

SHOALING PREVENTION: AN ALTERNATIVE TO DREDGING

AAPA DREDGING FOCUS GROUP

Ponce, Puerto Rico

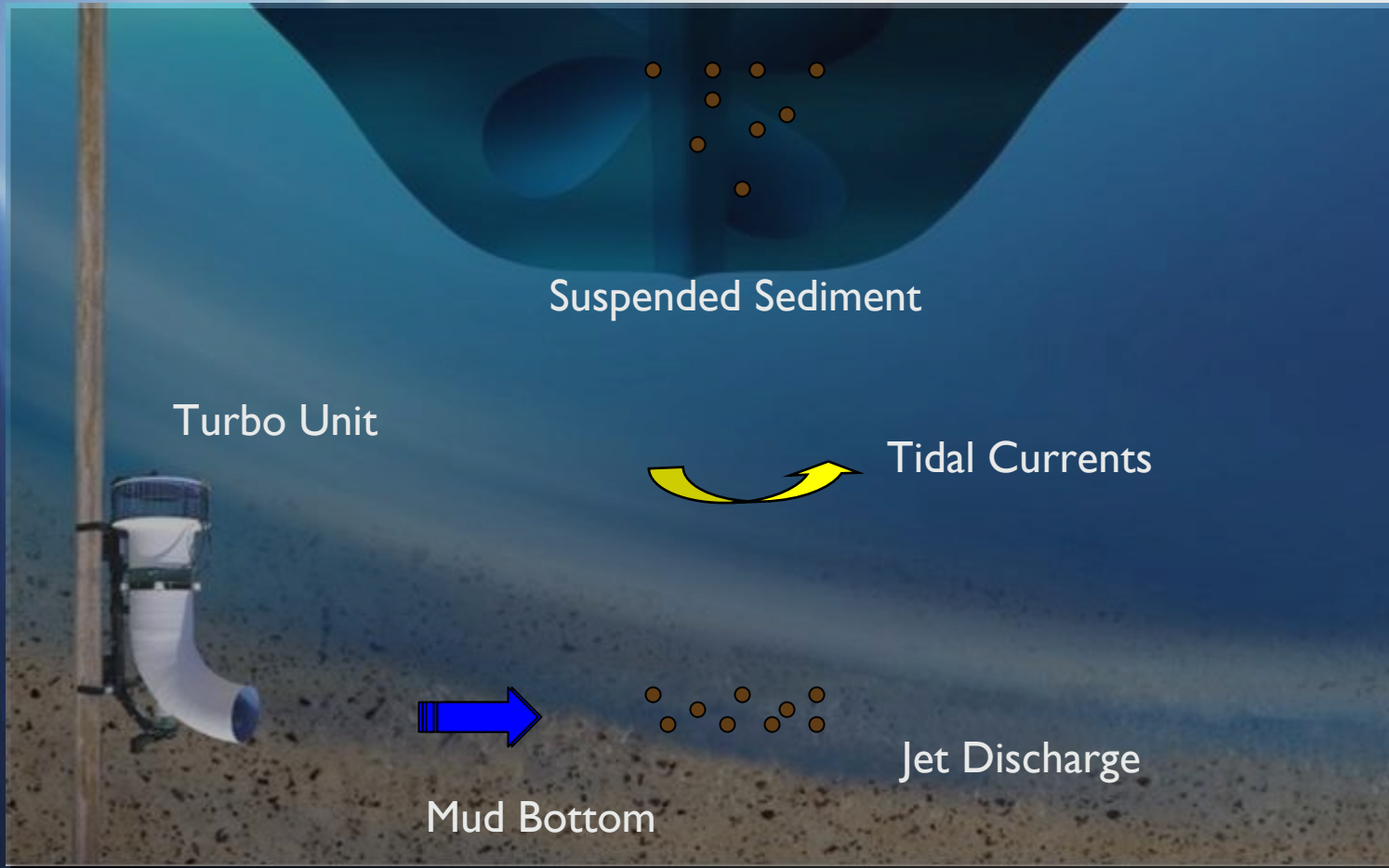
December 4, 2008

South Carolina State Ports Authority
SedCon Technologies, Inc.

