

MTS Meeting

March 25, 2004



Gulfstream
Natural Gas System

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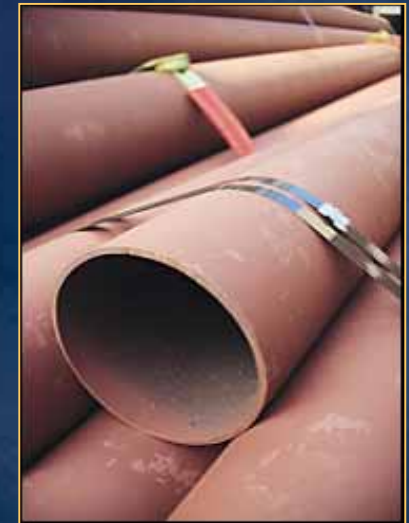
Gulfstream Offshore

Gulfstream Overview

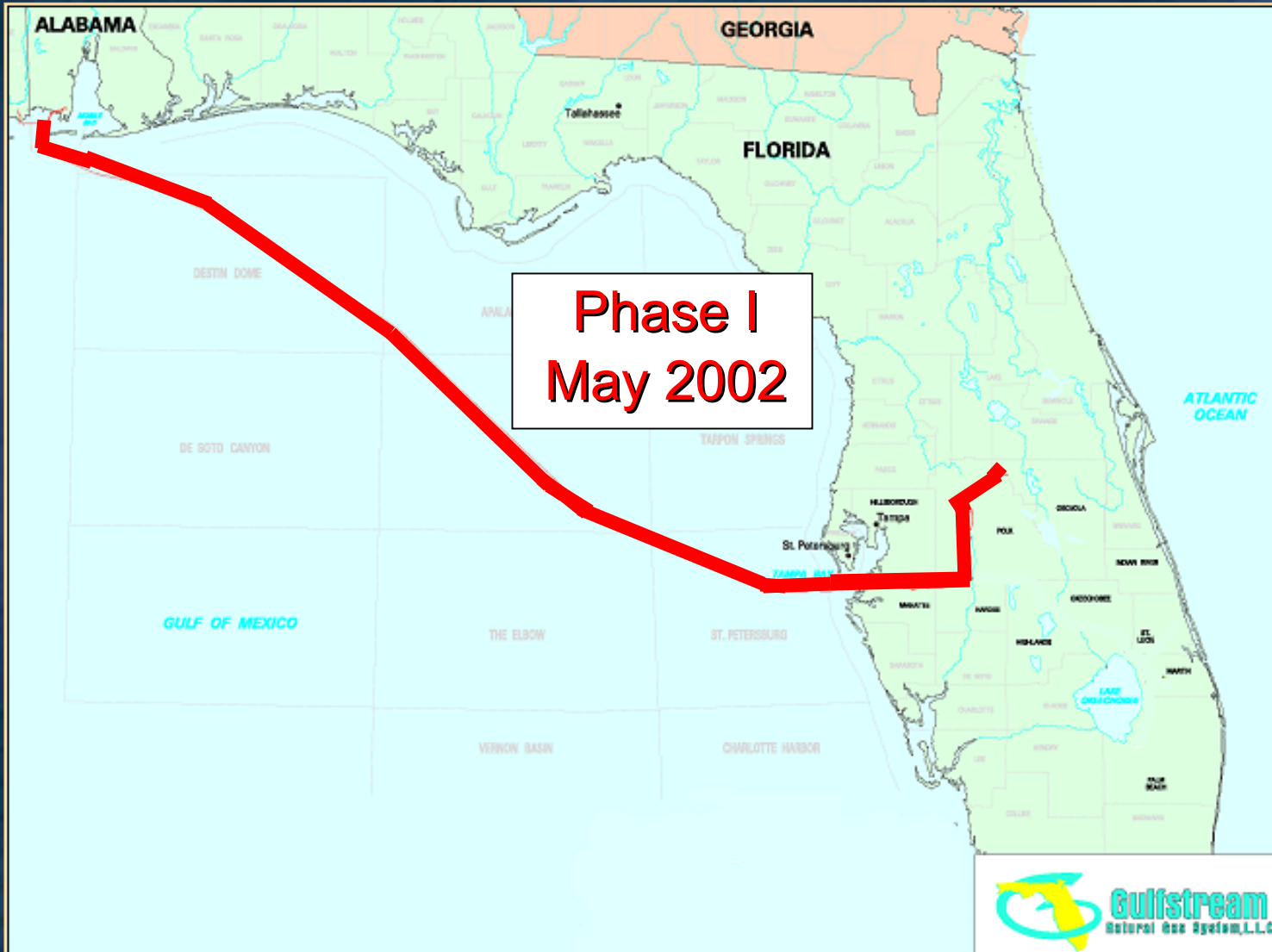


What is Gulfstream?

