Pioneer Natural Resources

Falcon & Harrier Development

August 28, 2003

J. D. Hall
Who is Pioneer Natural Resources??
Pioneer Natural Resources Company was formed through the 1997 merger of Parker & Parsley Petroleum Company and MESA Inc.
AUG 1997 Pioneer Formed
JUN 1998 Sable Discovery
MAR 1999 Aconcagua Discovery
FEB 2000 Devils Tower Discovery
OCT 2000 Camden Hills Added
APR 2001 Falcon Discovery
MAY 2001 Gabon Discovery
OCT 2001 Ozona Deep Discovery
DEC 2001 Spraberry Acquisition
APR 2002 West Panhandle/Falcon Acquisition
JUL 2002 Triton Discovery
SEP 2002 Tunisia Discovery
SEP 2002 Canyon Express First Production
JAN 2003 Harrier Discovery
MAR 2003 Falcon First Production
AUG 2003 Tomahawk Discovery
AUG 2003 Sable First Production
Pioneer and Falcon Background
Pioneer Deepwater Development Projects
History of Falcon

- Pioneer farmed in to Falcon at 45% - 1/2/01
- Mariner Spud Falcon Well – 3/16/01
- Mariner Project Sanction – 10/10/01
- Ordered Pipe and Umbilical – 11/01
- Pioneer project sanction – 3/25/02
- Pioneer acquired Interest to become operator at 75% - 3/28/02
- First Gas – March 15, 2003
- Pioneer acquired remaining interest from Mariner – 3/28/03
Project Execution
Falcon Hub – Subsea Infrastructure

Mustang Island A103
Water Depth: 3,450 feet
Tieback Distance: 32 miles

Falcon Flowline:
10.75” od x .625” wall
API 5L X-65 seamless pipe
Length: 52 Km
Falcon Nest – El Paso

• Processing Capacity
  • Contractual: 300 MMSCFD
  • Actual: 400 MMSCFD
• Dehydration
• No Compression
• 1200 BBL Methanol Storage
• Lots of Room for Expansion

• Risers
  • In Use
    • 1 – 10” (Flowline)
    • 1 – 18” (Export)
    • 1 – 16” J-Tube (Umbilical)
  • Future
    • 1 – 10” Riser (2nd 10” line)
    • 2 – 24” J-Tubes
    • 3 – 16” J-Tubes
    • 1 – 10” I-Tube
    • 4 – Standoffs
Equipment
Pioneer – Trees

• **Falcon Trees**
  – 4” x 2” – 10,000 psi Cameron Horizontal Trees
  – 6 Downhole Hydraulics
  – 1 Downhole Electrical
  – Tree Chemical Injection
  – 4” – 10,000 psi Cameron Crown Style Chokes
  – Kvaerner FSSL Control Pods

• **Harrier, Tomahawk & Raptor Trees**
  – 5” x 2” – 10,000 psi Cameron Horizontal Trees
  – 6 Downhole Hydraulics
  – 1 Downhole Electrical
  – Tree Chemical Injection
  – 4” – 10,000 psi Cameron Crown Style Chokes
  – Kvaerner FSSL Control Pods
Pioneer – Harrier Tree
Harrier Tree - Cameron
Falcon Trees - Cameron
Manifold - Cameron

• **Falcon Manifold**
  – 4 Slot Manifold w/ 2 Headers
  – 5” Inlet Valves
  – 9” Header Valves
  – Chemical Injection
  – Pigging Loop
  – 4 Pressure Transducers at each inlet
  – 2 Pressure Transducers per Header Outlet
  – Kvaerner FSSL Control Pod
  – Landed on a Pile Top (Jetted 36” Casing)
Manifold - Cameron
Falcon Manifold Deployment - Cameron
Umbilical - DUCO

APPLICATION: STATIC

OD = 123.7 mm ±3 mm [4.9" ±0.12"]

APPROXIMATE UMBILICAL LENGTH

53,092 m (174,186 ft) => 32.99 miles

6 – 1” SeaCat 10,000 psi tubes
2 – Chemical Injection
1 – Annulus Monitor
3 – Future

4 – ½” 19D 10,000 psi tubes
1 – LP Hydraulic Supply
1 – HP Hydraulic Supply
2 – Future

1 – 16mm² Quad Power Cable
1 – 6mm² Quad Signal Cable

- (6) 25.40mm [1.000"] ID
  Carbon Steel Tubes
  wt = 3.18mm [0.125"] - 10,000 psi WPD
  OD = 31.75mm [1.250”]
  0.76mm [0.030’’] Zinc coating
  OD = 33.27mm [1.312”]
  (1) 5.85mm [0.230’’] HDPE coating
  OD = 45.90mm [1.772”]

- (8) 25.40mm [1.000"] ID
  Zinc Sheathed, Nitronic 19D
  Duplex Stainless Steel Tubes
  wt = 1.65mm [0.065’’] - 10,000 psi WPD
  OD = 15.88mm [0.625”]
  0.76mm [0.030’’] Zinc coating
  OD = 17.40mm [0.685”]

- (1) 6mm² Quad, Screened
  OD = 18.10mm [0.713”]

- (1) 16mm² Quad, Screened
  OD = 26.00mm [1.025”]

- 5.30mm [0.209’’] Yellow HOPE
  Outer Sheath

- Fiber Reinforced Tape
  120% Coverage

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**Controls – Kvaerner FSSL**

- **FSSL Controls Package**
  - Control System Designed for Separate Power and Signal
  - Tree Control Pods
  - Tree Pressure/Temperature Transducers
  - Manifold Control Pod
  - Manifold Pressure Transducers
  - Master Control Station
  - HPU
  - Flowmeter Flying Leads
  - MASCOT Test Set
Controls - Kvaerner
Controls - Oceaneering

