



TUG OSPREY-LAY UP BOQ BOQ FOR PORT OF CAPE TOWN



BILL OF QUANTITIES





Summary


BOQ FOR PORT OF CAPE TOWN


	SECTION	TOTAL
1	Hull cleaning	
2	Hull Painting	
3	Seachests	
4	Anodes	
5	Anchors and Cables	
6	Voith Sea Space	
7	Voith Blades	
8	Seachest Valves	
9	Overboard valves	
10	Ballast tank & LO storage	
11	Fresh water tanks	
12	Fuel tanks	
13	Foam Tank	
14	Dirty oil tank	
15	Blackwater tank	
16	Anchor Chain lockers	
17	Fenders	
18	Void Space	
19	Coolers & Filters	
20	Fire Monitor	
21	Drydock 1	
22	Drydock 2	
	Total excluding VAT	
	15% VAT	
	Total including VAT	


*** Note the Bill of Quantities sections which follow must be read in conjunction with the relevant item contained in the scope of services, Annexure A.**


						
BOQ FOR PORT OF CAPE TOWN						
ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1		EXTERNAL HULL CLEANING and PAINTING				
	1.1	HULL & SUPERSTRUCTURE				
		Scrape and high pressure water wash hull. Dispose of the barnacles.	M ²	1270		
	1.2	HULL GRIT BLASTING				
	1.2.1	(SA2.5 = At least 95% of the surface shall be clean bare steel with at least 90% of any 25mm square clean bare steel. 1 nozzle/hour = 7 m ²). All grit blasting to be conducted in conjunction with the appointed paint representative. This will include the decision as to whether to carry out a SA1.0 or SA2.5 grit blast. Contractors will be responsible for the cleaning and removal of all spent grit from dry dock and the legal disposal of such.	M ²	1270		
	1.2.2	(SA2.5 = At least 95% of the gunwale surface shall be clean bare steel with at least 90% of any 25mm square clean bare steel. 1 nozzle/hour = 7 m ²). All grit blasting to be conducted in conjunction with the appointed paint representative. This will include the decision as to whether to carry out a SA1.0 or SA2.5 grit blast. Contractors will be responsible for the cleaning and removal of all spent grit from dry dock and the legal disposal of such. (AS and IF required by SAMSA)(Contractor can only invoice if this was carried out)	M ²	450		
	1.2.3	Light wet Sweep blasting to SA 1 to be carried out on hull [It may be necessary to spot blast certain areas to SA2.5, allow 15% for this]. All grit blasting to be conducted in conjunction with the appointed paint representative. This will include the decision as to whether to carry out a SA1.0 or SA2.5 grit blast. Contractors will be responsible for the cleaning and removal of all spent grit from dry dock and the legal disposal of such.	M ²	1270		
	1.2.4	Wet spot grit blasting to SA1 to be carried out on main deck, upper deck [it may be necessary to blast certain areas to SA 2.5, allow 15% for this].	M ²	450		
	1.2.5	Wet spot grit blasting to SA1 to be carried out on super structure including masts, hook, windlass and other fixtures. It may be necessary to blast certain areas to SA 2.5 allow 15% for this [contractors to ensure all glass areas are covered and protected against damage from shot blast].	M ²	55		
	1.2.6	Cover transducers with grease to protect against paint.	EA	1		
	1.2.7	Mechanical clean area below Voith table.	M ²	10		
	1.2.8	Descale and DE rust Main Engine and Auxiliary Engine Funnels and paint with heat resistant painting as per paint specifications.	EA	4		
	1.2.9	Mechanically prepare decks for painting.	M ²	450		
	1.2.10	High pressure wash decks.	M ²	450		
	1.2.11	High pressure wash accommodation outside, including superstructure, bridge and monkey island.	M ²	200		
	1.2.12	Mechanically prepare accommodation outside, including the superstructure, bridge and monkey island.	M ²	200		
	1.2.13	Mechanically prepare all deck equipment such as winches, cranes, anchor windlass for painting.	M ²	300		
		Sub total carried forward to sunmmary				


