

Independent Cost Estimate (ICE)

INDEPENDENT COST ESTIMATE SUMMARY FORM

Project Name/Number: Thomas Jefferson Drydock & Maintenance

Date of Estimate:

Description of Goods/Services:

Drydock and Repowering of vessel required to receive its Certification of Inspection to resume/continue service.

- New Procurement
- Contract Modification (Change Order)
- Exercise of Option

Method of Obtaining Estimate:

Attach additional documentation such as previous pricing, documentation, emails, internet screen shots, estimates on letterhead, etc.

- Published Price List (attach source and date)
- Historical Pricing (attach copy of documentation from previous PO/Contract)
- Comparable Purchases by Other Agencies (attach email correspondence)
- Engineering or Technical Estimate (attach)
- Independent Third-Party Estimate (attach)
- Other (specify) _____ attach documentation
- Pre-established pricing resulting from competition (Contract Modification only)

Through the method(s) stated above, it has been determined the estimated

total cost of the goods/services is \$ 2,224,464.00

The preceding independent cost estimate was prepared by:

Anitra Honore'

Name



Signature

#	ITEM NAME	ITEM DESCRIPTION	Responsible Party
General			
Reports		Provide daily report to LabMar representative. Provide weekly project schedule with major milestone and delivery dates.	S/Y
Gas Free and Clean		<p>Transfer all fuel from the vessel to holding tanks, and clean and gas free the vessel's Four (4) fuel oil tanks and engine room bilges, and return all fuel and oils to their respective tanks upon completion of work. Gas free and clean 10 hydraulic ram surps & rudder room compartment</p> <p>Diesel storage cost</p> <p>fuel oil tanks</p> <p>Cargo tank 1 port: 6513 gal. max capacity</p> <p>Cargo tank 1 stbd: 6513 gal. max capacity</p> <p>Day tank 1 port: 1451 gal. max capacity</p> <p>Day tank 1 stbd: 1451 gal. max capacity</p> <p>Drain all ballast & void tanks and inspect coatings.</p> <p>Forepeak</p> <p>#1 P/S void</p> <p>#3 aft void (steering gear)</p> <p>Aftpeak</p> <p>Drain potable water tanks and pressure wash inside tank. Repair coatings as necessary.</p> <p>capacity 1028 gal</p>	S/Y
Gas Free Certificate		Provide a Marine Chemist's Certificate including Safe for Workers and Safe for Hot Work Whole vessel	S/Y
Competent Person		Provide the services of a competent person to maintain a daily log as required for a marine chemist gas free certificate	S/Y
Vessel Access		Provide service for access to and from vessel while dockside and/or in dry dock	S/Y
Tug Service		Provide tug service to shift vessel within contractor's facility, and to shift vessel on dock as necessary to complete under water work.	S/Y
CO2 System		Shipyard to disconnect and lock out CO2 system. Reconnect upon departure of Shipyard.	S/Y
Shore Power		3 rd party vendor to certify CO2 system, replace hoses as necessary.	S/Y
Crane Service		Provide shore power to vessel. Hook up and disconnect shore power to vessel while on dry dock or at wet berth.	S/Y
		Provide Crane service, forklift service and rigging service for the project duration.	S/Y

Blue drum disposal	Provide blue drums as require for Hazardous material disposal	S/Y
Trash Disposal	Provide a 5-yard trash tub for material disposal as required.	S/Y
Hull & Underwater Work		
Dry Dock	Dry Dock vessel, hold on dock until completion of all underwater work (maintain minimum 3-foot clearance under hull) then undock. Provide shore power to vessel at all times whether on dock or not.	S/Y
USCG 5-year drydock / internal structure examination	Survey under water portions of the vessel and assist in inspection of all tanks and spaces and support USCG inspection. Coordinate USCG inspection, notifying customer Rep in advance of inspection dates and times.	S/Y
Propeller Surveys	Survey propellers, including dye check. Check propeller pitch, blade width, blade thickness and diameter, providing a written report for each propeller to customer Rep. As Required: Provide labor to grind and weld bad/heat crack areas. Upon completion provide labor to balance wheels and polish all blades: Provide final Survey to customer Rep.	S/Y
Propeller Blue Fit	Provide labor to check the blue fit of the Port and Starboard propellers to their respective shafts. Provide all written findings to customer Rep.	S/Y
Tail Shafts Removal and Reinstallation	Uncouple and rig out port and starboard tail shafts from vessel. Dray to machine shop for survey/repair. Reinstall after completion of survey and/or any repairs.	S/Y
Tail Shaft Repairs	Clean main body of the Port and Stbd tail shafts. Repair worn NCB liner on both shafts. Perform NTD (dye pin) to identify any cracks. Repair as required. Provide full survey of the Port and Stbd tail shafts, wear down, run out, and check for straightness. Report all finding to customer Rep.	S/Y
Tail Shaft Couplings	Provide labor to rig Port and Stbd coupling out of vessel and dray to machine shop for survey/repairs. Rig back into vessel upon completion of repairs. Check for trueness/runout of the coupling face and boss. Provide all written findings to customer Rep.	S/Y
Blue Fit Shaft Couplings	Provide labor to check the bluefit of the port and Stbd tail shaft couplings to their respective shaft. Report all written findings to customer Rep.	S/Y
Kort Nozzle	Buff and clean stainless inner liner of P/S Kort nozzles. Repair as necessary	S/Y
Cutlass Bearings	Renew all shaft tube & strut tube cutlass bearings. Johnson Duramax code "Gland", qty 4 reqd	S/Y
Shaft seal/stern tube Survey	Renew p/s propulsion shaft seals on stern tube. Provide a written report to customer Rep.	S/Y
Tight wire	Provide labor to manufacture, fit and weld tight wire bracket to stern of vessel on both port and Stbd side to run a taught wire to check the alignment of the of the underwater gear. Report all written findings to customer Rep.	S/Y