- 587-mile transmission gas pipeline
 - 437 miles of 36" offshore pipeline
 - 134 miles of onshore pipelines in FL
 - 16 miles in AL & MS
 - Compression & gas treatment in AL
- Placed into service May 2002
- Cost: \$1.468 billion
- Design capacity: 1.1 Bcf/d
 - Enough to create electricity for 4.5 million Florida homes
- Partnership between Williams & Duke Energy



Gulfstream Overview



Gulfstream Overview



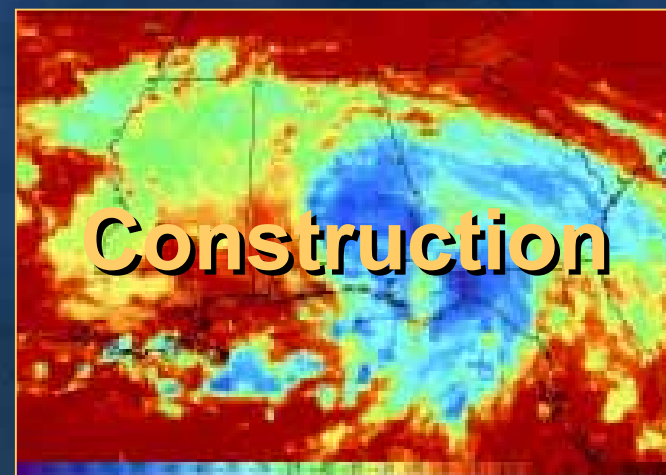
Gulfstream Overview



What made Gulfstream unique?

- First natural gas transmission pipeline built in the Gulf of Mexico
- Largest pipeline in the Gulf of Mexico
 - 420 miles of 36" OD, high pressure rating of 2180 psig MAOP
- Designed with no compression offshore
- First pipeline on east side of the Gulf of Mexico
- Florida's first natural gas transmission pipeline in 40 years
- Only offshore gas pipeline to make landfall in Florida
 - Strict dry gas specs ensure minimal quantity of liquids delivered
- Other technological breakthroughs during construction and commissioning

Challenges



Sunshine Skyway Bridge



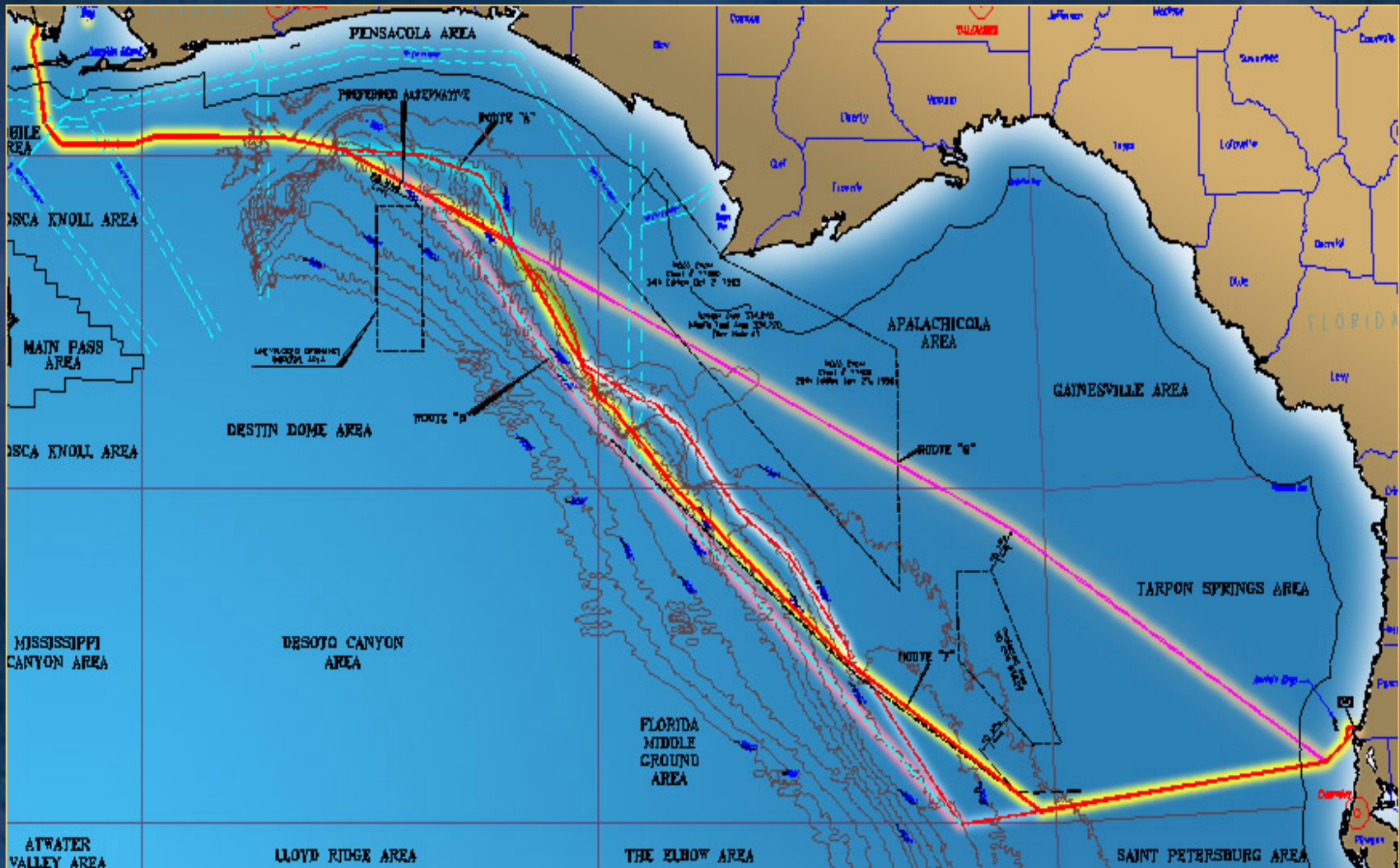
- Protecting steel plates: 72" ID half circle x 3" thick
- Distance: Continuous 300 feet on each side of the bridge
- Cover: 3 feet below bottom