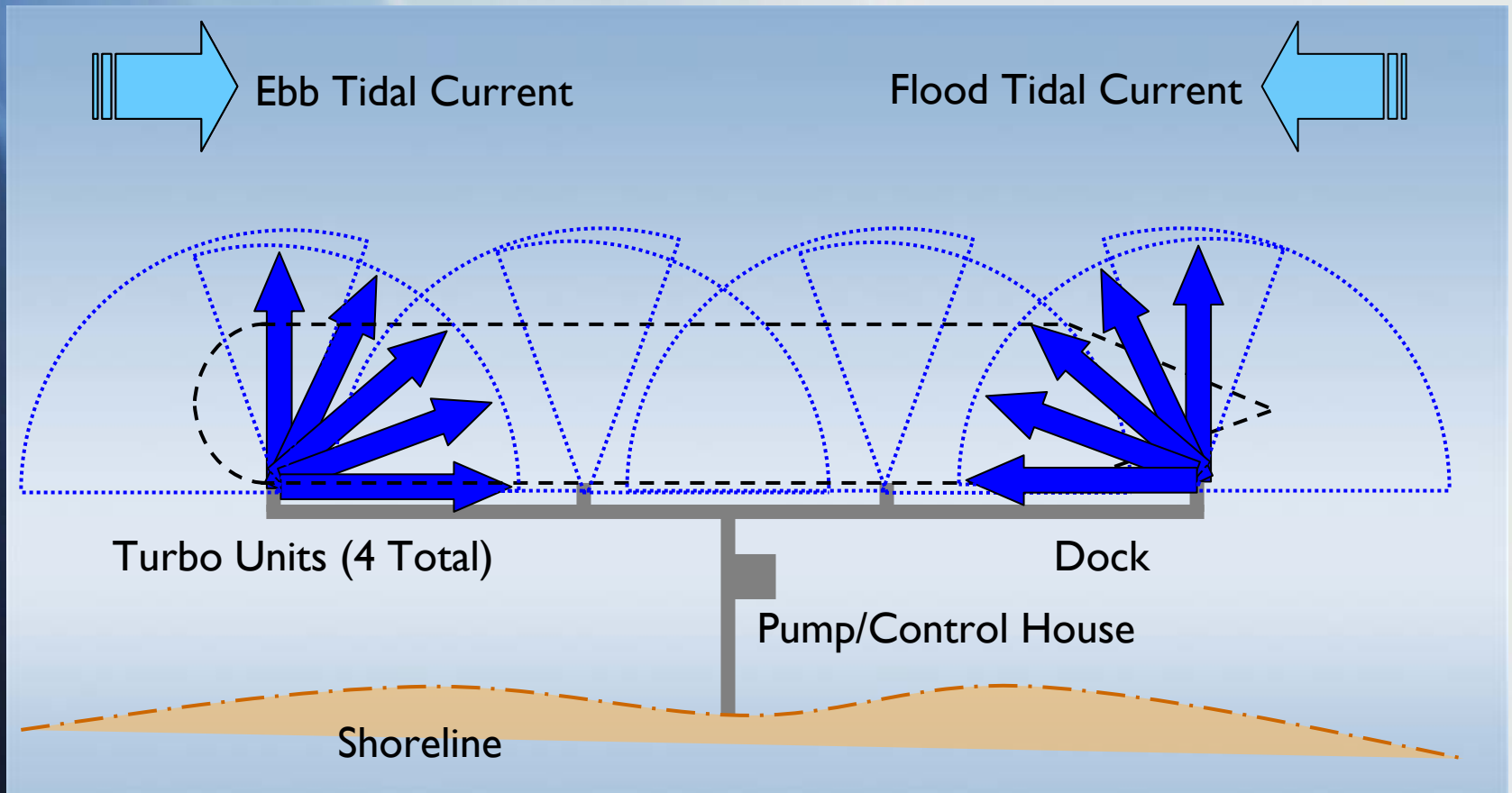
About SedCon Technologies Inc.

