

LAPORAN HASIL PEKERJAAN

DOCKING REPAIR

MV. GAS NURI ARIZONA

PD 18 431 69

10 Juli 2018 s/d 04 Agustus 2018



SHIP BUILDING & REPAIR

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LAPORAN HASIL PEKERJAAN
DOCKING REPORT

Nomor : SC1717548/LHP/YWTS
Tanggal : April 2018

Kepada
Yth. PT Pelayaran Eka Nuri Indra Pratama
C.o. PT. Samudera Indonesia Ship Management
Jakarta

Name of Ship	:	MV GAS NURI ARIZONA
Ship Owner	:	PT Pelayaran Eka Nuri Indra Pratama
Ship Manager	:	PT Samudera Indonesia Ship Management
Length Overall (LOA)	:	105 m
Length Perpendicular (LPP)	:	98.4 m
Breadth (B)	:	19.8 m
Depth (D)	:	8.6 m
Draft (Design) (T)	:	5.976 m
Gross Tonnage	:	5,087 GT

No./A/C	Job Description	Keterangan
3	<u>GENERAL SERVICE</u>	
3.1	<u>Dry Docking and Dock Preparation</u>	
144002	<ul style="list-style-type: none"> Ship to be drydocked on soft topped blocks of suitable height for cleaning and examination and then undocked upon completion of listed underwater work including damage discovered on the underwater area upon docking of ship. Cost for 1st and 2nd day Cost per day for each Subsequent Day (Total 16 days) Realisasi :) Tanggal 10 Juli s/d 16 Juli 2018) Kapal dinaikkan dock 1 kali untuk pemeriksaan dan perbaikan selama 7 hari) 	Selesai
3.2	<u>Mooring and Unmooring</u>	
147002	<ul style="list-style-type: none"> Mooring and Unmooring of ship including installation and removal of gangway together with the assistance of yard's tugs, line handlers and dock master / pilot for berthing, unberthing, docking and undocking operations. Condition of Mooring and Unmooring: 1st Mooring - Direct berthing on arrival and docking 2nd Unmooring - Unberthing for undocking and sailing There shall be no additional cost for movement of the ship purely for the convenience of the shipyard. Realisasi :) Diberikan assistensi line handling pada saat kapal masuk di areal Galangan, naik dock) dan turun dock serta pada saat keluar dari areal Galangan) 	Selesai
3.3	<u>Tugboat</u>	
144002	<ul style="list-style-type: none"> To provide necessary services of tugboats to assist ship on arrival from anchorage to dock, from dock to yard wharfage or sea trial. Agency attendance during docking. 	Agen
3.4	<u>Fire Protection</u>	
122026	<ul style="list-style-type: none"> To make all necessary shore fire hoses to the ship with maintaining pressure fore Fire Precaution at Main Deck and inside the Engine Room for 3 lines. Fire protection i.e. fire hoses to be kept under minimum pressure of 3 bar during repair period. To quote unit price per line per day. Allowed for 3 lines Labour cost for connecting and disconnecting fire hoses. To quote unit price for connection and disconnection. Allowed for 3 connections and disconnections. Realisasi :) Diberikan sambungan selang pemadam ke atas kapal selama kapal docking & floating di JMI 7 hari) 	

No./A/C	Job Description	Keterangan
3.5 147001	Asistensi connect dan disconnect 3 conn)
	Disediakan APAR selama kapal di area dock YWTS 17 Juli - 4 Agustus 2018 19 hari)
	Wharfage)
	• To provide wharf facility for 4 days for ship berthing alongside to undergo afloat repairs.)
	Note: Owner do not prefer double banking anytime when alongside berth. Damages to hull painting shall be on yard's account. Damages to the ship hull in case of any double banking to be on Yard's Account.)
3.6 144004	Realisasi :)
	Kapal sandar YWTS tanggal 7 Juli 2018 sd 9 Juli 2018 3 hari)
	Kapal sandar YWTS kembali tanggal 17 Juli 2018 sd 5 Agustus 2018 20 hari	) Selesai
3.7 122025	Pilotage)
	• To provide pilotage service during ship movement from anchorage to dock area, from dock to yard wharf to sea trial or sail out. • Dock Master	) Agen
3.8 122030	Fire Watchman)
	• To provide fire watchman to patrol and make regular inspection of the entire ship during repair period. Fire watchman to report to the duty officer at regular interval.)
	• To furnish Fireman to be standby at Location on Deck, in Accommodation in adjacent in the Pump Room and Engine Room where "Hot Work" where carried out.)
	To quote unit price per man per day.)
	Realisasi :)
3.9 135001	Disediakan tenaga petugas pemadam kebakaran 5 orang selama kapal di area dock YWTS 19 hari)
	Disiapkan petugas pemadam kebakaran yang selalu stand by di kapal, selama kapal docking dan floating repair di JMI 7 hari)
		) Selesai
3.8 122030	Security Watchman)
	• To provide security watchman onboard the ship round the clock, carry out regular inspection, and patrol throughout the repair period.)
	To quote unit price watchman per day. Allowed for 2 men x 20 days.)
	Realisasi :)
	Disediakan tenaga security 1 orang diatas kapal selama kapal di area dock 27 hari	) Selesai
3.9 135001	Shore Power Supply)
	• To make all necessary connection and disconnection to the ship shore power connection box and supply electric shore power 440 V, AC 3 Phase, 50 Hz, 125 A during docking pe)
	Shore power supply at YWTS 440 V 50 Hz 3Phase 100 A)
	• Electric power reading shall be acknowledge by Chief Engineer before and after electric supply.)
	To quote unit price for connection / disconnection. Allowed for 2 connection and disconnection.)
	Telephone service)
	Realisasi :)
	Tanggal 10 Juli s/d 16 Juli 2018)
	Disupply aliran listrik 440 Volt, 100 Amp, 3 phase, 50 Hz selama 7 hari)
	Assistensi connect dan disconnect)
3.9 135001	Sewa trafo step up 380 V ke 440 V, 100 A, mulai hari senin tanggal 16 Juli s/d 29 Juli 2018 selama 14 hari)
	Disupply listrik 440V 3 Phase 100 A tanggal 17 Juli s.d 29 Juli 2018 14 hari)
		) Selesai

No./A/C	Job Description	Keterangan
3.10	<u>Cooling Water</u>	
136001	<p>³⁵₁₇ To provide, maintain, and supply of cooling water at adequate pressre to ship's air conditioning system, domestic reefer system, and engine control room air condition system during docking period. Pressure shall not exceed 2.5 bar.</p> <p>³⁵₁₇ To furnish labor for connecting and disconnecting shore water supply hoses.</p> <p>³⁵₁₇ To furnish labor for connecting and disconnecting discharge hoses.</p> <p>Total quote unit per line / day. Allowed for 6 lines (3 inlet and 3 outlet) during vessel in drydock</p> <p>Total quote unit cost per connection / disconnection. Allowed for 3 connections and disconnections.</p> <p>Realisasi :)</p> <p>Tanggal 10 Juli s/d 16 Juli 2018)</p> <p>Diberikan sambungan air pendingin untuk AC selama kapal di dalam dock selama 7 hari)</p> <p>Asistensi connect dan disconnect) Selesai</p> <p>Tanggal 23 Juli s/d 30 Juli 2018)</p> <p>Diberikan sambungan air pendingin untuk AC selama kapal di dalam dock selama 8 hari)</p> <p>Asistensi connect dan disconnect) Selesai</p>	
3.11	<u>Compressed Air</u>	
137001	<p>³⁵₁₇ To provide compressed air manifolds on deck and engine room for general use and also for ship's crew maintenance work. Air pressure to maintain at 5 bar.</p> <p>To quote unit cost per manifold per day. Allowed for 2 manifolds during vessel in drydock.</p> <p>To be quoted unit cost for connection and disconnection manifold. Allowed for 2 connections and disconnections.</p>	Batal
3.12	<u>Fresh Water</u>	
136002	<p>³⁵₁₇ To supply fresh water to the ship 200 tons later as instructed by Owner Surveyor. Furnish labor for connect and disconnect shore hoses.</p> <p>To quote unit price / ton. Allowed to supply for 200 tons.</p> <p>To quote cost per connection and disconnection. Allowed for 2 connection and disconnection.</p> <p>Realisasi :)</p> <p>Disupply air tawar sebanyak 200 Ton) Selesai</p>	
3.13	<u>Bilge Pump</u>	
171002	<p>³⁵₁₇ To arrange yard's portable pneumatic pump to pump bilge water from Engine Room, Pump Room, and location indicated during repair period, or as per O/S Instruction.</p> <p>a) Chain locker x 1 pump x 1 day and connection / disconnection:</p> <p>b) Engine room x 1 pump x 1 days and connection / disconnection:</p> <p>c) Oily bilge pumping in Engine room (Sludge tank / Bilge tank/ Stuffing box tank).</p>	Batal
3.14	<u>Staging – Unstaging</u>	
171003	<p>³⁵₁₇ To arrange staging and unstaging for work assistance as follows:</p> <ol style="list-style-type: none"> 1. Ultrasonic Thickness Measurement for Class Survey 2. High and Low Sea Chest 3. Propeller 4. Propeller Shaft 5. Rudder 6. Funnel Painting 7. Replating, if applicable 8. Others if needed, Superstructure Painting, Cargo Hose Crane, Masthead, etc. <p>³⁵₁₇ Est. total scaffolding = 1,500 m3</p> <p>Realisasi :)</p> <p>Dilaksanakan pemasangan dan pembongkaran perancah untuk pekerjaan :)</p> <p>- Di Kemudi kanan / kiri)</p>	