						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2		HULL PAINTING [On Completion of blasting and mechanically cleaning] NOTE: Paint spec requirements might be changed by the paint specialist. Painters to follow paint specialist advise. All paint, primer and coating is free issued by TNPA.				
	2.1	Apply a coat primer paint as per appointed paint representative's instructions to hull exterior, including underwater and side areas, voith table, gunwales, sea chests, and hawser pipes.	M ²	1270		
	2.2	Apply first anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline. To include underwater and side areas, voith table, gunwales, sea chests and Voith sea spaces [contractors will be responsible for turning Voith units as required and in a safe manner].	M ²	850		
	2.3	Apply second anti-fouling paint as per appointed paint representative's instructions to hull exterior up to and including the waterline. To include underwater and side areas, sea chests, hawser pipes, anchors and cutting in between colours (including spare anchor).	M ²	850		
	2.4	Apply coat [black] as per appointed paint representatives instructions to hull exterior above waterline. To include hawser pipes, rubbing band, gunwales, anchors and cutting in between colours including spare anchor.	M ²	450		
	2.5	Apply primer coat to prepared exposed areas on superstructure and all decks as per appointed paint representative's instructions.	M ²	200		
	2.6	Apply final coat [white] to superstructure including masts as per appointed paint representative's instructions.	M ²	200		
	2.7	Paint vessel names, port of registration and draft marks In white.	EA	2		
	2.8	Apply final coat deck green as per appointed paint representative instructions to all decks [apply non slip sand to decks].	M ²	450		
	2.9	Paint all deck auxiliary equipment such as winches, anchor windlass and fit Denzo tape on metal fittings.	M ²	300		
Sub total carried forward to summary						


						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
3		SEA CHESTS AND GRIDS				
	3.1	Remove ships intake grids.	EA	2		
	3.2	Scrape and high pressure wash inside sea chests and sea chest grids.	EA	2		
	3.3	Damaged Intake Grid bolts and threads to be repaired and/or replaced. Broken bolt threads to be removed from holes [Bolts are stainless steel 316. M12 size] [Bolts to be supplied by contractor]	EA	12		
	3.4	Spray paint inside sea chests and grids as per hull specifications.	EA	2		
	3.5	Replace grids upon completion of painting [Ref : Hull painting].	EA	2		
	3.6	All sea chest grid bolts to be rewired with stainless steel wire [wire to be supplied by contractor].	EA	12		
Sub total carried forward to summary						


						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
4		ANODES - Owner to supply anodes, washers and nuts (free issue)				
	4.1	All old anodes to be removed from hull, sea chests and Voith table before shot blasting and returned to vessel.	EA	90		
	4.2	All anode studs on hull to be cleaned and protected before shot blasting and painting commences.	EA	100		
	4.3	All anode studs of sea chest anodes to be cleaned and protected before shot blasting and painting commences.	EA	2		
		Sub total carried forward to summary				


						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
5	ANCHOR AND CHAIN					
	5.1	High pressure wash anchor and chain, and spare anchor. 6 shackles of 27.5 metres	EA	2 (inc. the spare)		
	5.2	Sand blast anchor chains (if needed) and paint afterwards.	EA	1		
	5.3	Range anchor chain end to end.	EA	1		
	5.4	Remark cable.	EA	1		
	5.5	Paint anchors.	EA	2		
	5.6	Coat cable with boiled linseed oil or equivalent (linseed oil to be supplied by contractor).	EA	1		
		Sub total carried forward to summary				


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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
6		VOITH SEA SPACES				
	6.1	Voith Sea Spaces	EA	4		
		Sub total carried forward to summary				


						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
7		SEA CHESTS AND GRIDS				
	7.1	Voith blades to be scraped and mechanically cleaned by hand with buffing machine to bare metal prior to Voith inspections and painting. [Grinding of blades will not be permitted]. Blades to be polished and be covered.	EA	10		
	7.2	Voith inspections (health check) and tests to be conducted in conjunction with Voith representative and submit report to TNPA.	EA	2		
	7.3	Voith blades to be covered with protective covering prior to painting.	EA	10		
Sub total carried forward to summary						


						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
8	SHIPS SEA CHEST VALVES					
	8.1	Main sea induction strainer isolating butterfly valves DN 250.	EA	2		
	8.2	Main sea inductionbutterfly valves DN 250.	EA	2		
	8.3	Main fire pump sea suction butterfly valves DN 350.	EA	2		
	8.4	Supply DN 350 Butterfly valve LR certified with certificate(If and when required).	EA	1		
	8.5	Sea intake air vent valves DN 50.	EA	4		
	8.6	Voith vacuum breaker valves DN 50.	EA	2		
	8.7	Clean and paint induction strainers, replace neaprene gasket.	EA	4		
		Subtotal carried forward to summary				


						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
9		OVERBOARD VALVES				
	9.1	Main engines sea water overboard valve DN 100	EA	2		
	9.2	General service pump overboard valve DN 80	EA	2		
	9.3	Black water overboard valve DN 100	EA	1		
	9.4	Oily water separator overboard valve DN 25	EA	1		
	9.5	Grey water overboard valve DN 50	EA	1		
	9.6	Galley overboard valve DN 50	EA	1		
	9.7	AC overboard valve DN 32	EA	1		
		Subtotal carried forward to summary				