Route Selection



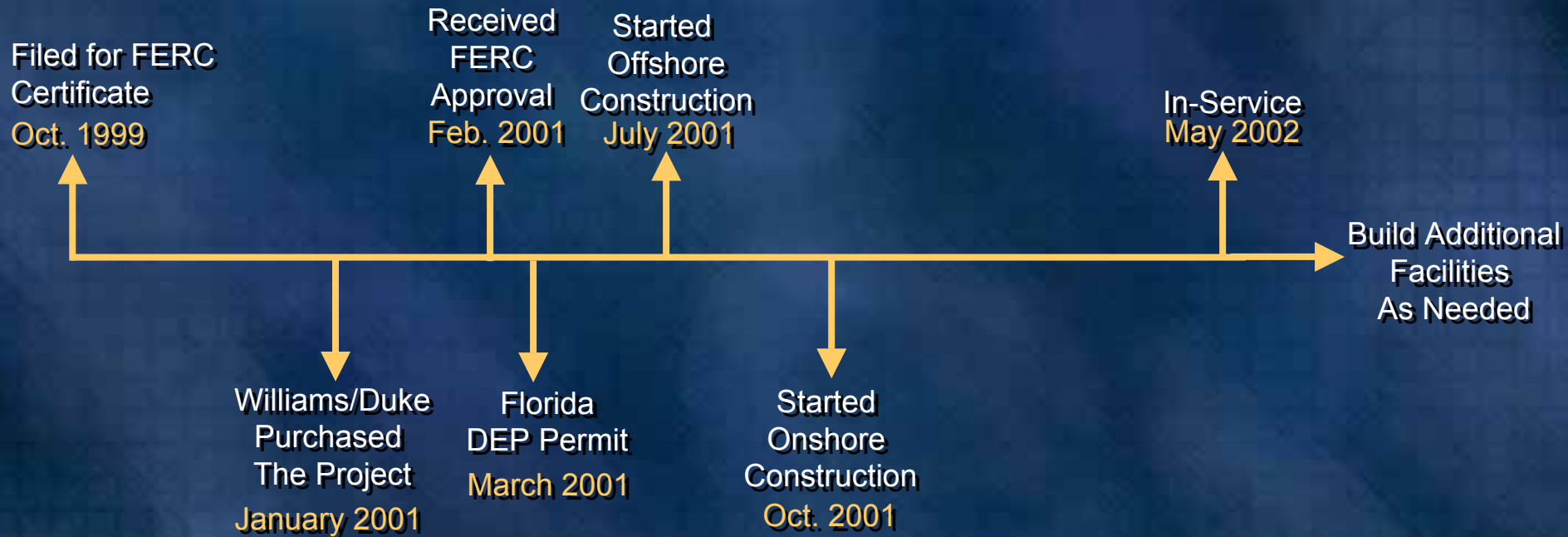
Route Selection



Schedule



Phase I Schedule



Significant Milestones

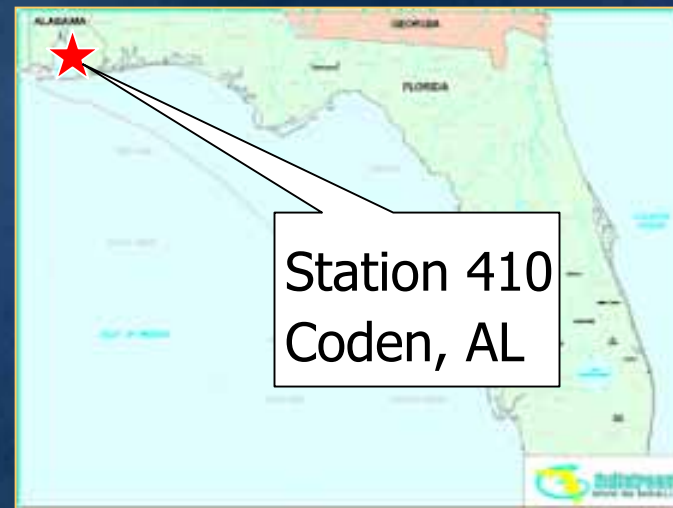
- Final EIS received in January 2001
- FERC certificate issued in February 2001
- Florida DEP permits received in March 2001
- Implementation plan filed in April 2001
- Alabama COE permit received in May 2001
- MMS permit received in June 2001

Onshore Construction



Station 410

- Harmony Corporation lead construction contractor
- Dual Train Mole Sieve Gas Dehydration
- Dual Train Propane Refrigeration Hydrocarbon Dew Pt. Control
- Rolls-Royce RB211 turbines
- Dresser Rand D10RS comp.
- 2 Operating, 1 Spare
- 119,100 ISO HP Installed



Onshore Construction



Station 410



Onshore Construction



Onshore pipelines

- 134 miles of 16", 24", 30" & 36" pipelines installed in 2001 & 2002.
- 4,000 feet installed per day
- MAOP 1480 psig
- 13 meter stations
- 10 HDDs



Offshore Construction



Construction Facts

- Started June 2001
- Stolt Offshore prime offshore contractor
- PCS lead design consultant
- Offshore pipe
 - 2180 psi design pressure
 - Mostly 36" X-70 pipe with 0.820 wall thickness
 - CWC designed for stability in 100-year storm with specified densities up to 205 pcf
 - Water depth up to 800'



Offshore Construction



Lay Barge 200

- Used in water depths greater than 50'