No./A/C	Job Description	Keterangan
	4 x 2 x 6 M x 2 Unit	
	- Di Propeller	
	4 x 2 x 4 M x 2 Unit	
	- Di Kotak Sea Chest kanan kiri	
	4 x 2 x 4 M x 3 Unit	
	- Di Bul bows untuk cat dan blasting kanan / kiri	
	4 x 2 x 6 M x 2 Unit	
	- Di Ship name belakang untuk replating	
	8 x 2 x 6 M x 1 Unit	
	- Di Plimsol kanan / kiri	
	3 x 2 x 6 M x 2 Unit	
	- Di Urlup kanan / kiri	
	3 x 3 x 6 M x 2 Unit	
	Bongkar pasang perancah/scaffolding, sbb :	
	- Perancah/scaffolding di forecastle u/ pekerjaan pipa, ukuran :	
	5 x 5 x 2 M x 1 Unit	
	- Perancah/scaffolding dalam tangki void 1 & 2 kiri u/ pekerjaan pipa, ukuran :	
	5 x 5 x 2 M x 4 Unit	
	- Perancah/scaffolding antara doom 1 & doom 2 di deck u/ pekerjaan pipa, ukuran :	
	5 x 5 x 2 M x 2 Unit	Selesai
	- Perancah/scaffolding di forecastle u/ pekerjaan pipa, ukuran :	
	5 x 5 x 2 M x 1 Unit	
	- Perancah/scaffolding dalam tangki void 1 & 2 kiri u/ pekerjaan pipa, ukuran :	
	5 x 5 x 2 M x 1 Unit	
	- Perancah/scaffolding antara doom 1 & doom 2 di deck u/ pekerjaan pipa, ukuran :	
	5 x 5 x 2 M x 4 Unit	Selesai
3.15	Temporary Lighting	
135002	³⁵ / ₁₇ To provide additional cables with lights as requested by O/S to spaces as needed by vessel's crew or owner's contractor during the repair period. Electric power consumption include. To quote unit cost per lighting per day during vessel in drydock	
	Realisasi :	
	Diberikan penerangan dengan listrik dan lampu dari darat selama kapal masih berada di areal dock dan belum bisa menggunakan listrik kapal.	27 hari Selesai
3.16	Ventilation Fans, Blowers, and Lights	
136003	³⁵ / ₁₇ To provide and maintain forced ventilation fans, blowers, and lights to confine space such as All LPG Cargo Tanks, All Ballast Water Tanks, Cofferdam, and/or Pump Room during repair period. ³⁵ / ₁₇ To furnish labor for connecting and disconnecting electric power to above fans and blower. ³⁵ / ₁₇ To confirm the quantity of blowers and lighting to O/S before arrangement. To quote unit cost / day (including cables and ducts). Allowed for 16 days. (Power consumption based on actual meter reading shall be charged separately under item "Shore Power Supply"). To quote unit cost for connection and disconnection. Realisasi :	

No./A/C	Job Description	Keterangan															
	<p>Disediakan sistem ventilasi / blower dan penyaliran / lampu untuk ruangan kerja untuk replating LPG Cargo Tanks, All Ballast Water Tanks, Cofferdam, dan Pump Room (dari tgl 10 Juli s/d 30 Juli 2018)</p> <p>21 hari</p>	Selesai															
3.17 125002	<p>Crane Service</p> <ul style="list-style-type: none"> To furnish yard shore crane service for loading and unloading of ships provision and running store as required by O/S. To quote unit price / hour usage. Allowed for 10 hours usage. <p>Realisasi :</p> <p>Diberikan pelayanan pemakaian crane untuk pekerjaan :</p> <ul style="list-style-type: none"> - Replating - Pengecatan dan sanblast - Loading unloading pipa - Loading unloading cooler ME, AE - Loading unloading Lifeboat 	Selesai															
3.18 144003	<p>Ballasting and De-Ballasting</p> <p>PIC: Chief Officer</p> <p>³⁵₁₇ To connect and later disconnect sea water line to ship and supply sea water into ballast water tank for undocking purpose and adjust vessel trim for undocking as per calculation from C/O.</p> <p>Estimated quantity = 1,000 tons.</p> <p>To quote cost per ton of sea water for ballasting. Allowed for 1,000 tons.</p> <p>To deballasting quote cost per ton of sea water. Allowed as per ton.</p> <p>To quote cost per connection and disconnection. Allowed for 4 connections and disconnections.</p> <p>Realisasi :</p> <p>Disupply air laut dari dock untuk pengapungan sebagai ballast, uk :</p> <table> <tr> <td>- FPT</td> <td>=</td> <td>135 m3</td> </tr> <tr> <td>- WBT 3 C</td> <td>=</td> <td>250 m3</td> </tr> <tr> <td>- WBT 4 C</td> <td>=</td> <td>250 m3</td> </tr> <tr> <td>- WBT 5 C</td> <td>=</td> <td>250 m3</td> </tr> <tr> <td>TOTAL =</td> <td></td> <td>885 m3</td> </tr> </table> <p>connect & disconnect</p> <p>4 conn.</p>	- FPT	=	135 m3	- WBT 3 C	=	250 m3	- WBT 4 C	=	250 m3	- WBT 5 C	=	250 m3	TOTAL =		885 m3	Selesai
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- WBT 5 C	=	250 m3															
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3.19 146001	<p>Gas Free Inspection</p> <p>³⁵₁₇ To provide yard's chemist for detection of gas condition and all Cargo Oil Tanks, Fuel Oil Tanks, Bunker Oil Tanks, Double Bottom Tanks, Pump room, Void Space Tanks, Cofferdam during repair period.</p> <p>³⁵₁₇ The gas free inspection shall be carried out at least two time each day the mean morning time before working progress and after lunch period. Estimated for 16 days</p> <p>³⁵₁₇ To arrange gas free certificate for hot works and issue certificate, include yard's chemist for subsequent days.</p> <p>Realisasi :</p> <p>Dilaksanakan freegas setiap hari pada tanki ballast & COT</p>	Selesai															
3.20 146002	<p>Port Chemist Inspection</p> <p>> To arrange Government or Independent surveyor certified chemist to detect Gas condition and check compartments and surrounding area "Hot Work" upon completion of detection issue "Fit For Hot Work Certificate".</p> <p>Realisasi :</p> <p>Diberikan pelayanan pengawasan freegas oleh syahbandar & dibuatkan sertifikat .</p>	Selesai															