- Leading provider of shoaling prevention systems
- Based in California with regional service centers
- Sole source for patented SedCon[®] Turbo System

Shoaling Prevention Concept



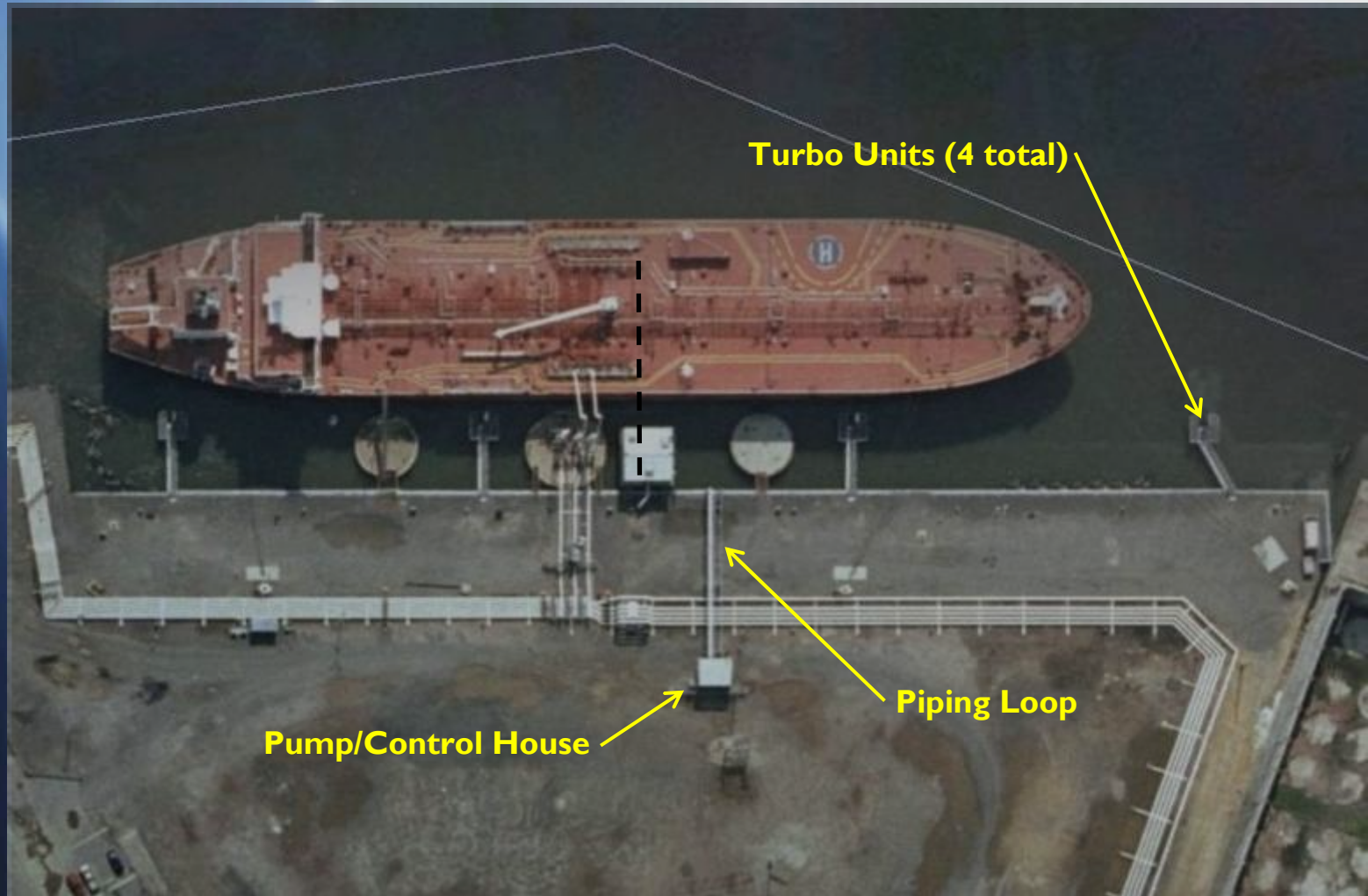
Synchronized with Tide



Benefits

- Full depth at all times
- Increased availability of berth
- Significant cost savings
- Dredging problems/risks eliminated