						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
10		TANK				
	10.1	Aft Peak Ballast Tank	M ³	26.93		
	10.2	Fore Peak Ballast Tank	M ³	52.11		
	10.3	L.O. Tank Port and Starboard storage. (Contractor to supply storage holding tank).	M ³	6		
	10.4	Voith L.O Storage Tank Starboard. (Contractor to supply storage holding tank).	M ³	3		
		Sub total carried forward to summary				


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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
11		FRESH WATER TANK				
	11.1	Port fresh water tank.	M ³	43.02		
		Sub total carried forward to summary				


						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
12		FUEL TANKS				
	12.1	Fuel tank port day tank	M ³	5.11		
	12.2	Fuel tank starboard day tank	M ³	5.11		
	12.3	Fuel tank -Port	M ³	67.49		
	12.4	Fuel I tank - Starboard	M ³	67.49		
		Sub total carried forward to summary				


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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
13		FOAM TANKS				
	13.1	Foam Tank	M ³	13.59		
		Sub total carried forward to summary				


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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
14		DIRTY OIL TANK				
	14.1	Dirty oil tank	M ³	15.69		
		Sub total carried forward to summary				

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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
15		BLACK/GREY WATER TANK				
	15	Grey/black water tank	M ³	3.78		
		Sub total carried forward to summary				

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BOQ FOR PORT OF CAPE TOWN						
ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
16		Anchor chain lockers				
	16.1	Anchor chain lockers	M ³	4		
		Sub total carried forward to summary				

						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
17		Fenders				
	17.1	Remove and refit vertical fender (stern).	EA	50		
	17.2	Remove and refit horizontal fenders.	EA	1		
	17.3	Replace fender locating pins as required.	EA	26		
	17.4	Straighten fender locating pins as required.	EA	26		
	17.5	Renew vertical fender palms as required.	EA	10		
	17.6	Repair stern horizontal fender housing.	EA	1		
	17.7	Renew sausage fender tensioning screws.	EA	2		
	17.8	Renew fender straps.	EA	30		
	17.9	Renew fender chain.	EA	1		
	17.10	Renew fender straps ratchet.	EA	30		
	17.11	Miscellaneous repairs to stern section.	M ²	50		
	17.12	Repair belding port.	EA	1		
	17.13	Repair belding starboard.	EA	1		
	17.14	Repair port fender box.	EA	1		
	17.15	Repair starboard fender box.	EA	1		
	17.16	Mechanically clean fender housing FWD, paint the space before fitting the fenders.	EA	1		
	17.17	Mechanically clean fender housing AFT, paint the space before fitting the fenders.	EA	1		
	17.18	Remove and replace tyre fenders to facilitate painting the area obstructed by fenders.	EA	14		
		Subtotal carried forward to summary				

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BOQ FOR PORT OF CAPE TOWN						
ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
18		Void Space				
	18.1	Void Space	M ³	±40		
		Sub total carried forward to summary				

						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
Keel Coolers						
19	19.1	Remove, clean, pressure test and refit keel coolers (repair where necessary) .	EA	4		
	19.2	Replace gasket and anodes (Contractor to supply) .	EA	4		
		Subtotal				
Coolers						
	19.3	Take measurement of coolers. Loosen the coolers. Clean the coolers, replace anodes, and damaged gaskets (contractor to supply) . Retighten the cooler to original dimensions. Test the cooler for leaks.				
	19.3.1	HT Plate Coolers	EA	2		
	19.3.2	LT Plate Coolers	EA	2		
	19.3.3	L.O Plate Coolers	EA	2		
	19.3.4	Winch Coolers	EA	1		
		Subtotal				
Main Engine Charge air Coolers (Intercoolers)			EA	2		
Engine type : MAK (Caterpillar) 8M25C						
	19.4	Punch and clean port and starboard coolers. Apply Apexior no.3 to inside of cover. Renew O'ring (contractor to supply) . Pressure test coolers to 5 bars to test for leaks. Renew gasket on coolers and pipework (contractor to supply) . Renew anodes as required (contractor to supply) .	EA	2		
		Subtotal				
Main Engine						
	19.5	Ultrasonic cleaning of lube oil filters.	EA	2		
	19.6	Ultrasonic cleaning of self-cleaning filters.	EA	2		
	19.7	Remove and clean intercoolers.	EA	2		
		Subtotal				
Towing winch						
	19.8	Ultrasonic cleaning of hydraulic filter.	EA	1		
		Subtotal				