No./A/C	Job Description	Keterangan
3.21 123006	<p><u>Alleyway Covering</u></p> <p>> To provide Covering Accommodation alleyway during repair with waterial of cartoon and tapes, detail position at main deck and 1st Deck.</p> <p>Realisasi : Menutupi & melindungi lantai ruangan dg kertas karton & plastik mica posisi main deck & 1 st deck sebanyak 1 lot</p>	Selesai
3.22 171001	<p><u>Garbage and Galley Refuse Disposal</u></p> <p>³⁵/₁₇ To keep clean during repair period. Garbage and refuse to be removed from the galley daily.</p> <p>³⁵/₁₇ Deck (including Cargo Holds and Tanks), Engine Room, Accommodation and other compartments, specially the areas where repair works were carried out to be thoroughly cleaned, after completion of the job.</p> <p>³⁵/₁₇ Furnish a receptacle on board for garbage at poop deck, collection and disposed off daily To quote unit price per day. Allowed for 16 days.</p> <p>Realisasi : Disediakan bak sampah diatas kapal = 2 bh Bak sampah dan isi sampah diturunkan ke darat untuk dibuang ke penampungan akhir darat 3 m³</p> <p>Dibuang limbah Engine room sebanyak 5 M³ Dibuang limbah maindeck sebanyak 6 M³</p>	Selesai
3.23 123001	<p><u>Final Cleaning</u></p> <ul style="list-style-type: none"> The ship will arrive at the yard with a clean machinery space and dry bilges. During repair, all rubbish to be removed daily and on completion of repairs, all areas on deck, accomodation space, cargo tanks, pump rooms, engine room and any other locations dirtied by yard as a result of repair work are to be cleaned up and ship to sail out with above spaces mentioned in a state at least to that on arrival. <p>If it is yard's policy to charge for above, then yard to quote as follows:</p> <ul style="list-style-type: none"> To provide labours and materials to maintain all decks, accommodation, cargo tanks, pump rooms and engine room in a clean and dry state during entire period ship in shipyard. Final cleaning to carry out upon completion of all repairs. <p>Realisasi : - Dilaksanakan final cleaning di ruang akomodasi crew , main deck , forcstle deck, poop deck, void space 1, & void space 2, Engine room</p>	Selesai
3.24 123005	<p><u>Engine Room Bilges and Sludge</u></p> <p>³⁵/₁₇ To furnish labour, material and equipment to pump out engine room bilge water during entire repair period. To provide oil tank at the dock bottom and quay side for storing bilge water as deemed necessary.</p> <p>³⁵/₁₇ To provide certificates of proof indicating bilges and sludge removed from ship stating quantity, time, date, location, tank from which fluid was pumped and any other associated information.</p> <p>To quote unit price / day for rental of pump. To quote unit price / ton for sludge disposal. Allowed for disposal 1 ton of sludge. To quote cost / ton for bilge water disposal. Allowed for disposal 1 ton of bilge water. To quote unit cost for connection / disconnection.</p> <p>Realisasi : Diberikan sertifikat garbage removal deck departement 1 set Diberikan sertifikat waste removal engine departement 1 set</p>	Selesai
3.25 262001	<p><u>Bottom Plugs</u></p> <p>> To remove only plugs at the expressed instruction of Owner's Representative and to be re-fitted and cemented before flooding. The screw thread on plug and socket to be thoroughly inspected</p>	

No./A/C	Job Description	Keterangan																																																																																																																		
	<p>prior to reinstalling of plug. If screw thread found damaged, same to be brought to the Attention of O/S.</p> <p>> To quote unit price for removal and refitting. Allowed for removing and refitting a total of 22 drain plugs.</p> <p>Note:</p> <p>Do not open drain plugs of Fuel oil tanks.</p> <p>Removal of any bottom plugs, shall be recorded and witnessed by a ship's officer. No plugs are to be removed from tanks containing fuel oil or lubricating oil unless specifically required and this is to be carefully checked and recorded.</p> <p>Material SUS-304</p> <ul style="list-style-type: none">• After refitting, the plugs is subjected to vacuum test to confirm tightness and integrity, thereafter covered with cement.• To quote unit price to carry out vacuum test. Allowed for testing of 22 plugs. <table><tr><th>No</th><th>Tanks Name</th><th>Frame. No</th><th>Capacity</th><th>Quantity Plugs</th><th>Mark (Bead weld)</th></tr><tr><td>1</td><td>FPT</td><td>133-F.E</td><td>136.15</td><td>1</td><td>FPT</td></tr><tr><td>2</td><td>NO.1 WBT-P</td><td>118-133</td><td>211.44</td><td>1</td><td>1WB</td></tr><tr><td>3</td><td>NO.1 WBT-S</td><td>118-133</td><td>211.44</td><td>1</td><td>1WB</td></tr><tr><td>4</td><td>NO.2 WBT-P</td><td>96-107</td><td>73</td><td>1</td><td>2WB</td></tr><tr><td>5</td><td>NO.2 WBT-S</td><td>96-107</td><td>73</td><td>1</td><td>2WB</td></tr><tr><td>6</td><td>NO.3 WBT-C</td><td>85-96</td><td>244.65</td><td>2</td><td>2WB</td></tr><tr><td>7</td><td>NO.4 WBT-C</td><td>74-85</td><td>279.24</td><td>1</td><td>4WB</td></tr><tr><td>8</td><td>NO.5 WBT-C</td><td>63-74</td><td>289.96</td><td>2</td><td>5WB</td></tr><tr><td>9</td><td>NO.6 WBT-C</td><td>52-63</td><td>285.6</td><td>1</td><td>6WB</td></tr><tr><td>10</td><td>NO.7 WBT-C</td><td>41-52</td><td>264.77</td><td>2</td><td>7WB</td></tr><tr><td>11</td><td>NO.8 WBT-C</td><td>30-41</td><td>213.49</td><td>1</td><td>8WB</td></tr><tr><td>12</td><td>No.1 FWT (P)</td><td></td><td></td><td>1</td><td>1FW</td></tr><tr><td>13</td><td>No.1 FWT (S)</td><td></td><td></td><td>1</td><td>1FW</td></tr><tr><td>14</td><td>APT-P</td><td>A.E-8 (F.W)</td><td>40.56</td><td>1</td><td>APT</td></tr><tr><td>15</td><td>APT-S</td><td>A.E-8 (F.W)</td><td>48</td><td>1</td><td>APT</td></tr><tr><td>16</td><td>Rudder (C)</td><td></td><td></td><td>2</td><td>RUDD</td></tr><tr><td>17</td><td>C.W.T (C)</td><td></td><td></td><td>1</td><td>CWT</td></tr><tr><td>18</td><td>STERN FRAME</td><td></td><td></td><td>1</td><td>SF</td></tr></table> <p>Realisasi :</p> <p>- Dibuka / ditutup / divacum test dan disemen bottom plug di FPT = 1 bh, WBT 1 PS/SB = 2 bh, WBT 2 PS/SB = 2 bh, WBT 3 C = 1 bh, WBT 4 C = 1 bh, WBT 5 C = 1 bh, WBT 6 C = 1 bh, WBT 7 C = 1 bh, WBT 8 C = 1 bh, jumlah 11 bh</p> <p>- Air laut dibuang lewat bottom plug = 1000 ton</p> <p>3.26 108002 Drawings</p> <ul style="list-style-type: none">• To submit drawing to owner showing shell, included ultrasonic gauge test as requested by class (6 copy each). <p>Realisasi :</p> <p>Dibuatkan record pengukuran dan gambar repair plan sesuai permintaan class dalam 6 rangkap.</p> <p>3.27 151002 Basin Trial</p> <p>To be arranged Basin Trial as requested by O/S and provide tugs and insurance wire for above operation.</p> <p>3.28 151003 Sea Trial & Compass Adjuster</p> <ul style="list-style-type: none">• To furnish labour, necessary tools, equipment and material in order to carry out sea trial after completion of all repairs to the satisfaction of the O/S.• All machineries repaired by shipyard personnel to be thoroughly checked for working and to make any final adjustment as found necessary.• Workers to be stationed around the Main Engine, Turbo chargers, Fuel Pump, and Exhaust	No	Tanks Name	Frame. No	Capacity	Quantity Plugs	Mark (Bead weld)	1	FPT	133-F.E	136.15	1	FPT	2	NO.1 WBT-P	118-133	211.44	1	1WB	3	NO.1 WBT-S	118-133	211.44	1	1WB	4	NO.2 WBT-P	96-107	73	1	2WB	5	NO.2 WBT-S	96-107	73	1	2WB	6	NO.3 WBT-C	85-96	244.65	2	2WB	7	NO.4 WBT-C	74-85	279.24	1	4WB	8	NO.5 WBT-C	63-74	289.96	2	5WB	9	NO.6 WBT-C	52-63	285.6	1	6WB	10	NO.7 WBT-C	41-52	264.77	2	7WB	11	NO.8 WBT-C	30-41	213.49	1	8WB	12	No.1 FWT (P)			1	1FW	13	No.1 FWT (S)			1	1FW	14	APT-P	A.E-8 (F.W)	40.56	1	APT	15	APT-S	A.E-8 (F.W)	48	1	APT	16	Rudder (C)			2	RUDD	17	C.W.T (C)			1	CWT	18	STERN FRAME			1	SF	<p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>Selesai</p> <p>)</p> <p>)</p> <p>)</p> <p>Selesai</p>
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12	No.1 FWT (P)			1	1FW																																																																																																															
13	No.1 FWT (S)			1	1FW																																																																																																															
14	APT-P	A.E-8 (F.W)	40.56	1	APT																																																																																																															
15	APT-S	A.E-8 (F.W)	48	1	APT																																																																																																															
16	Rudder (C)			2	RUDD																																																																																																															
17	C.W.T (C)			1	CWT																																																																																																															
18	STERN FRAME			1	SF																																																																																																															

