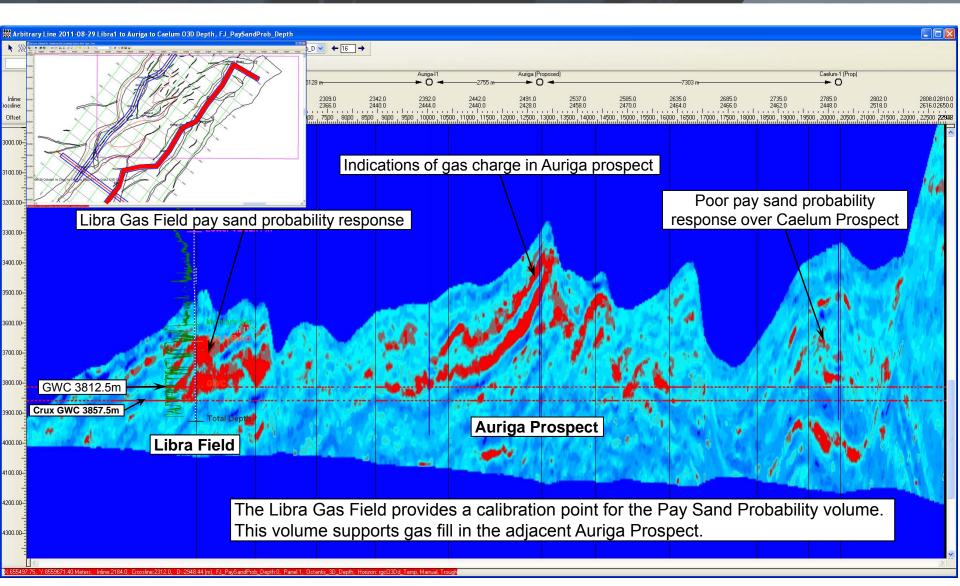


2011 inversion data proved effective in identifying/mapping sand distribution & pay probability Confirmed Nome as the primary reservoir across the field



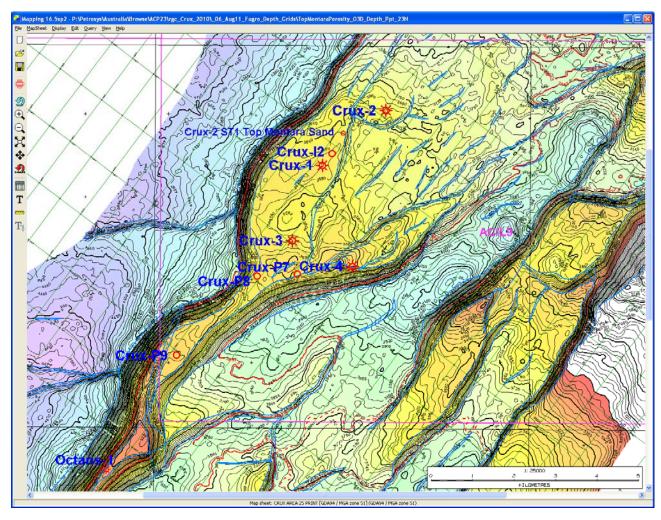
Subsurface: 6 Auriga potential confirmed





Subsurface: 7 Well locations confirmed





- Four producers/four injectors planned. Well locations (except for P9) accepted
- P9 well location under review due to uncertainty of South Crux connectivity to main horst
- Based on 2011 seismic inversion data and correlations across the Crux Field, conclude the following:
 - P9 well will intersect Nome 'B' sands
 - with connectivity into the Crux Main Horst
 - with a high pay sand probability
 - Confidence in P9 location increased

Project costings : Pre-FID and CAPEX



- Pre-FID Capital Raising in April 2011 allocated \$20 million to process
- Cost projections track within budget
 CAPEX
 - FPSO current estimates\$675 millionSubsea current estimates\$250 millionDrilling estimates\$350 millionTotal\$1275 million
 - * Excludes financing costs and project contingencies
 - Crux Annual Opex Estimate US\$54 million including:
 - FPSO Manning
 - Maintenance
 - Includes 1 workover rig mob/demob
 - Support & consumables
 - Logistics (Supply base, Marine & Aviation Support)



Operations

- Nexus is committed to give priority to Health, Safety and Protection of the Environment in the operation of the Crux development
- Operations & Maintenance Management
 - Disconnectable FPSO remains under ships classification rules
 - Manned to "Australian disconnectable FPSO Model"

Schedule

- Project scheduled to produce liquids in 2014
- Converted tanker option saves 6 months (vs new-build option)
- Critical Path runs through tanker identification and conversion, topsides fabrication and integration, offshore installation and commissioning

Contractual status



McDermott

 Currently operating under early contractor involvement (ECI) reimbursable cost time resource (CTR) contract

Wood Group

Currently operating under reimbursable CTR

Cameron

- Subsea trees and controls
- Wellstream LOI only
- Subsea flowlines and risers

GE (Nuovo Pignone)

Reinjection Compressors

Conclusion – Crux liquids project



What has been achieved so far 2012 FYTD

- Funding and farm down negotiations advancing to schedule
- FID targeted by 2011 CY end
- A strong Nexus project management team
- EPCI contract terms will be ready at FID
- Seismic inversion successfully defines well locations
- Funding and potential farm down discussions are advancing
- LOI for major LLIs (such as subsea flowlines and risers)
- Schedule is well understood
- Safety and risk studies are progressing
- Engineering and procurement are progressing



"Ambitions shaped by a passion for growth and technical innovation

with a foundation of business and operational integrity"

For further information please contact:

Nexus Energy Limited Level 23, 530 Collins Street Melbourne VIC 3000 Ph: +61 (3) 9660 2500 Website: www.nexusenergy.com/au