Steering Rudders Removal and Reinstallation	Remove p/s steering rudder from vessel, reinstall rudders after survey and/or repairs are completed.	S/Y
Steering System	Remove and clean all rudder linkage pins and bushings, tiller, quadrant, rams and jockey bar, survey and/or mic all pins, rudder trunks, bushings and rudder stocks, and provide a written report of findings to customer Rep. Install new grease fittings as required	S/Y
Steering Rudder packing	Provide labor to install p/s rudder shaft seals and packing. Provide all necessary materials. Renew port / Stbd side Thordon bearings and bushings. Renew gaskets & bolts on hatch.	S/Y
Flanking Rudders Removal and reinstallation	Remove p/s flanking rudder from vessel, reinstall rudders after survey and/or repairs are completed.	S/Y
Flanking rudder packing	Provide labor to install flanking rudder shaft seals and packing. Renew Thordon bearings & bushings. Provide all necessary materials. Renew gaskets & bolts on hatch	S/Y
Rudder Feedback	Replace all rudder (steering & flanking) feed back potentiometers & linkages	S/Y
Audio Gauging	Perform ultrasonic testing readings of the hull, voids, fuel tanks and in locations specified by USCG inspectors, or sufficient locations to provide analysis of the vessel hull plating condition, based on 500 shots and provide a written report of findings to customer Rep. Cost per shot for any additional shot required: () to be used in change order.	S/Y
Steel Work	Replace miscellaneous steel as directed by USCG or as a result of audio gauging or as determined by customer Rep, based on 1,000 pounds. Provide cost per pound for any additional steel work in excess of 1,000 pounds: () to be used in change order. Item cost and unit cost per pound includes all type, shape or form of steel, and all associated work to remove existing steel, prepare surface, and to restore surfaces and/or coatings per surrounding areas after installation of the new steel. Repair crew room bulkhead	S/Y
Anodes	Replace all anodes	S/Y
Manholes	Remove and clean 22 manhole covers on main deck, provide new gaskets, bolts as required for multi bolt manhole Remove and replace all tank sounding plugs with new brass plugs	S/Y
Air Testing	Air test all spaces to the satisfaction of the USCG inspectors and provide a written report of findings to customer Rep. Ensure that all vents are clear and venting properly.	S/Y
Pumps & Piping		

Vents/screens	Provide labor to clean, inspect and check for proper operation on all vent/ ball checks around the vessel. 12 @ 3" 1 @ 4"	S/Y
Reach Rods	Fire up, grease and prove proper operation of all reach rods, fuel shut-off valves, and other valves remote operations and provide a written report of findings to customer Rep. Port / Stbd Cargo Crossover valve Port / Stbd generator day tank Bow Thruster day tank Port / Stbd Main Eng Day Tank	S/Y
Jacket water/Keel cooler valves	Remove, disassemble, recondition, or replace keel cooler isolation valves for: Port and Stbd main engines, Port and Stbd service generator engines, bow thruster. Open, inspect and clean all valves. Reinstall all valves, greasing valve stems and other fittings as needed. Prove satisfactory operation. Port Main Engine 2.5" gate valve, qty 2 Stbd Main Engine 2.5" gate valve, qty 2 Port Generator Engine 3" gate valve, qty 2 Stbd Generator Engine 3" gate valve, qty 2 Bow Thruster Engine 3" gate valve, qty 2	S/Y
Fire Main System	Remove car deck overhead sprinkler valves, flush system, renew overhead fire sprinkler valves. Qty 48 x 1/2" spray nozzles Replace 4 x 2" & 1 x 2.5" overhead sprinkler valves with OFE valves Open, inspect and clean all fire main valves and fire hose valves. Open, inspect and clean all strainers. Qty 7 fire hose stations	S/Y
Fire Pumps	Open and rebuild fire pump 1 - Goulds (Marlow) 3P13EL 3x3 model M3P3A2FRMA0	power spec
Valves/ and strainers	Remove, disassemble, recondition, or replace the following: Sea suction & discharge valves and check valves. Overboard discharge qty 3 @ 3" Sea chest valves qty 2 @ 5" Open, inspect and clean all sea chest strainers. Sea Strainer qty 3 @ 5" Fuel discharge valves on main deck. Fuel fill qty 1 @ 4" gate valve Waste oil discharge valves on main deck. Waste oil qty 1 @ 2" gate valve Reassemble and reinstall all valves and strainers, greasing valve stems and other fittings as needed. Prove satisfactory operation.	S/Y
Sea Chest Covers	Remove sea chest screens from the hull for inspection and cleaning of the sea chests, reinstall screens Provide a written report of findings to customer representative.	S/Y