No./A/C	Job Description	Keterangan
	<p>Valves during sea trial. Any leakage or defect to be corrected accordingly.</p> <ul style="list-style-type: none"> • To provide work boat to send O/S and yard workers back to yard premises on completion of sea trial • The shipyard shall provide Satisfaction Report of Sea Trial Result signed by O/S, Master, and C/E <p>Realisasi :) Dilaksanakan timbal kompas & diberikan sertifikat dari syahbandar) Dilaksanakan sea trial)</p>	Selesai
4	<u>DRY DOCKING</u>	
4.1	<u>Ultrasonic Measurement Test</u>	
205006	<p>PIC: Chief Officer and Technical Superintendent</p> <p>³⁵₁₇ To be measured plate thickness by ultrasonic gauge as instructed by Class Surveyor as per Class Requirement for Intermediate Survey VI.</p> <p>³⁵₁₇ To be measured est. 5000 spots as suspected area and submit record for class and owner copies each.</p>	Owner
4.2	<u>Hull Cleaning Preparation</u>	
203002	<p>PIC: Chief Officer</p> <p>To be provided labour, necessary tools, material, and crange to accomplish the following works:</p> <p>³⁵₁₇ To be carried out hand scrap the barnacle on ship's hull from keel to light load line.</p> <p>³⁵₁₇ To be washed down ship hull from keel to deep load line including rudder blade, stern frame and sea chest with High Pressure Fresh Water Washing (HPFWW) about 350 - 700 bar prior to painting include consumption of fresh water for above jobs. The standard and result of HPFWW shall be accepted by O/S prior to further work on the Hull Coatings.</p> <p>³⁵₁₇ To be installed wooden plugs to ship side scupper openings to keep hull dry during painting and remove prior to completion.</p> <p>The area shall be carried out the Hull Preparation as follows:</p> <p>Flat Bottom Area = 1172 m²</p> <p>Vertical side Area =1591 m²</p> <p>Realisasi :) Flat Bottom) Plat Bottom area luas 1172 M2, dilaksanakan :) - Di Skrap luas : 1172 m3) - 2 x Di Cuci air tawar luas : 2344 m3) Realisasi :) Vertical Side) Vertical Side area luas 1591 M2, dilaksanakan :) - 2 x Di Cuci air tawar luas : 3182 m3)</p>	Selesai
4.3	<u>Bottom Area, 1172 m2</u>	
203003	<p>PIC: Chief Officer</p> <p>To be provided labour, necessary tools, material, and crange to accomplish the following works:</p> <p>³⁵₁₇ To be carried out Sweep – Spot Sand-blasting to min. SA 2 30 % of total area as appointed.</p> <p>Paint Specification (Refer to Last Docking) as follows:</p> <p>★ 1 x F/C Anti-Corrosive</p> <p>★ 1 x F/C Sealer Coat</p> <p>★ 1 x F/C Anti-Fouling System</p> <p>³⁵₁₇ To be carried out fresh water washing cleaning upon completion of Anti-Corrosive Coat and Sealer Coat.</p> <p>Paint supply by Owner.</p> <p>Note:</p> <p><i>Coating Advisor, as on behalf the Owner, with Shipyard Representatives shall check actual condition after the ship has been docked in graving dock immediately. The result of arrival condition checking will be highly considered to be main specification of coating at this area and shall be reported and approved by O/S. To take photograph as evidence.</i></p>	<p>Sweepblast</p> <p>Fullblast</p>

No./A/C	Job Description	Keterangan
4.4 203003	Realisasi : Flat Bottom area luas 1172 M2, dilaksanakan : - Di Sweeblast luas : 820,4 m3 - Di Sandblast luas : 351,6 m3 Dilakukan pengecatan sesuai Spec Paint Maker sbb : - 1 x Cat Primer luas : 1172 m3 - 1 x Cat AC luas : 1172 m3 - 1 x Cat Anti Fouling luas : 1172 m3	Selesai
	Vertical side Area = 1591 m² PIC: Chief Officer To be provided labour, necessary tools, material, and crane to accomplish the following works: 35/17 To be carried out Sweep – Spot Sand-blasting to min. SA 2 30 % of total area as appointed. Paint Specification (Refer to Last Docking) as follows: ★ 1 x F/C Anti-Corrosive ★ 1 x F/C Sealer Coat ★ 1 x F/C Anti-Fouling System ★ 1 x F/C Anti-Fouling System <i>Paint supply by Owner.</i> 35/17 To be carried out fresh water washing cleaning upon completion of Anti-Corrosive Coat and Sealer Coat. Note: <i>Coating Advisor, as on behalf the Owner, with Shipyard Representatives shall check actual condition after the ship has been docked in graving dock immediately. The result of arrival condition checking will be highly considered to be main specification of coating at this area and shall be reported and approved by O/S. To take photograph as evidence.</i>	
	Realisasi : Vertical Side area luas 1591 M2, dilaksanakan : - Di Sweeblast luas : 1239 m3 - Di Sandblast luas : 352 m3 Dilakukan pengecatan sesuai Spec Paint Maker sbb : - 1 x Cat Primer luas : 1591 m3 - 1 x Cat AC luas : 1591 m3 - 1 x Cat Anti Fouling luas : 1591 m3	
	Realisasi : Sirip PS/SB area luas 60 M2, dilaksanakan : - Di Skrap luas : 60 m3 - 2 x Di Cuci air tawar luas : 120 m3 - Di Sweeblast luas : 40 m3 - Di Sandblast luas : 20 m3 Dilakukan pengecatan sesuai Spec Paint Maker sbb : - 1 x Cat Primer luas : 60 m3 - 1 x Cat AC luas : 60 m3 - 1 x Cat Anti Fouling luas : 1591 m3	
	Top Side and Bulwark Area 1051 m² PIC: Chief Officer To be provided labour, necessary tools, material, and crane to accomplish the following works: 35/17 To be carried out Sweep – Spot Sand-blasting to min. SA 2 30% of total area as appointed. Paint Specification (Refer to Last Docking) as follows: ★ 1 x F/C Anti-Corrosive ★ 1 x F/C Polyurethane Coat <i>Paint supply by Owner.</i> 35/17 To be carried out fresh water washing cleaning upon completion of Anti-Corrosive Coat. Note:	