- Set a world record welding 274 double joints (548 single jts) in 24 hours
- 5 fully automated welding stations, 1 AUT and 2 field joint coating stations
- 550' long (1,000' w/stinger)
- 400 workers
- Lays 3-4 miles per day



Offshore Construction



Lay Barge 200



Offshore Construction



Derrick Lay Barge 801

- Used in intermediate water depths (20' to 50') in AL and in FL State waters
- Capable of laying 1 mile of pipe per day
- 7 work stations
- 1 AUT stall
- 351' long
- 233 workers



Offshore Construction



Spud Barge

- 130 workers
- Shallow water lay barge; Ms. Sound in Al. and Ms.
- Capable of laying 4,000' of pipe per day
- 7 work stations
- 1 AUT stall
- 500' long
- 4 spuds



Offshore Construction



Other Vessels:

- Saipem Castoro 10: jetting OCS and installations of WSSTI
- Horizon Pecos: jetting offshore Ala to WSSTI
- Stolt DLB 801: installation of offshore mainline valve
- Stolt DSV Hawk: installation of offshore mainline valve
- Saipem Far Sovereign: plowing in Florida
- 250 Jack-up: Pipeline flooding support at ESSTI
- 145 Jack-up: Installation of mainline valve in Tampa Bay, near fishing pier

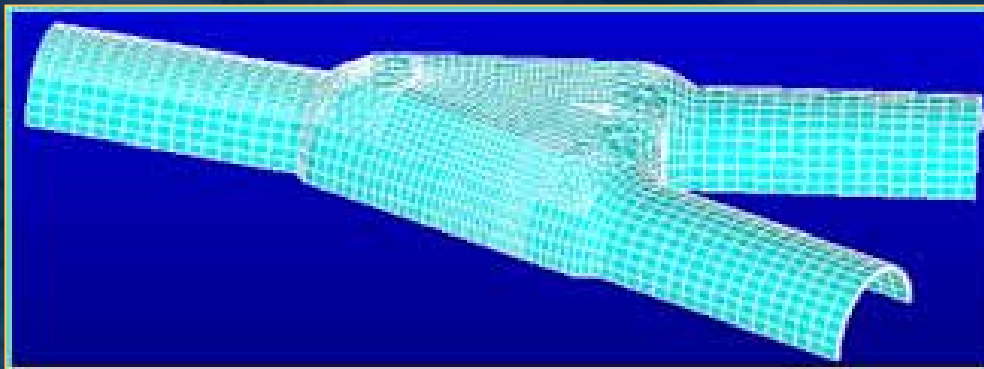


Offshore Design



36" ANSI 900 Wishbone Wye

- 36" X 36" X 36", 75 yield material
- Weight: 46,821 lbs (23.4 Tons)
- Overall shipping dimensions: 20.25' x 9.75'
- For future expansion options