Typical System Layout



Turbo Unit Features

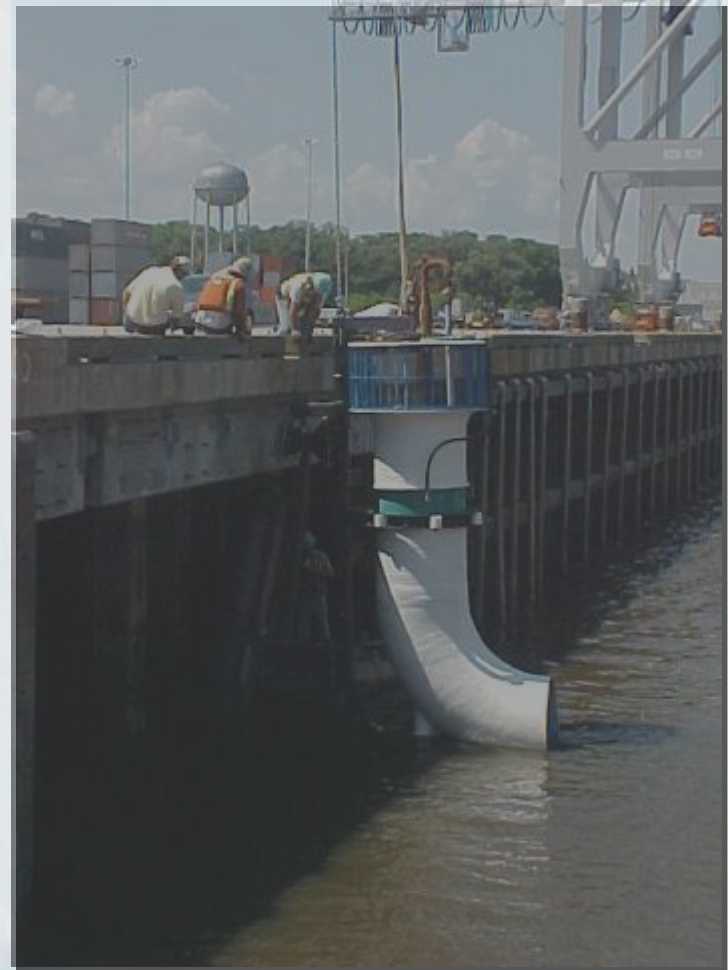
- Hydraulic motor & actuator
- Low maintenance design
- Zinc anode protection
- Anti-fouling coating



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Dock Deployment

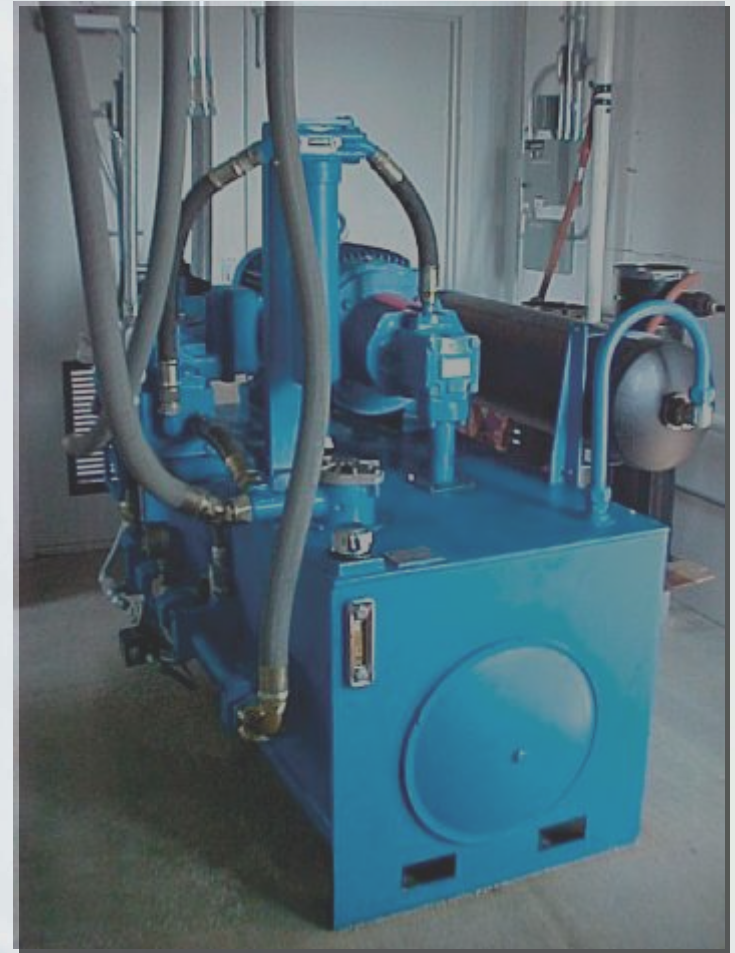
- Angled guide pile
- Mobile crane for raising & lowering
- Recessed valve boxes