[illegible]

No./A/C	Job Description	Keterangan																								
	<p>2. The renewed material should be confirmed by O/S</p> <p>Realisasi :</p> <p>Dilaksanakan pekerjaan pembersihan Kotak Sea Chest & sea greating, rincian :</p> <p>- Dibuka tutupnya</p> <p>- Disekrap</p> <p>- Dibersihkan lumpurnya.</p> <p>- Disweepblast</p> <p>- Dicat 2 kali cat AC</p> <p>- Dicat 2 kali cat AF</p> <p>Sea Greating ditutup kembali, disegel dan disemen baut-bautnya</p> <table><tr><td>Sea Greating ukuran :</td><td>90 cm</td><td>x</td><td>75 cm</td><td>x</td><td>4 bh</td></tr><tr><td></td><td></td><td>Dia.</td><td>66 cm</td><td>x</td><td>1 bh</td></tr></table> <p>Kotak sea chest ukuran :</p> <table><tr><td></td><td>110 cm</td><td>x</td><td>130 cm</td><td>x</td><td>4 bh</td></tr><tr><td></td><td>65 cm</td><td>x</td><td>70 cm</td><td>x</td><td>1 bh</td></tr></table>	Sea Greating ukuran :	90 cm	x	75 cm	x	4 bh			Dia.	66 cm	x	1 bh		110 cm	x	130 cm	x	4 bh		65 cm	x	70 cm	x	1 bh))
Sea Greating ukuran :	90 cm	x	75 cm	x	4 bh																					
		Dia.	66 cm	x	1 bh																					
	110 cm	x	130 cm	x	4 bh																					
	65 cm	x	70 cm	x	1 bh																					

No./A/C	Job Description	Keterangan
	<p>> Layani colour cek pada propeller</p> <p>Realisasi :</p> <p>Propeller Shaft</p> <p>Dilaksanakan pengukuran clearance Propeller Shaft dia. 320 mm</p> <p>Bush : White Metal, stock : St. Stell, sleeve : -</p> <p>Diperiksakan Klass / Owner dan dibuatkan record 6 lembar</p> <p>> Buka pasang skerm dia 400 mm x 150 mm = 1 unit, dengan sistem pengelasan</p>	<p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>Selesai</p>
4.13	<u>Rudder Blade And Rudder Trunk</u>	
401001	PIC: Chief Engineer and Technical Superintendent	
402026	To be furnished labour, necessary tools, materials, and stagings to accomplish the following:	
218006		
4.13.1	<u>Rudder Blade</u>	
	Type: Semi-Spade Rudder	
	To be measured pintle and neck bearing clearance.	
	³⁵ / ₁₇ To be submitted record for Class Inspection.	
	³⁵ / ₁₇ To be cropped rudder bottom pintle closing plate or locking device for access.	
	³⁵ / ₁₇ To be refitted and welded as per original position, as instructed by Class Surveyor.	
	³⁵ / ₁₇ To be opened up rudder blade bottom plug to be inspected by Class Surveyor and reinstalled as per original later.	
	³⁵ / ₁₇ To be replaced rudder stock gland packing as per O/S confirmation (owner supply).	
	³⁵ / ₁₇ To be carried out Pressure Test with Air or Vacuum Test to be inspected by O/S and Class Surveyor.	
	• To replace and re install rudder blade	
	Realisasi :	
	Rudder Stock)
	Dilaksanakan pengukuran clearance Rudder Stock dia. 280 mm,)
	Bush : Bronze, stock : Stell, sleeve : Bronze)
	Diperiksakan Klass / Owner dan dibuatkan record 6 lembar)
	Pintle)
	Dilaksanakan pengukuran clearance Rudder Stock dia. 210 mm,)
	Bush : Bronze, stock : Stell, sleeve : Bronze)
	Diperiksakan Klass / Owner dan dibuatkan record 6 lembar)
	Realisasi :)
	Daun Kemudi)
	Kemudi area luas 16 M2, dilaksanakan :)
	- Di Skrap luas : 16 m3)
	- 2 x Di Cuci air tawar luas : 32 m3)
	- Di Sweeblast luas : 16 m3)
	Dilakukan pengecatan sesuai Spek Paint Maker sbb :)
	- 1 x Cat Primer luas : 16 m3)
	- 1 x Cat AC luas : 16 m3)
	- 1 x Cat Anti Fouling luas : 16 m3)
		Selesai
4.13.2	<u>Rudder Trunk</u>	
	³⁵ / ₁₇ To be opened up manhole of rudder trunk.	
	³⁵ / ₁₇ To be cleaned water or muds debris inside of tank for preparing inspection, later assembled manhole with new packing using existing nut as per original condition.	
4.14	<u>Anchor And Anchor Chain</u>	
431021	PIC: Chief Officer	

No./A/C	Job Description	Keterangan																
	<p>Anchor Specification:</p> <p>Anchors: 4320kg x 2 sets / JIS Stockless Type Material-SC, 42</p> <p>Anchor Chain Specifications:</p> <p>Diameter 50 mm (grade 2); 9 shackel portside & 10 shackel starboard</p> <p>To be provided labour, necessary tools, and crane to accomplish the following works:</p> <p>³⁵₁₇ To be lower down anchor and chain cable on dock's floor by release the bitter ends with the emergency release mechanism,</p> <p>³⁵₁₇ To be washed down with high pressure water jet about 350 - 500 bar.</p> <p>³⁵₁₇ To be carried out hard chipping rusty area, included consumption of water for the job.</p> <p>³⁵₁₇ To be disconnected the first 3 length (P/S) anchor chain and reconnected to the bitter end of the chain. To be reconnected anchors to new chain ends.</p> <p>³⁵₁₇ To be renew swivel chain cable (P/S), dia.Chain : 50 mm = 2 units. (owner supply).</p> <p>³⁵₁₇ To be calibrated and measured all shackles connection in presence of O/S and submitted record Chain Cable P/S.</p> <p>³⁵₁₇ To be renewed anchor chain ,dia. 50 mm = 5 shackel (Owner supply)</p> <p>³⁵₁₇ To be shot marking (P/S) chain cables in way of joining shackles and applied finish fish oil.</p> <p>³⁵₁₇ To be applied bituminous coating for both anchor (owner supply).</p> <p>³⁵₁₇ To be restowed anchors and cables on completion.</p> <p>³⁵₁₇ To be adjusted cable as necessary such that the cable stopper drops over a horizontal link.</p> <p>Realisasi :</p> <p>Telah dilaksanakan pekerjaan pembersihan rantai dan jangkar kanan kiri, rincian pekerjaan :</p> <ul style="list-style-type: none">- Rantai dan jangkar diturunkan ke lantai dock- Rantai digelar di lantai dock.- Rantai dicuci air tawar / diwater jet- Rantai diukur dan dibuatkan record.- Rantai diketok- Rantai dibersihkan- Rantai dicat bitumastic.- Dia. Rantai 50 mm, jumlah 18 segel. <p>Setelah selesai pekerjaan rantai dan jangkar dinaikan kembali ke atas kapal.</p> <p>Pasang baru swivel rantai jangkar dan segel jangkar P/S, sbb : (material supply dock)</p> <table><tr><td>- Swivel dia.</td><td>2"</td><td>x</td><td>2 buah</td></tr><tr><td>Timah pengunci pin swivel</td><td></td><td>x</td><td>2 buah</td></tr><tr><td>- Segel jangkar dia.</td><td>2"</td><td>x</td><td>2 buah</td></tr><tr><td>Timah pengunci segel</td><td></td><td>x</td><td>2 buah</td></tr></table> <p>Pasang jangkar ke kapal</p> <p>Asistensi :</p> <ul style="list-style-type: none">- Bongkar pasang<ul style="list-style-type: none">> Rantai jangkar> Swivel jangkar> Geser jangkar dari darat ke kapal	- Swivel dia.	2"	x	2 buah	Timah pengunci pin swivel		x	2 buah	- Segel jangkar dia.	2"	x	2 buah	Timah pengunci segel		x	2 buah	<p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> <p>)</p> 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- Swivel dia.	2"	x	2 buah															
Timah pengunci pin swivel		x	2 buah															
- Segel jangkar dia.	2"	x	2 buah															
Timah pengunci segel		x	2 buah															