Subtotal carried forward to summary




BOQ FOR PORT OF CAPE TOWN

All bearings to be inspected, replaced as required and fit new grease nipples.
All spares and consumables needed for overhaul to be supplied by the contractor

ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
20		Fire Monitors	EA	2		
	20.1	Electrical supply to be isolated.	EA	1		
	20.2	Limit switches to be checked and adjusted if needed.	EA	8		
	20.3	Fire monitor to be removed from tug.	EA	2		
	20.4	Fire monitor to be dismantled.	EA	2		
	20.5	All seals to be renewed.	EA	10		
	20.6	Electric motors to be overhauled.	EA	4		
	20.7	Fire monitor to be painted after assembly.	EA	2		
	20.8	Test fire monitors when tug is out of the dock.	EA	2		
		Subtotal carried forward to summary				

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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
Pipe work & steel work						
21	21.1	Contractor to make provision for steel work.	ton	1		
			Subtotal			
Water Management	21.2	Supply water for blasting and cleaning.	M³	10		
			Subtotal			
Waste Management	21.3	Provide waste collection and disposal facilities [contractor to supply TNPA with disposal certificate].	ton	1		
	21.4	Contents of bilge and sludge tanks to be disposed off legally. [Certificate of bilge sludge liquid to be supplied to TNPA, to include location of disposal and volume].	M³	30		
			Subtotal			
Chemist	21.5	Chemist to test and issue gas free certificates for tank entry [one before entry into tanks for cleaning, and one before entry for SAMSA].	EA	4		
			Subtotal			
Drydock	21.6	Hire of shore crane, contractor to supply equipment [only actual days used to be invoiced].	Days	30		
	21.7	Hire of cherry picker, contractor to supply equipment [only actual days used to be invoiced].	Days	25		
	21.8	Hire of hyster, contractor to supply equipment [only actual days used to be invoiced].	Days	25		
	21.9	Arrange 380V 3 phase shore supply + extension cable.	Days	30		
	21.10	Arrange ablution facilities.	Days	30		
	21.11	Arrange fire main supply.	Days	30		
			Subtotal			
Hotwork	21.12	Supply Fire Marshall [only days used to be invoiced].	Days	25		
	21.13	Supply hot work permit.	Days	25		
			Subtotal			

Subtotal carried forward to summary

						
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ITEM	SUB ITEM	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
Bilge Cleaning and General Cleaning						
22	Deck plates to be removed and bilges cleaned. Bilges to be degreased and wiped down.					
	22.1	Provide labour for cleaning of bilges and assisting TNPA staff in the engine room.	4x8 Hours	10 days		
	22.2	Provide labour for assisting TNPA staff for cleaning of accommodation and bridge.	4x8 Hours	5 days		
	22.3	Bilges to be pumped out into shore tank (contractor to supply tank, pump and certified hose).	System	1		
		Subtotal				
Thickness Testing						
	22.4	NDT testing of hull plating including voith platform and sea chest as per SAMSA requirements; plus or minus 80 points.	Points	100		
	22.5	NDT testing of port and starboard void turntable and vertical sides.	Points	40		
	22.6	NDT testing of both port and starboard foam tanks internally.	Points	40		
	22.7	NDT testing of port and starboard hawser pipes.	Points	30		
	22.8	NDT testing of main sea water cross over pipe.	Points	30		
	22.9	NDT testing of main deck and bridge deck.	Points	50		
	22.10	NDT testing of port and starboard anchor chains.	Points	30		
	22.11	NDT testing of port and starboard exhaust funnels	Points	30		
	22.12	Supply certificate of results at least 3 days after NDT testing prior to re-floating of vessel.	EA	1		
		Subtotal				
Water tight Compartments						
To clean all watertight doors rubber grooves and fit new rubbers on potholes and watertight doors. Contractor to supply rubber material and glue.						
	22.13	Water tight doors	EA	5		
	22.14	Hatches	EA	2		
	22.15	Port Holes	EA	7		
		Subtotal				
Scaffolding						
	22.16	Erect safe access scaffolding/gangway to vessel.	days	30		
	22.17	Erect scaffolding in accessible heights (anodes, fender valve work and coolers).	days	30		
		Subtotal				
Divers						
	22.18	Provide divers during docking of craft (min 12 hours).	Days	2		
	22.19	Provide divers during undocking of craft (min 8 hours).	Day	2		
		Subtotal				