



## FACT SHEET

### EXPLORATION AND DISCOVERY

- Brutus encompasses two OCS leases in the Green Canyon area – Blocks 158 and 202. It is located approximately 165 miles southwest of New Orleans in water depths ranging from 2,750 to 3,300 feet.
- The leases were acquired in OCS Lease Sale 98 in March 1985, for a total bonus of \$ 15.5 million.
- Shell Offshore Inc. owns 100% of the leases.
- The discovery well was drilled on Green Canyon Block 158 in December 1988. An appraisal well was drilled on Green Canyon Block 158 in 1994. A third well was drilled in 1997 on that same block, with a bottom hole location on Green Canyon Block 202.
- Target reserves are in the Plio-Pleistocene sands at a depth of approximately 12,500 – 17,500 feet, subsea.

### DEVELOPMENT

- Shell announced in April 1999 its plans to develop Brutus utilizing a tension leg platform (TLP) to be installed on Green Canyon Block 158 in 2,985 feet of water.
- Total project cost is about \$800 MM, including pipelines, excluding lease costs. About 70 percent of the costs are associated with the fabrication and installation of the hull, deck, facilities, drilling rig and pipeline. The other 30 percent of the costs are related to drilling and completion of the wells.
- Batch setting of the eight wells was completed January 3, 2000 using Diamond's Ocean Worker semisubmersible drilling rig. Six of the planned development wells for the eight-slot TLP were subsequently predrilled to total depth following the batch set operations. Drilling operations using the Diamond Worker rig concluded in April 2001.

- An H&P contract platform rig completed all six pre-drilled wells and drilled and completed the two remaining wells.
- Installation of the TLP took place in June 2001. Heerema was the contractor for the installation using the derrick barge, Hermod.
- Oil production from the platform is transported approximately 26 miles via a 20-inch diameter pipeline to South Timbalier 301 "B" platform where it will be connected to the existing Amberjack System.
- Gas production from the platform is transported approximately 24 miles via a 20-inch gas pipeline and will be connected to the existing Manta Ray Offshore Gathering System in Ship Shoal Block 332.
- Average API gravity for the oil is low-mid 30 degrees. Oil/gas ratio is 70:30. Sulfur is 1.5%.

### **PRODUCTION**

- Production began in August 2001.
- The TLP facilities are designed to accommodate a peak gross production of approximately 100,000 barrels of oil per day and 150 million cubic feet of gas per day.

### **TLP ENGINEERING/CONSTRUCTION DETAILS**

- Design, engineering and project management for the Brutus TLP system was provided by Shell's Deepwater Services, with support from various design consultants.
- Completely assembled, the TLP is 3,250 feet high, from seafloor to the crown block of the drilling rig.
  - The TLP is designed to simultaneously withstand hurricane-force waves, currents and winds.
- Hull:
  - The hull is comprised of four circular steel columns, 66.5 feet in diameter and 166 feet high. pontoons, which connect the columns, are 35.5 feet wide and 23 feet high with a rectangular cross section.
  - The hull weighs approximately 13,500 tons, with a total displacement of 54,700 tons.
  - Daewoo Heavy Industries Co. of South Korea built the hull. On December 7, 2000, the hull left Daewoo's Okpo fabrication yard, transported by Dockwise's Mighty Servant 3. The hull arrived at CSO Gulf Maritime's integration facilities near Ingleside, TX on January 30, 2001.
- Deck:
  - The installed deck has dimensions at the outside truss rows of 245 feet square and approximately 40 feet high. The deck is composed of five modules: process, drilling, power, quarters, and wellbay.

- The deck modules are an open truss frame design with a total structural steel weight of approximately 7,650 tons.
- The total topside weight is approximately 22,000 tons, including all process equipment and the drilling rig.
- J. Ray McDermott built the modules at its Amelia, LA fabrication yard. The modules arrived at the CSO Gulf Marine integration yard in January and February 2001.
- Integration:

The hull and deck were integrated at the CSO Gulf Marine Ingleside fabrication yard near Corpus Christi, TX.

The five deck modules were lifted into position on the hull using the specialized lifting device originally developed for the Mars TLP integration.
- Tendons:
  - There are 12 tendons, 3 per corner, each with a diameter of 32 inches and a wall thickness of 1.25 inches.
  - Each tendon is approximately 2,900 feet long. The total weight for the 12 tendons is approximately 7,500 tons.
  - The TLP foundation system is comprised of 12 piles, to which the tendons are attached.
  - The piles are 82 inches in diameter and 340 feet long, weighing approximately 245 tons each.
  - CSO Gulf Marine fabricated the piles and tendons at their Ingleside fabrication yard near Corpus Christi, TX.
- Drilling and Production Topsides:
  - There are 8 well slots, with the well layout on the seafloor arranged in a rectangular pattern.
  - The TLP supports a contract drilling rig, equipped with a surface BOP and high pressure drilling riser.
  - There are complete separation, dehydration and treatment facilities designed to process 110,000 barrels of oil and condensate per day, plus 150 million cubic feet of gas per day and 30,000 barrels of produced water per day.
  - The quarters module houses up to 94 people, and contains a control room and an emergency response center. In addition, temporary quarters modules are in place to allow for a maximum POB of 150 people during peak activity periods.

- Pipelines:

- A 20-inch diameter oil pipeline and 20-inch diameter natural gas pipeline will transport production.
- Installation of the steel catenary risers will occur immediately after TLP installation.
- J. Ray McDermott, Inc. installed the oil and gas pipelines beginning in the second quarter 2000 using the dynamically positioned Derrick Barge 16.

Subsea Tiebacks to Brutus:

- Production for two subsea tiebacks is processed at Brutus.
- The Glider prospect, operated by Shell (75%), has two producing wells that produce into Brutus for processing and sales. Glider is located in Green Canyon Block 248 and Newfield owns the remaining working interest.
- The J. Bellis prospect operated by LLOG (85%) with partner Davis (15%) in Green Canyon Block 157 has three wells that produce into Brutus for processing and sales.