No./A/C	Job Description	Keterangan																																											
	<p>coat (owner supply) epoxy paint-bituminous, and restored the strainer.</p> <p>³⁵₁₇ To be released and blow with compressed air to ensure free flowing both suction pipes and sounding pipes clogged by mud.</p> <p>³⁵₁₇ To be tested the ejector system witnessed by C/O or O/S.</p> <p>³⁵₁₇ To be dried up the chain lockers.</p> <p>³⁵₁₇ To be painted both locker floors and walls with coal tar epoxy paint (owner supply) to a height of 2 meter.</p> <p>Realisasi :</p> <p>Bak Rantai ukuran : 6 x 3 x 2 m x 2 unit (kanan kiri)</p> <ul style="list-style-type: none">- Dipompa airnya.- Dibersihkan lumpurnya.- Dibuka papan alasnya- Diketok.- Dibersihkan.- Dicat bitumastic.- Papan alas dipasang kembali	Selesai																																											
4.16	<u>Corrosion Protection</u>																																												
278001	PIC: Chief Officer																																												
288001	To be provided labour, necessary tools, ventilation, and lighting to accomplish the following works:																																												
4.16.1	<u>Aluminium Anode for Hull</u>																																												
	<p>Anode Size : 300 x 150 x 40 (B-12) bolt fit type</p> <p>Total: 54 pcs</p> <ul style="list-style-type: none">- To be erected necessary stagings at sea chests, rudder, and stern part (approx. 200 m³).- To be broken off putty covering the securing nuts. To be unbolted the nuts and removed all wasted anodes.- To be replaced all damaged stainless steel stud bolts as necessary.- To be refitted with new anodes after the surface beneath the anodes have been treated and painted.- To be cemented the bolt holes with epoxy putty.- To be covered the new installed anodes with masking tapes and same to be removed prior to undocking. <p>The position of the Aluminum Anode to be installed as detailed as follows:</p> <ul style="list-style-type: none">a. Rudder Plate both side 6 pcsb. Bilge Keel Plate (P/S), 26 pcsc. Stern area (P/S), 10 pcsd. Sea Chest, 10 pcse. Rudder Trunk 2 Pcs <p><u>Note:</u></p> <ul style="list-style-type: none">1. Anode Size: 300 x 150 x 40 (B-12) bolt fit type2. The missing bolt and nut shall be renewed with SUS Material (yard supply) and as confirmed by O/S. <p>Realisasi :</p> <p>Telah dikerjakan pembongkaran ZAP Lama sejumlah : 48 buah</p> <p>Telah dikerjakan pemasangan ZAP baru dengan posisi :</p> <table><tr><td>- Depan Sirip kanan</td><td>(S 8)</td><td>=</td><td>3 buah</td></tr><tr><td>- Depan Sirip kiri</td><td>(S 8)</td><td>=</td><td>3 buah</td></tr><tr><td>- Sirip atas kanan</td><td>(S 8)</td><td>=</td><td>7 buah</td></tr><tr><td>- Sirip atas kiri</td><td>(S 8)</td><td>=</td><td>7 buah</td></tr><tr><td>- Sirip bawah kanan</td><td>(S 8)</td><td>=</td><td>6 buah</td></tr><tr><td>- Sirip bawah kiri</td><td>(S 8)</td><td>=</td><td>6 buah</td></tr><tr><td>- Skek kanan</td><td>(S 8)</td><td>=</td><td>5 buah</td></tr><tr><td>- Skek kiri</td><td>(S 8)</td><td>=</td><td>5 buah</td></tr><tr><td>- Daun Kemudi kanan</td><td>(S 8)</td><td>=</td><td>3 buah</td></tr><tr><td>- Daun Kemudi kiri</td><td>(S 8)</td><td>=</td><td>3 buah</td></tr><tr><td>- Kotak Sea Chest</td><td>(S 8)</td><td>=</td><td>5 buah</td></tr></table>	- Depan Sirip kanan	(S 8)	=	3 buah	- Depan Sirip kiri	(S 8)	=	3 buah	- Sirip atas kanan	(S 8)	=	7 buah	- Sirip atas kiri	(S 8)	=	7 buah	- Sirip bawah kanan	(S 8)	=	6 buah	- Sirip bawah kiri	(S 8)	=	6 buah	- Skek kanan	(S 8)	=	5 buah	- Skek kiri	(S 8)	=	5 buah	- Daun Kemudi kanan	(S 8)	=	3 buah	- Daun Kemudi kiri	(S 8)	=	3 buah	- Kotak Sea Chest	(S 8)	=	5 buah
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- Daun Kemudi kiri	(S 8)	=	3 buah																																										
- Kotak Sea Chest	(S 8)	=	5 buah																																										

No./A/C	Job Description	Keterangan																																
	Total = 53 buah	Selesai																																
4.16.2	<p>Aluminium Anode for Ballast Water Tank</p> <p>Type: Clamp Fitting Type & Anode Weight 11 Kg/Pcs</p> <p>Total: 86 pcs</p> <p>- To be cropped and renewed the Anode for BWT.</p> <p>The position of the AL Anode to be installed as detailed as follows:</p> <p>a. No. 3 BWT total 10 pcs</p> <p>b. No. 4 BWT total 10 pcs</p> <p>c. No. 5 BWT total 10 pcs</p> <p>d. No. 6 BWT total 10 pcs</p> <p>e. No. 7 BWT total 10 pcs</p> <p>f. Fore Peak Tank total 6 pcs</p> <p>g. No. 1 BWT total 6 pcs</p> <p>h. No. 2 BWT total 6 pcs</p> <p>i. No. 8 BWT total 6 pcs</p> <p>All Alumunium Anodes for Hull and BWT are <u>supplied by owner</u>.</p> <p>Ganti baru aluminium anode bwt, sbb :</p> <table><tr><td>- BWT no. 1 (P/S)</td><td>x</td><td>12</td><td>buah</td></tr><tr><td>- BWT no. 2 (P/S)</td><td>x</td><td>12</td><td>buah</td></tr><tr><td>- BWT no. 6</td><td>x</td><td>10</td><td>buah</td></tr><tr><td>- BWT no. 7</td><td>x</td><td>10</td><td>buah</td></tr><tr><td>- BWT no. 8</td><td>x</td><td>6</td><td>buah</td></tr></table> <p>Asistensi</p> <table><tr><td>- Buka / tutup manhole</td><td>14</td><td>buah</td></tr><tr><td>- Cleaning spot WBT No. 6</td><td>2,3</td><td>ton</td></tr><tr><td>- Cleaning spot WBT No. 7</td><td>2,3</td><td>ton</td></tr><tr><td>- Cleaning spot WBT No. 8</td><td>2,3</td><td>ton</td></tr></table>	- BWT no. 1 (P/S)	x	12	buah	- BWT no. 2 (P/S)	x	12	buah	- BWT no. 6	x	10	buah	- BWT no. 7	x	10	buah	- BWT no. 8	x	6	buah	- Buka / tutup manhole	14	buah	- Cleaning spot WBT No. 6	2,3	ton	- Cleaning spot WBT No. 7	2,3	ton	- Cleaning spot WBT No. 8	2,3	ton	Selesai
- BWT no. 1 (P/S)	x	12	buah																															
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- Cleaning spot WBT No. 6	2,3	ton																																
- Cleaning spot WBT No. 7	2,3	ton																																
- Cleaning spot WBT No. 8	2,3	ton																																
4.16.3	<p>EM-Log (aluminum anode)</p> <p>To be fabricated as pattern and fitted one piece of EM-Log Anode by yard. 120 mm dia x 15 mm thickness c/w four 10 mm dia holes.</p>	Batal																																
5	DECK DEPARTMENT																																	
5.1	<p><u>Fresh Water Tank Cleaning</u></p> <p>PIC: Chief Officer</p> <p>To be provided labour, necessary tools, ventilation, and lighting to accomplish the following works:</p> <p>- To be opened manhole, cleaned manually, and prepared for Class Inspection the following tanks:</p> <p>Aft Peak Tank Fresh Water Tank (P) Volume : 40.56 M3</p> <p>Aft Peak Tank Fresh Water Tank (S) Volume : 48.00 M3</p> <p>No. 1 Fresh Water tank (P) Volume : 68.42 M3</p> <p>No. 1 Fresh Water tank (S) Volume : 68.42 M3</p> <p>- To be disposed to the ashore the excessive mud around 2 ton.</p> <p>- To be grinded corroded area inside of mentioned tanks.</p> <p>- To be applied touch up 2 times application by special paint (owner supply).</p> <p>- To be reinstalled manhole cover using new rubber joint and existing nuts as per O/S Instruction.</p> <p>- To be carried out hydropressure test of the manhole witnessed by C/O, upon completion of work.</p>	Batal																																
5.2	<p><u>Ballast Water Tank Cleaning</u></p> <p>PIC: Chief Officer</p> <p>To be provided labour, necessary tools, ventilation, and lighting to accomplish the following works:</p> <p>Following manhole cover to be opened / closed by shore gang and the ships C/O is requested to checked each manhole packing condition and make sure to closed all manhole cover before ballasting</p>																																	