	sea chest vents	Ensure sea chest vents are clear and venting properly.	S/Y
	Bilge Pumps & bilge piping	Open and inspect bilge pump 1 & 2, overhaul as necessary. Bilge #1 - Ingersoll Dresser 3x2x1FD814 Bilge #2 - Aurora 344A 3x2.5x9 Open, inspect and clean all bilge suction valves and bilge discharge valves. Open, inspect and clean all strainers. Test bilge system for USCG	S/Y
	Piping	misc. piping repairs repair leaking fuel line below stbd main day tank	S/Y
	Deck Drains		
	Grey Water		
	Vessel Sewage System	Open, inspect and clean the vessel's Marine Sanitation Device. Seahorse Model SMSD 200 Ream out/snake/clean sanitary piping from all three of the vessel toilets, sinks, and deck drains to msd. Clean out all sewage vent lines including msd vent line. Inspect and replace toilet wax rings as necessary Replace approx. 10' of 3" sewage vent piping Peplace all p traps below toilets - qty 3	S/Y
	Rudder room piping	Repair grease line on port rudder upper arm	S/Y
Hydraulic & Mechanical work			
	Steering and flanking hydraulic system	Drain, clean and flush the vessel steering/flanking pump oil sump and hydraulic lines. Replace all hydraulic hoses & filters Add equalizing line on steering & flanking oil tanks After restoring steering oil to vessel, operate and test for leaks and proper operation. Capacity 120 gal of Mobil SHC Aware 46 Steering Rudder HPU system Capacity 60 gal of Mobil SHC Aware 46 Flanking Rudder HPU system	hydratforce
	Steering & Flanking Rudder Hydraulic Rams	Remove all Steering and Flanking hydraulic cylinders and have all rams inspected, cleaned and overhauled, replace seals with new ones of appropriate material. System currently utilizes environmentally acceptable hydraulic oil. Renew hydraulic hoses with double braid hose and install new directional valves. Reinstall all cylinders. Test system for leaks and proper operation.	S/Y

FWD Boarding Apron hydraulic piping.	Survey all hydraulic piping. Inspect and renew all hydraulic hoses on main deck.	hydratorce
FWD Boarding Aprons Hydraulic System	Remove all apron hydraulic cylinders and have air rams inspected, cleaned and overhauled, replace seals and new ones or appropriate instructor system. Renew all hydraulic isolation valves. Renew hydraulic hoses with double braid hose and install new directional valves. Reinstall all cylinders. Test system for leaks and proper operation.	S/Y
FWD vehicle deck aprons	Remove all apron hinge pins and hydraulic ram connection pins. Clean, inspect and mic all pins and clevis/ pad eyes. Clean all grease passages, install new grease fittings, free up apron hinge flap, install new grease fittings. Provide survey report to customer representative. Required repairs will be negotiated as a change order.	S/Y
FWD vehicle deck apron covers	Remove all apron ram hatches, renew gaskets, retap bolt hole and provide and install new bolts.	S/Y
Apron HPU	Drain, clean and flush the apron HPU. Replace all hydraulic hoses & filters Capacity 162 gal of Mobil SHC Aware 46	hydratorce
Upper passenger deck doors	Secure upper doors shut by welding clips	S/Y
Air Compressors and Receivers	Open for USCG access and inspection. Replace all leaking valves. Replace pressure relief valves including hydrostatic testing of air receivers and provide a written report of findings to customer representative.	S/Y
Propulsion Mechanical & Thrusters		
Keel Cooler Cleaning, Testing and Reinstallation	Pressure wash and scrape clean. Pressure test & acid flush all keel coolers. Provide a written report of findings to customer representative. After inspection, cleaning and testing are completed, install new anodes, and hardware. Port Main Engine Sbd Main Engine Port Generator Engine Sbd Generator Engine Bow Thruster Engine	S/Y
Main Engines	Top end in frame Overhaul of Port / Sbd Cummins QSK19 main engines. Work scope as per Cummins recommendations. – Authorized manufacturer to perform work with OEM parts as per attached specification. Owner to approve vendor selection and quote. S/Y to assist	Force Power
Main Gearboxes	Open and inspect Main Gearboxes. – Authorized manufacturer to perform work with OEM parts. Owner to approve vendor selection and quote. S/Y to assist	LABMAR