• **Oceaneering Controls Package**
  - Topside UTA (TUTA)
  - Subsea UTA (FUTA)
  - Hydraulic Flying Leads
  - Electrical Flying Leads
  - IWOCs Services
UTA & J-Plates – Oceaneering
Flow Meters – ISA Solartron

- **Dualstream MK1 Subsea Flow Metering System**
  - Venturi Style Meter
  - Triple Redundancy
  - Utilizes Read Matre P/T Transducers
  - CalSep Data Interpretation Software
Flow Meters – ISA Solartron
Connection System - Cameron

• Jumper Connection System
  – Cameron CVC Flowline Connection System
  – Cameron Jumper Design
  – Cameron Jumper Deployment Equipment (RENTAL)
Flowline Connection System – Cameron
Installation
Drilling & Completion – Noble Homer Ferrington
Flowline and Umbilical – CSO Deep Blue
Platform Installation - Heerema Hermod

Lifting Capacity
• Crane #1 = 5,000 tons (10 million pounds)
• Crane #2 = 4,000 tons (8 million pounds)

Ballast
• 35,000 gallons/minute
• 4,900 pounds/second
Jumpers, Manifold, and Spool Pieces – Cal Dive

Eclipse – Spool Pieces

Q-4000 – Jumper Installation

Intrepid – Manifold Installation
Operational Experience

• *Falcon Operational Performance*
  
  – **EB 579 #2** Total Down Time: 112.25 hrs
    • Down Time Due to Storms: 82 hrs

  – **EB 623#2** Total Down Time: 107.25 hrs
    • Down Time Due to Storms: 80 hrs
Challenges and Lessons Learned
Seafloor Terrain
Flowline Commissioning

Step 19  Connect nitrogen generator
Load pig

Legend
- Closed
- Open
- In-active
- Seawater
- Air
- Nitrogen
- Produced Gas

Rev. 0, Feb. 13, 2003
Startup and Commissioning
Falcon Start Up – Chain of Events

- Started up EB 623 #2
- Pressures tracked normally
- Experienced a pressure buildup on well end
- Shut well in
- Assumed we had stuck pigs
- In reality we had formed a hydrate
- Bled pipeline down
- Hydrate thawed and released
- Loaded the line with methanol
- Restarted well
- Recovered pigs
Falcon Start Up – The Pigs
Falcon Start Up – Seabed Profile

Falcon to MU A-103 seabed profile

Distance (miles)

Water depth (ft)

-4000
-3500
-3000
-2500
-2000
-1500
-1000
-500
0
500
1000
1500
2000
2500
3000
3500
4000

0 5 10 15 20 25 30 35
Forever We Build

Harrier

Tomahawk

Raptor (Cross our fingers)
PROPOSED HARRIER DEVELOPMENT

EXISTING FALCON DEVELOPMENT
EAST BREAKS 579 WATER DEPTH: 3450 feet

PROPOSED 10.75” FLOWLINE (32 MILES)

PROPOSED PLET

PROPOSED 10.75” HARRIER FLOWLINE (14.5 MILES)

PROPOSED ELECTRO-HYDRAULIC UMBILICAL (13.45 MILES)

PROPOSED PLET

METER

FLYING LEAD

PROPOSED PLET

PROPOSED WUTA-T

PROPOSED HARRIER DEVELOPMENT
EAST BREAKS 759 #1 (SURFACE LOCATION – EAST BREAKS 758)
WATER DEPTH: 4114 feet

PROPOSED 10.75” FLOWLINE

PROPOSED PLET

PROPOSED WUTA-F

PLAN AT FALCON MANIFOLD

CONCEPTUAL HARRIER DEVELOPMENT

FALCON PLATFORM
MUSTANG ISLAND A103
<table>
<thead>
<tr>
<th>Harrier Status</th>
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</thead>
<tbody>
<tr>
<td>• Major Equipment nearing completion</td>
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<tr>
<td>• Well Completed</td>
</tr>
<tr>
<td>• Pipe Delivered (8/19/03) – Siderca</td>
</tr>
<tr>
<td>• Umbilical Completed (SIT in progress) – KOP</td>
</tr>
<tr>
<td>• Umbilical Installation – Oceaneering (September)</td>
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<tr>
<td>• Pipeline Installation – Allseas (October/November)</td>
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<tr>
<td>• First Gas – Targeting end of year 2003 or early 2004</td>
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</tbody>
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PROJECT THEME SONG:

“I’LL BE HOME FOR CHRISTMAS”
Tomahawk and Raptor Status

• **Trees pre-ordered.**
  – Raptor Tree SIT is complete
  – Tomahawk Tree due in at the end of September
• **Complete Raptor in Mid September this year**
• **Complete Tomahawk in early October this year**
• **Raw Materials for umbilical already received - KOP**
• **Route survey complete**
• **Evaluating pipe bids**
• **Umbilical Installation – TBD**
• **Pipeline Installation – TBD**
Harrier, Tomahawk & Raptor - Umbilical

- 3 – 3/4” SuperDuplex 10K tubes
  - 1 – Chemical Injection
  - 1 – Annulus Monitor
  - 1 – Spare
- 3 – 1/2” SuperDuplex 10K tubes
  - 1 – LP Hydraulic Supply
  - 1 – HP Hydraulic Supply
  - 1 – Spare
- 1 – 16mm² Quad Power Cable
- 1 – 6mm² Quad Signal Cable
Falcon Corridor
Raptor / Tomahawk Potential SSTB's

Falcon

Tomahawk

Raptor

Harrier
Tomahawk and Raptor Status

Raptor & Tomahawk First Gas:

Targeting mid-2004