No./A/C	Job Description	Keterangan																																																																																																																																																
	<p>or un-docking operation.</p> <table><tr><th>No</th><th>Tanks Name</th><th>Size and Type</th><th>Remarks</th><th>Quantity Manhole</th><th>Mark (Bead weld)</th></tr><tr><td>1</td><td>FPT</td><td>350 X 450 "B"</td><td>IN BOS'N ST</td><td>1</td><td>FPT</td></tr><tr><td>2</td><td>NO.1 WBT-P</td><td>350 X 450 "B"</td><td>IN BOS'N ST</td><td>1</td><td>1WB</td></tr><tr><td>3</td><td>NO.1 WBT-S</td><td>350 X 450 "B"</td><td>IN BOS'S ST</td><td>1</td><td>1WB</td></tr><tr><td>4</td><td>NO.2 WBT-P</td><td>400 X 600 "B"</td><td>NO.1 CARGO SP</td><td>2</td><td>2WB</td></tr><tr><td>5</td><td>NO.2 WBT-S</td><td>400 X 600 "B"</td><td>NO.1 CARGO SP</td><td>2</td><td>2WB</td></tr><tr><td>6</td><td>NO.3 WBT-C</td><td>400 X 600 "B"</td><td>NO.1 CARGO SP</td><td>2</td><td>2WB</td></tr><tr><td>7</td><td>NO.4 WBT-C</td><td>400 X 600 "B"</td><td>NO.1 CARGO SP</td><td>2</td><td>4WB</td></tr><tr><td>8</td><td>NO.5 WBT-C</td><td>400 X 600 "B"</td><td>NO.2 CARGO SP</td><td>2</td><td>5WB</td></tr><tr><td>9</td><td>NO.6 WBT-C</td><td>400 X 600 "B"</td><td>NO.2 CARGO SP</td><td>2</td><td>6WB</td></tr><tr><td>10</td><td>NO.7 WBT-C</td><td>400 X 600 "B"</td><td>NO.2 CARGO SP</td><td>2</td><td>7WB</td></tr><tr><td>11</td><td>NO.8 WBT-C</td><td>400 X 600 "B"</td><td>NO.1 CARGO SP</td><td>2</td><td>8WB</td></tr><tr><td>12</td><td>No.1 FWT (P)</td><td>400 X 600 "B"</td><td>NO.2 CARGO SP</td><td>2</td><td>1FW</td></tr><tr><td>13</td><td>No.1 FWT (S)</td><td>400 X 600 "B"</td><td>NO.2 CARGO SP</td><td>2</td><td>1FW</td></tr><tr><td>14</td><td>APT-P</td><td>350 X 450 "B"</td><td>IN STEER RM</td><td>3</td><td>APT</td></tr><tr><td>15</td><td>APT-S</td><td>350 X 450 "B"</td><td>IN STEER RM</td><td>3</td><td>APT</td></tr><tr><td>16</td><td>C.W.T</td><td>350 X 450 "B"</td><td>IN ENG ROOM</td><td>1</td><td>CWT</td></tr><tr><td>17</td><td>Rudder Trunk</td><td>250 X 450 "B"</td><td>IN STEER RM</td><td>1</td><td>RUDO</td></tr><tr><td colspan="6">TOTAL : 31 PCS ("A" TYPE : 100M/M COAM) ("B" TYPE: FLAT)</td></tr><tr><td colspan="6">TOTAL Ballast Capacity 2282.74 m3</td></tr></table> <p>- To be cleaned all ballast tank as mentioned above</p> <p>- To be disposed to the ashore the excessive mud around 4 tons.</p> <p>- To be grinded corroded area inside of mentioned tanks.</p> <p>- To be applied touch up 2 times application by special paint (owner supply).</p> <p>- To be reinstalled manhole cover using new rubber joint and existing nuts as per O/S Instruction.</p> <p>- To be carried out hydropressure test of the manhole witnessed by C/O, upon completion of work.</p> <p>Realisasi</p> <p>Cleaning BWT, kuras & bersihkan dalam tangki, lumpur & kotoran diangkat keluar & dibuang ke darat, sbb :</p> <table><tr><td>- FPT</td><td>cap</td><td>2 ton</td><td>1 unit</td></tr><tr><td>- BWT no. 1 (P/S)</td><td>cap</td><td>211 ton</td><td>2 unit</td></tr><tr><td>- BWT no. 2 (P/S)</td><td>cap</td><td>73 ton</td><td>2 unit</td></tr><tr><td>- BWT no. 3 (P/S)</td><td>cap</td><td>122 ton</td><td>2 unit</td></tr><tr><td>- BWT no. 4 (P/S)</td><td>cap</td><td>139.5 ton</td><td>2 unit</td></tr><tr><td>- BWT no. 5 (P/S)</td><td>cap</td><td>144.5 ton</td><td>2 unit</td></tr></table> <p>- Buka & tutup manhole</p> <p>5.3 Safety Equipment</p> <p>501010 PIC: Chief Officer</p> <p>502002 To be arranged service engineer from authorised service center and carried out routine servicing of the system</p> <p>503001 such as inspection, testing, calibration, and certificate renewal. The job scope shall include but not limited to the following:</p> <p>5.3.1 Lifeboat (P/S)</p> <p>Specification:</p> <p>Enclosed Type</p> <p>L: 5.7 M X B: 2.26 M X H: 2.8 M – Port & Starboard</p> <p>1) Both life boat transfer to work shop and carry out following work.</p> <p>(condition to be discussed with Supt before start work)</p> <p>- To be carried out annually service of lifeboat and davit by expert or company approved by maker.</p> <p>- Tobe issued certificate on completion.</p>	No	Tanks Name	Size and Type	Remarks	Quantity Manhole	Mark (Bead weld)	1	FPT	350 X 450 "B"	IN BOS'N ST	1	FPT	2	NO.1 WBT-P	350 X 450 "B"	IN BOS'N ST	1	1WB	3	NO.1 WBT-S	350 X 450 "B"	IN BOS'S ST	1	1WB	4	NO.2 WBT-P	400 X 600 "B"	NO.1 CARGO SP	2	2WB	5	NO.2 WBT-S	400 X 600 "B"	NO.1 CARGO SP	2	2WB	6	NO.3 WBT-C	400 X 600 "B"	NO.1 CARGO SP	2	2WB	7	NO.4 WBT-C	400 X 600 "B"	NO.1 CARGO SP	2	4WB	8	NO.5 WBT-C	400 X 600 "B"	NO.2 CARGO SP	2	5WB	9	NO.6 WBT-C	400 X 600 "B"	NO.2 CARGO SP	2	6WB	10	NO.7 WBT-C	400 X 600 "B"	NO.2 CARGO SP	2	7WB	11	NO.8 WBT-C	400 X 600 "B"	NO.1 CARGO SP	2	8WB	12	No.1 FWT (P)	400 X 600 "B"	NO.2 CARGO SP	2	1FW	13	No.1 FWT (S)	400 X 600 "B"	NO.2 CARGO SP	2	1FW	14	APT-P	350 X 450 "B"	IN STEER RM	3	APT	15	APT-S	350 X 450 "B"	IN STEER RM	3	APT	16	C.W.T	350 X 450 "B"	IN ENG ROOM	1	CWT	17	Rudder Trunk	250 X 450 "B"	IN STEER RM	1	RUDO	TOTAL : 31 PCS ("A" TYPE : 100M/M COAM) ("B" TYPE: FLAT)						TOTAL Ballast Capacity 2282.74 m3						- FPT	cap	2 ton	1 unit	- BWT no. 1 (P/S)	cap	211 ton	2 unit	- BWT no. 2 (P/S)	cap	73 ton	2 unit	- BWT no. 3 (P/S)	cap	122 ton	2 unit	- BWT no. 4 (P/S)	cap	139.5 ton	2 unit	- BWT no. 5 (P/S)	cap	144.5 ton	2 unit	Selesai
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No./A/C	Job Description	Keterangan
	<p>- Quick release gear to overhaul and test if class required.</p> <p>- Repaint of all over of boat shell by epoxy orange.</p> <p>- Reflective tapes (SOLAS Grade) to newly apply after painted.</p> <p>- Restore both lifeboats.</p> <p>2) To be carried out periodic servicing of launching appliance and on-load release gear as SOLAS Reg. III/20.II amended to require launching appliance a thorough examination at annual surveys by the manufacture's representative or a person appropriately trained and certified by the manufacturer.</p> <p>- A dynamic test of the winch brake at maximum lowering speed. The load to be applied shall be the mass of the lifeboat without persons on board.</p> <p>- Lifeboat on-load release gear shall be subjected to a thorough examination and operational test.</p> <p>- Oxygen bottles at lifeboat must be refill (200 Bar) and doing hydrostatic test all bottles (total 6 bottles).</p> <p>3) Both lifeboats falls wire to be renewed (last renewal : sept 2009) (Supply Owner)</p>	Batal
5.3.2	<p><u>Fixed And Portable Gas Detector Calibration</u></p> <p>- To be rechecked, calibrated, tested, and issued certificate</p> <p><u>Fixed type combustible gas alarm monitor</u></p> <p>Type: Riken Keiki Co., Ltd: Type GP-631A-3S</p> <p><u>Portable Combustible Gas Detector</u></p> <p>Type: Riken Keiki Co.Ltd, Model GP 226 : 2 set.</p> <p><u>Portable Portable Oxygen Meter</u></p> <p>Type: Toka Seiki Co.Ltd, Type TIP-OXF Serial No. 72532F : 1 set.</p> <p><u>Portable Oxygen Meter</u></p> <p>Type: Riken Fine Co.Ltd Type OX-1 Serial No. 489020001 : 1 set</p> <p><u>Portable Oxygen Meter</u></p> <p>Type: Riken Fine Co.,Ltd: Type OX-1C Serial no. 489020030 : 1 set.</p> <p><u>Personnel Multi Gas Detector</u></p> <p>Type: Riken Keiki Co.Ltd Model GX-2012 (Ex.Type B) : 1 set</p>	Batal
5.3.3	<p><u>Fire Fighting Equipment</u></p> <p>To be serviced, weighted, and tested fire fighting system.</p> <p>To be issued certificate after completed by authorized party.</p> <p>1) Co2 Fire Extinguishing system (Engine room / Cargo compressor room)</p> <p style="padding-left: 20px;">Kawasaki Safety Service Inc.</p> <p style="padding-left: 20px;">Co2 cylinders to be measured the weight and recorded.</p> <p style="padding-left: 20px;">68 liter x 35 bottles</p> <p>2) Dry Chemical powder fire extinguishing system</p> <p style="padding-left: 20px;">Kashima Co.,Ltd.</p> <p style="padding-left: 20px;">Dry chemical tank unit 700 kg x 1 set</p> <p style="padding-left: 40px;">360 kg x 1 set</p> <p style="padding-left: 20px;">N2 gas cylinder to be measured the weight and recorded.</p> <p style="padding-left: 20px;">68 liters x 5 bottles</p> <p style="padding-left: 20px;">To be checked total unit system with N2 bottles and monitor unit / Local hose reel unit</p> <p>3) Portable fire extinguisher</p> <ul style="list-style-type: none"> - Portable foam fire extinguisher : 14 Sets (5-deck / 9-engine room) - Portable dry chemical powder : 6 Sets (5-deck / 1-engine room) - Movable foam fire extinguisher : 1 set x 45 ltrs form - Stationary dry chemical powder : 1 set x 40 kg - Portable foam applicator unit : 1 set x 20 ltr x 2 sets <p>4) Breathing air apparatus</p> <p style="padding-left: 20px;">To be service and issued certificates the following items :</p> <ol style="list-style-type: none"> a. Kawasaki / Life Gem KS-8C 8.0L x 7 sets b. Spare bottle 8.0L x 20 clys c. Life Gem KS-4E 4.0L x 22 sets d. EEBD KS-2E x 8 sets 	