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Hydraulic Power Source

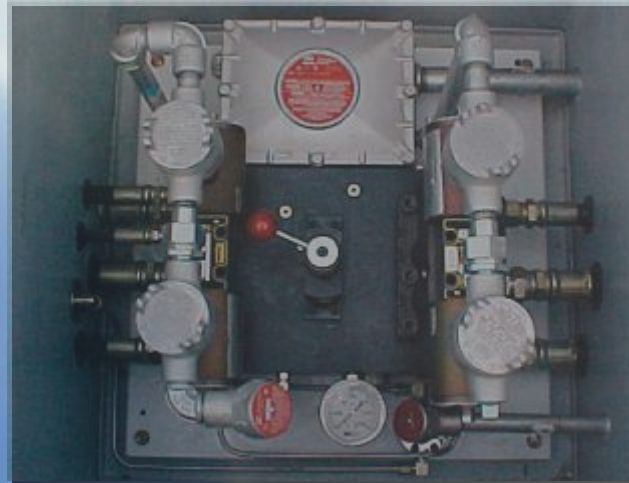
- Electric motor-driven pump
- Inline cooler & heater
- Biodegradable hydraulic fluid



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Computer Controls

- PC controller
- I/O interface
- Solenoid-actuated valves
- Multiple sensors



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Installation Sites

CITGO Petroleum Corp.



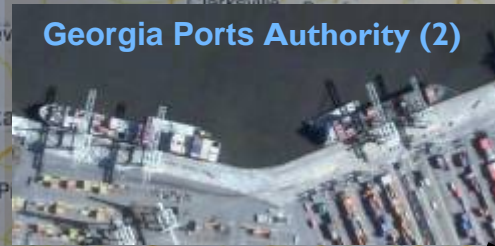
INVISTA



SC State Ports Authority (2)



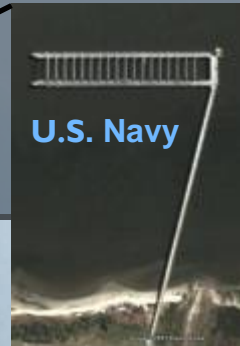
Georgia Ports Authority (2)



NuStar Asphalt Refinery



U.S. Navy



South Carolina State Ports Authority
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Typical Costs