Pipe Order



DSAW Pipe Order Summary

- Order placed -- 12/00
- First slab deliveries to Europe -- 1/01
- Pipe rolling started -- 2/01
- First shipment arrived in US -- 4/01
- 13 ships delivered pipe to AL/FL from Europe
- 119 barge loads of pipe delivered to AL/FL from Panama City, FL



Pipe Order



DSAW Pipe Order Summary

- Summary of pipe delivered in 2001
 - Total footage = 2,905,700'
 - Total est. pieces = 73,600
 - Net tons = 449,900 tons
- Summary of pipe delivered 2002
 - Total footage = 521,200'
 - Total est pieces = 13,200
 - Net tons = 37,800 tons



Pipe Coating



Summary

- Pipe coating suppliers included Dupont, Jotun, 3M, Lilly, BASF
- Powder supplied through 2003
 - FBE – 2,354 tons
 - Anti Slip – 270 tons
 - Abrasion Resistant – 106 tons
- Raw materials required
 - Iron ore – 250,000 MT
 - Cement – 70,000 MT
 - Reinforcing wire – 50 million sq. ft.
 - Plastic – 24 million sq. ft.

Pipe Coating Plants



Theodore, AL



Pipe Coating Plants



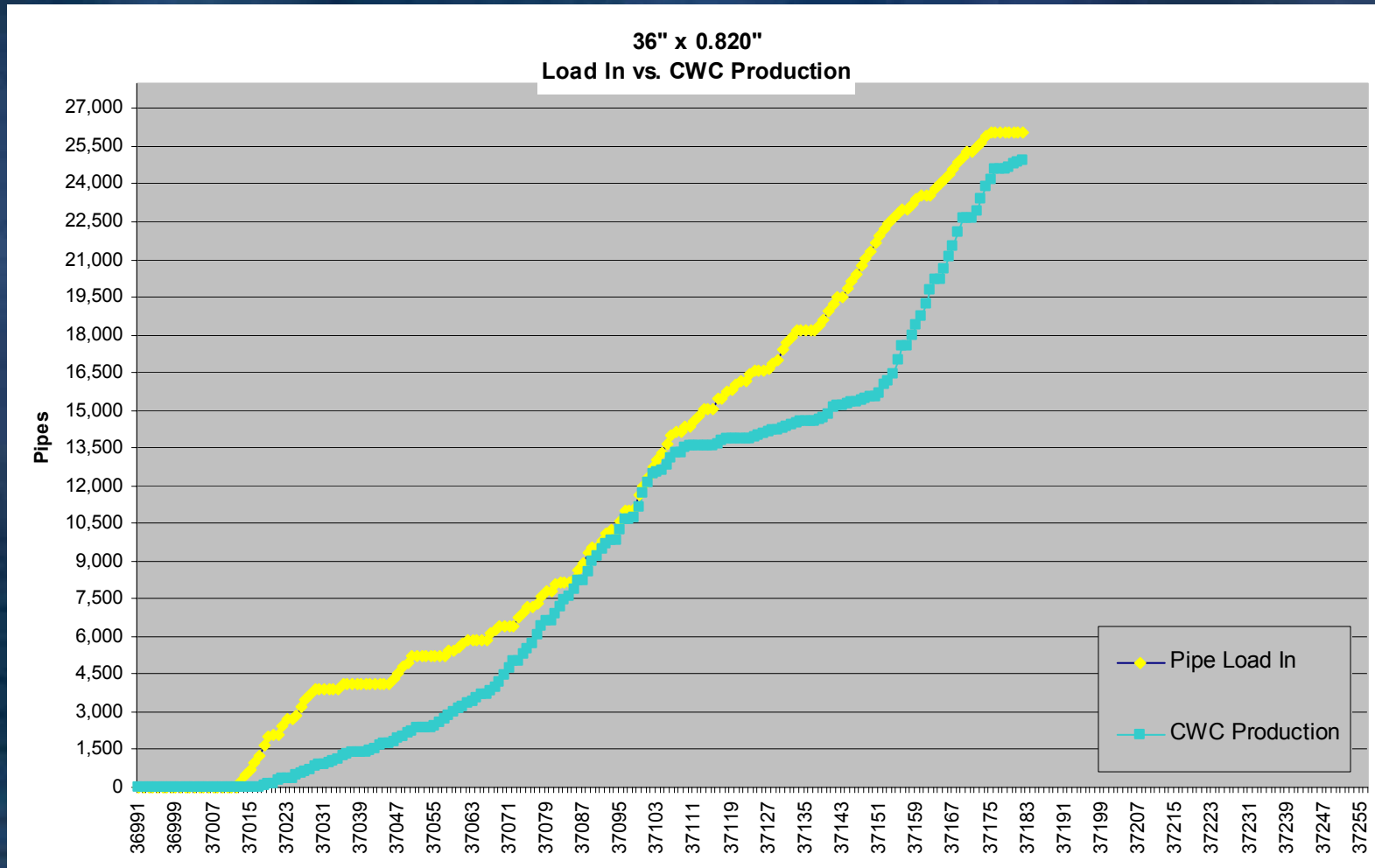
Port Manatee, FL



Pipe Delivery



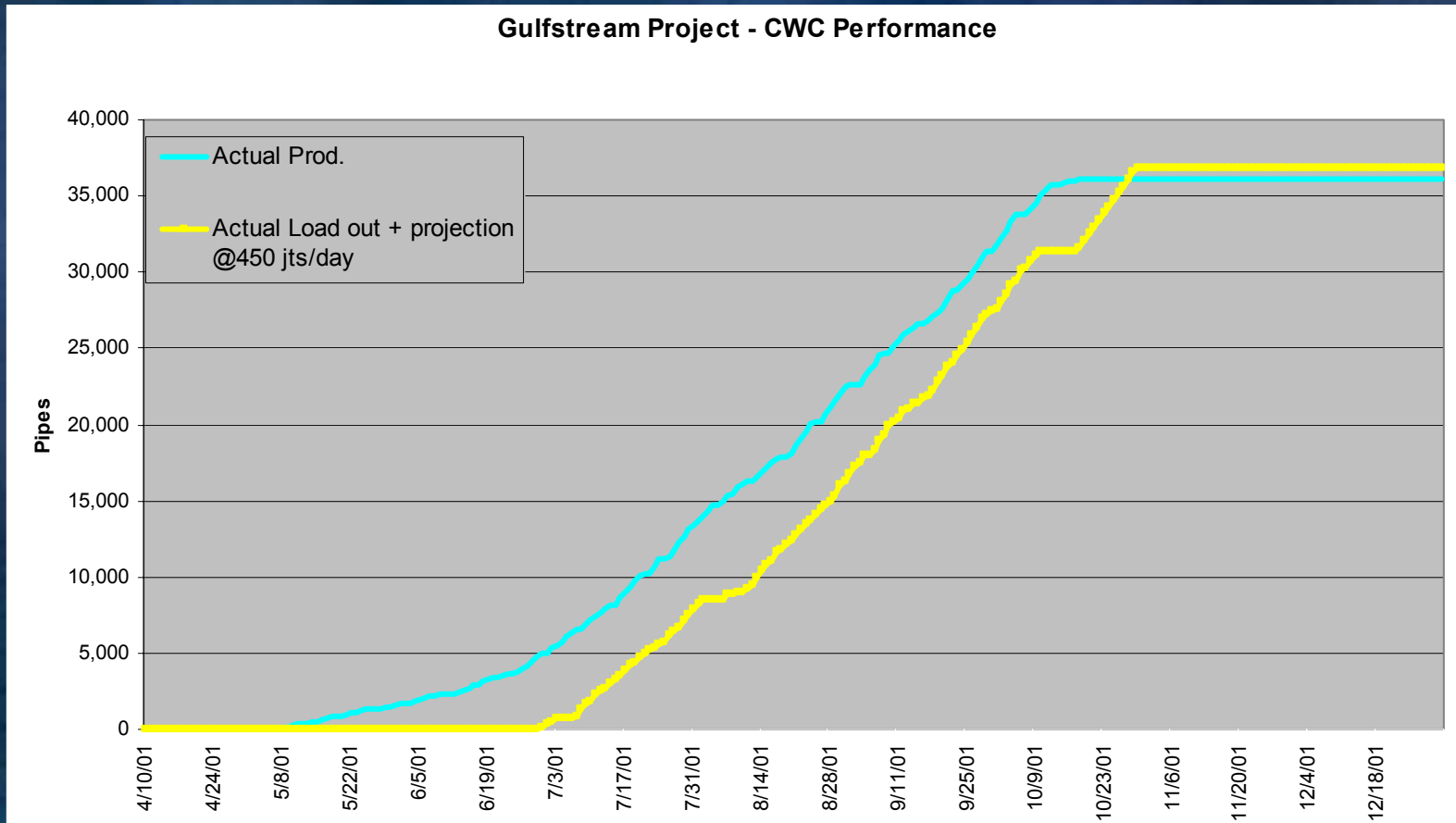
Load In vs CWC Production



Pipe Delivery



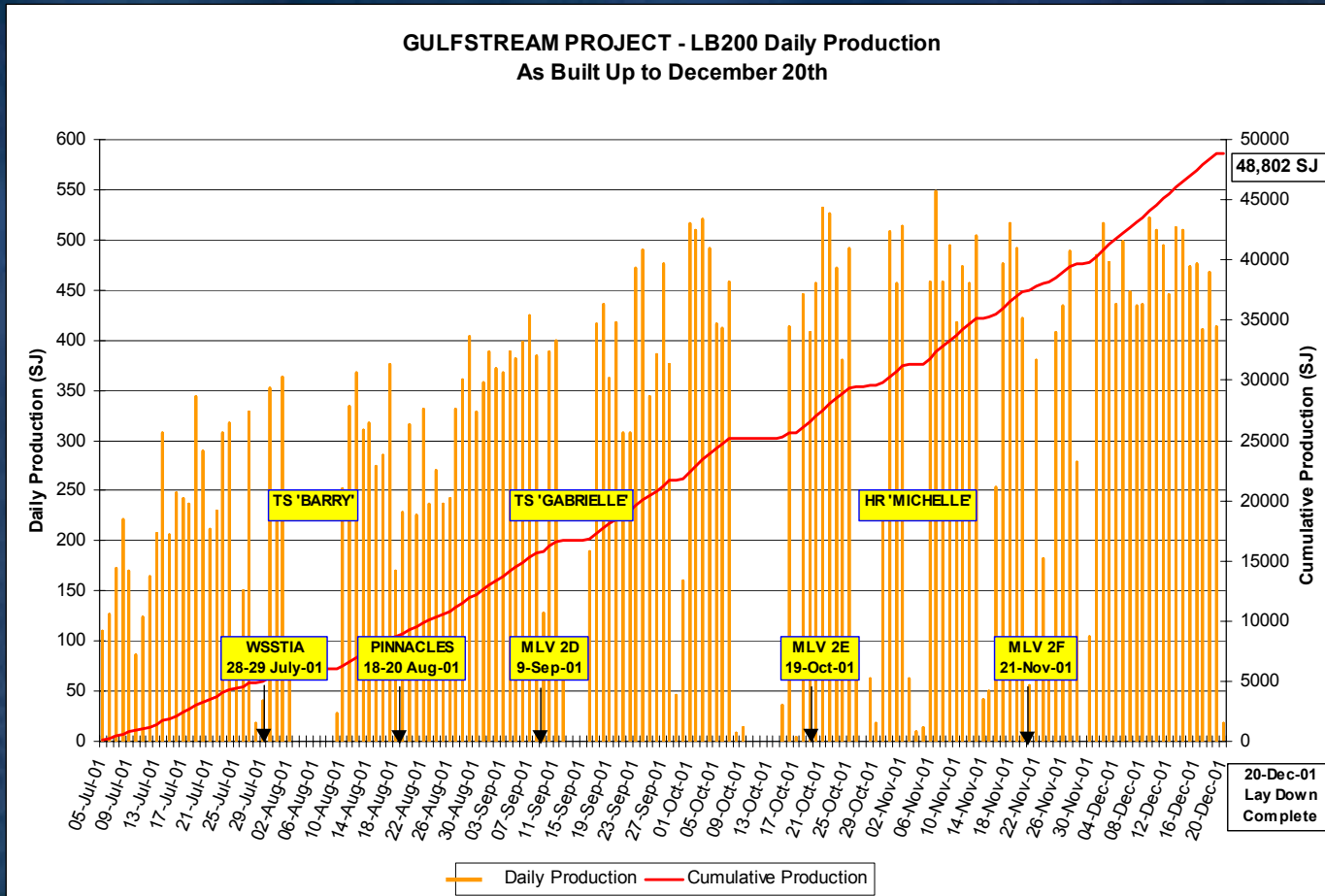
Load Out vs CWC Production



Laying Pipeline



LB-200 Daily Production



Commissioning



Preparing for service

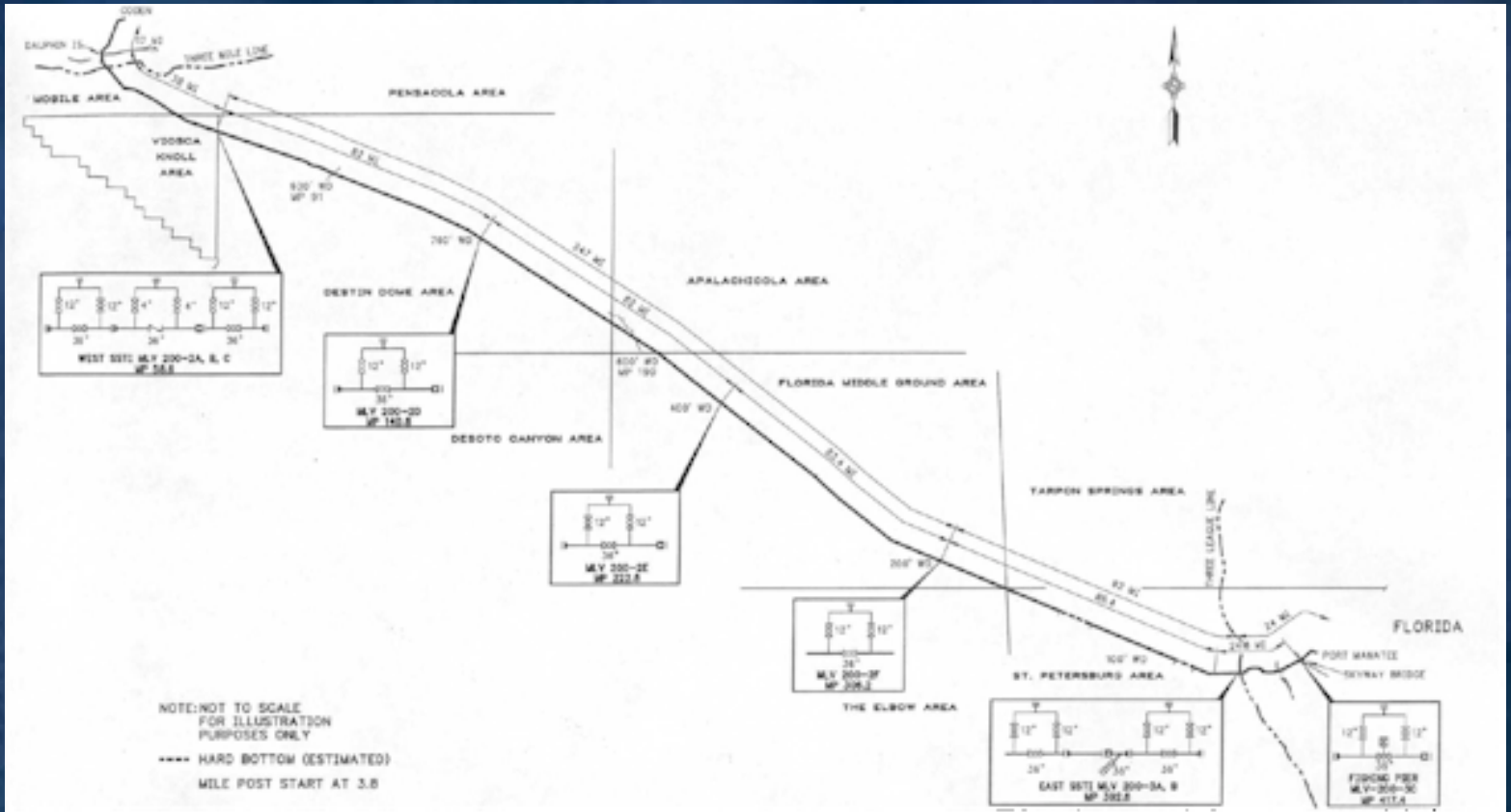
- Flooding the pipelines for hydrotest
- Hydrotesting the segments
- Dewatering the supply & mainline
- Drying the mainline
- Purging & commissioning the mainline