Inspect and overhaul bow thruster. Schedule STP 110 and replace underpinner seal bearings and nutline. Verify all gear tolerances to manufacturer.

Bow thruster	inspect and overhaul bow thruster, service U.I.T.V and replace worn main shaft, bearings and O-rings. Verify an ECU controller to manufacturers specifications. Authorized manufacturer to perform work with OEM parts. Owner to approve vendor selection and quote. S/Y to assist	Gear Services
Bow thruster engine	Inspect and repair as necessary Cat 3306 bow thruster engine. Perform Cat recommended service as per the hours on engine. Authorized manufacturer to perform work with OEM parts as per attached specification. Owner to approve vendor selection and quote. S/Y to assist	LABMAR
	Check alignment between Bow thruster and engine. Shim as necessary.	S/Y
	Inspect and repair clutch PTO as necessary.	LABMAR
Generator Engines	Overhaul 3406 generator engines	Force Power
	Renew all bow thruster engine fuel hoses, all bow thruster hydraulic hoses.	
Hoses	Renew all main engine fuel hoses and air hoses. Renew all generator fuel hoses and air hoses. Hoses to be double braided USCG approved hoses	S/Y
Painting		
Hull Blasting, Cleaning and Painting - Hull & Decks	Sand sweep, or spot blast as necessary in way of rusted areas and recoat in accordance with attached paint specification. Keel to waterline Waterline to main deck Main Deck / Car Deck Aprons inside and exterior paint draft marks, vessel name bow/stern	S/Y
Super Structure Blasting, Cleaning and painting	Sand sweep, or spot blast as necessary in way of rusted areas and recoat in accordance with attached paint specification. All exterior areas Crew room & crew bathroom deck upper deck passenger area in way of door and underlayment flaking, repair underlayment	S/Y
Electrical		
Navigation electronics	3 rd party vendor to inspect vessel navigation system.	Star tech
General Alarm	3 rd party vendor to inspect general alarm system.	LABMAR
Switchboard	3 rd party vendor to inspect and clean main and Egen switchboard. Check all connections	LABMAR
24 VDC system	Replace all 8D batteries throughout vessel. Check and inspect all battery chargers, replace as necessary qty 9 - 8D 1100 CCA qty 8 - 12v 800 CCA marine battery	LABMAR
Lighting	Install new search light	S/Y
Electrical		
PSTP	3 rd party vendor to perform PSTP on vessel automation.	EMI
Electrical	Check and repair all blower and pump E-Stops on main deck.	EMI
Life Saving & Fire Fighting		

	Fire extinguishers	3 rd party vendor to recertify all portable fire extinguishers.	Coastal States
	CO2 System	Repair and replace CO2 controls (6 push buttons) and pull stations as required. Hydro test and refill 23 CO2 bottles, rebuild kits for 100# CO2 cylinders. Replace all system hoses	Coastal States
	Rescue Boat Davit	Renew Rescue boat davit wire with new certified wire as per manufacturer's specifications. Provide labor to stack weights on davit crane at 1.5 times working load limit. USCG to witness. Test weight 1500 lbs.	S/Y
	Rescue Boat Davit	Install limit switch on davit crane wire.	S/Y
	Life Floats	Vessel crew to renew life floats as necessary	LABMAR
	Emergency vent closures	Crew to demonstrate operation for USCG as required	LABMAR
	Anchor	Lower anchor and drop chain. Check function of anchor release/securing devices Inspect chain and repaint chain	S/Y
House General			
	Doors	Renew all water tight door gasket rubber. Chalk test watertight doors. Renew crew room door	S/Y
	Pilothouse HVAC	Remove defunct pilothouse HVAC, electrical unit and foundation. Seal previous duct penetration	S/Y
Misc. items			
	Spare Shafts	Fabricate 1 new main shaft	S/Y
	Spare propellers	Fabricate 2 stainless propellers LHRH 60" diam x 78" pitch x 0.68DAR, 4 blade, 6" shaft, as per drawings	S/Y
	Sea Trials	Sea trial vessel	S/Y
	Vendor assist	Assist vendors as needed	S/Y