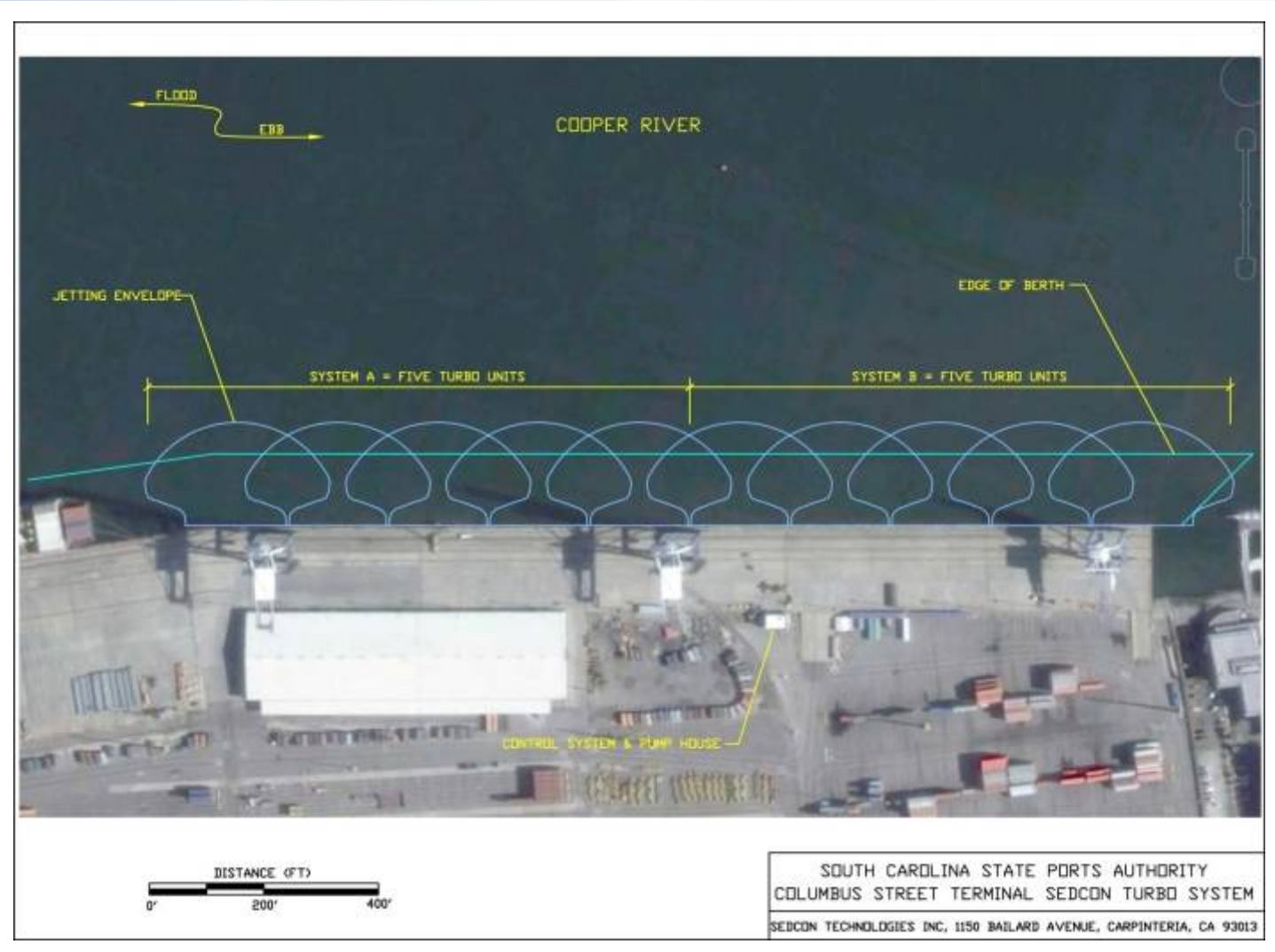
- Construction costs run about \$2,000 per foot
- O&M costs run about \$50 per foot per year

Regulatory Concerns

- Agitation dredging
- Water quality impacts
- Adjacent shoaling impacts
- Marine organism impacts

Independent monitoring studies show no significant adverse impacts

SCSPA Columbus Street Terminal



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Dual 125 hp Power Sources



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Ten 36-Inch Turbo Units



Guide shoe on H pile flange

Turbo Unit Detail



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Estimated/Actual Cost

	Estimated	Actual
Engineering	\$70,000	\$125,000
System Equipment	\$1,300,000	\$1,400,000
Construction	\$2,790,000	\$2,871,201
Testing	<u>\$40,000</u>	<u>\$40,000</u>
Total	\$4,200,000	\$4,436,201