Largest Dewatering Spread



Valve Diagrammatic



Offshore Mitigation

Developed mitigation plan in conjunction with the Florida Department of Environmental Protection, the Florida Marine Research Institute, the U.S. Army Corps of Engineers, the Hillsborough County Environmental Protection Commission, the Minerals Management Service, and the National Marine Fisheries Service.

Federal Waters

- Added new limestone hard bottom
- 49.4 acres of mitigation
- 153 man-made reef modules
- 130,000 tons of limestone
- Monitoring up to 10 years



Offshore Mitigation

State Waters

- 19.74 acres of mitigation
- Accomplished using 100 20X24 shallow water reef habitat modules
- Required 5,000 tons of Florida limestone
- Required that divers physically remove and transplant soft and hard coral from the proposed pipe lay area



Environmental



Environmental Mitigation

Onshore

- Spoil Island (65 acres)
 - Created bird sanctuary w/ Audubon & Port
- Harbor Key (100 acres)
 - Exotic plant removal
- Lake Wales Site (398 acres)
 - Created and enhanced wetlands & uplands
 - Planted over 117,000 trees
- Manatee Site (181 acres)
 - Exotics removal, creating wetlands
 - Planted 3,500 trees & 500,000 plants



What's Next?



Phase II Extension

In May 2003 Gulfstream announced an agreement with Florida Power & Light to provide 350 MMcf/d for its Martin & Manatee plant expansions.

- 103 miles
- 30-inch diameter pipe
- 1 meter station
- Construction begin Spring 2004
- In service Winter 2004