Maintenance Costs

\$108,000 in 2007

\$147,000 in 2008

**Includes \$100,000 in 2007 and \$114,000 in 2008 for
maintenance service contract**

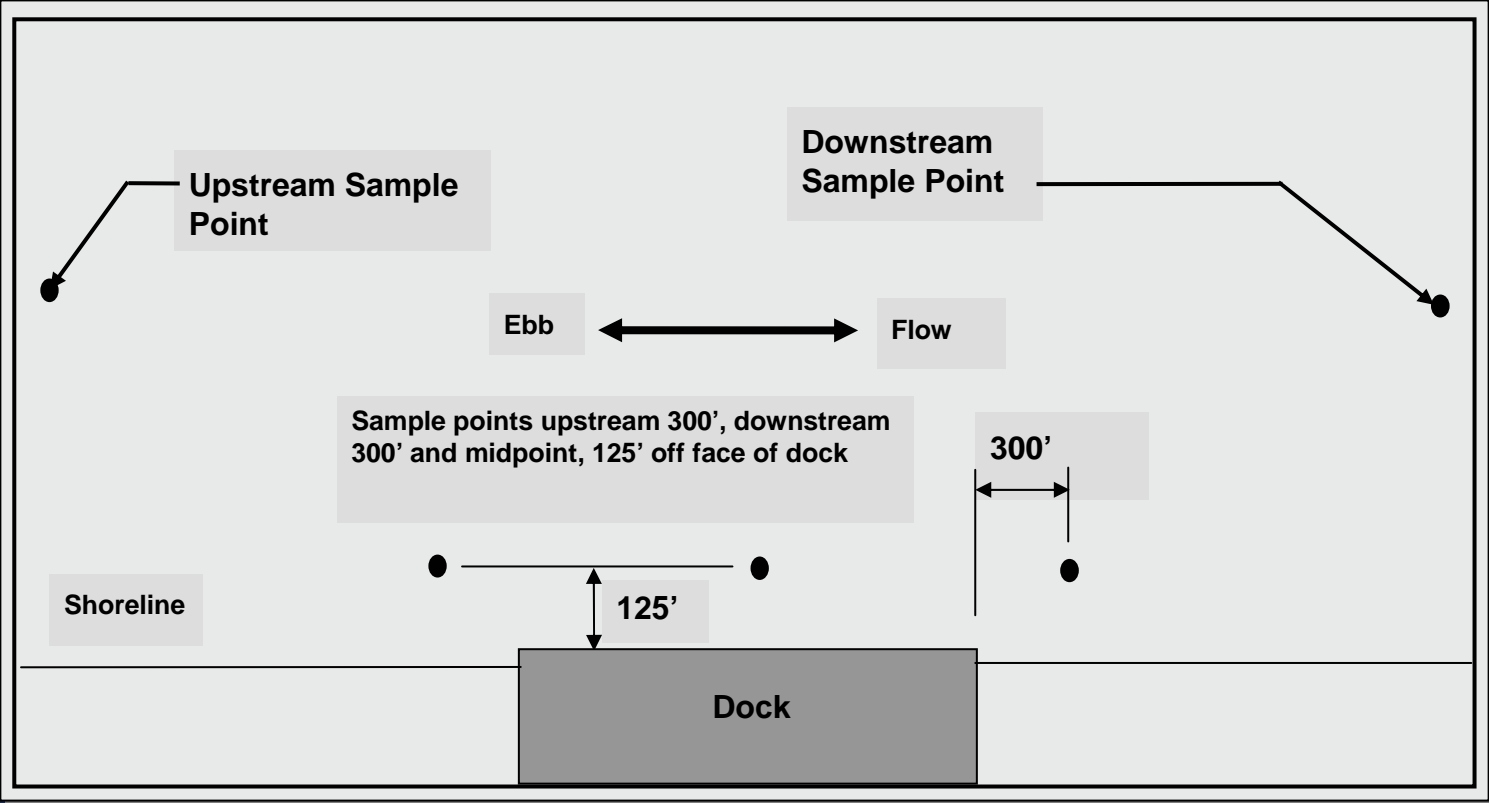
Federal Permitting

- Will increase Federal Channel Maintenance
- Will follow lead of State permit

State Permitting

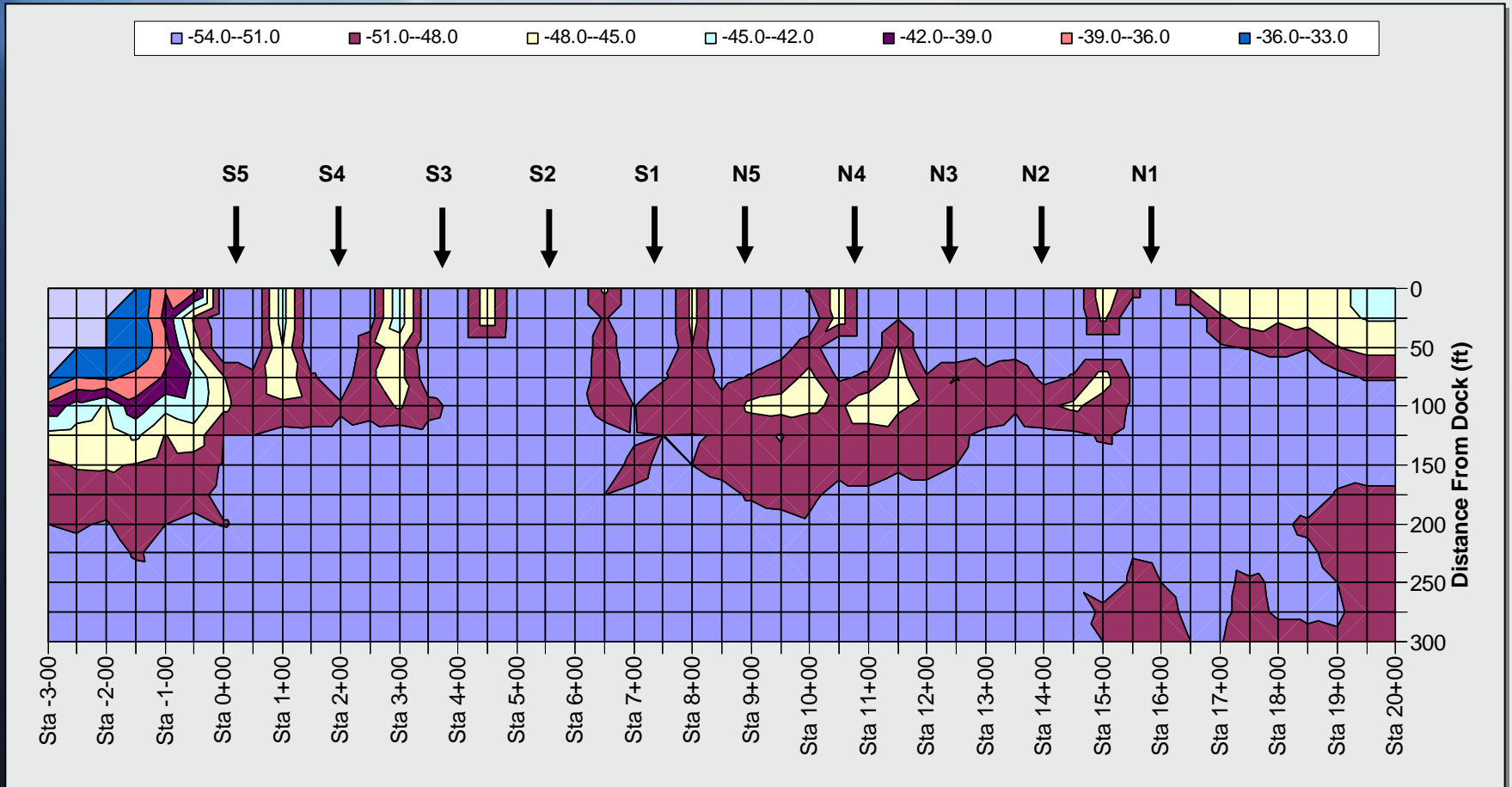
- Ultimate disposition of material
- Potential for scouring
- Impacts to water quality (DO, turbidity, TSS)
- Impacts to marine life

Monitoring Program



Soundings – Plan View

SC Ports Columbus Street Terminal
26 March 2007 Soundings



Soundings – 3D View

SC Ports Columbus Street Terminal
26 March 2007 Soundings