No./A/C	Job Description	Keterangan																																				
	<p>5) Medical Oxygen resuscitator 2.1 l x 2 cyls</p> <p>To be service, refill and issued certificate oxygen resuscitator.</p> <p>6) Fire detection equipment</p> <p>Nippon Hakuyo electronics, Ltd. Model: FF-3061D-10</p> <p>Fire alarm x 1 set.</p> <p>Opto electric Type Smoke Detector x 24 sets.</p> <p>Fixed temperature type Spot detector x 2 sets.</p> <p>To be rechecked, calibrated, tested, and issued certificate</p> <p>7) Life boats air-bottles</p> <p>50 ltr x 200 bar x 4 bottles.</p>																																					
5.4	<u>REPLATING</u>																																					
201001	<p>PIC: Technical Superintendent</p> <p>To be provided labour, necessary tools, material, and crange to accomplish the following works:</p> <p>- Areas of Replating will be determined upon Dry Docking and Intermediate Survey V commence.</p> <p>Est. 20 ton = 20,000 kg</p> <p>- Replating internal member & frame estimate 5 tons</p> <p>Notes:</p> <p>1. Steel Plates shall be grit-blasted or sand-blasted with SA 2 of standard and applied one full primer coat.</p> <p>(owner supply)</p> <p>2. Material: Mild Steel for Marine Use, IACS Certified, ($\rho = 7.85 \text{ ton/m}^3$)</p> <p>Realisasi</p> <p>REPLATING</p> <p>Replating Lambung Kiri</p> <p>Lajur D</p> <p>Fr. 27 / 28 - 28 / 29</p> <table><tr><td>Plat</td><td>700</td><td>x</td><td>1000</td><td>x</td><td>12 mm</td><td>x</td><td>1 bh</td><td></td></tr></table> <p>Diganti baru frame lambung sebelah kiri di dalam Kamar Mesin Fr. 26, ukuran :</p> <table><tr><td>Plat</td><td>150</td><td>x</td><td>360</td><td>x</td><td>10 mm</td><td>x</td><td>1 bh</td><td></td></tr></table> <p>- Asistensi bongkar pasang lantai kamar mesin</p> <table><tr><td>Plat bordes</td><td>1000</td><td>x</td><td>1000</td><td>x</td><td>6 mm</td><td>x</td><td>1 buah</td><td>(lama)</td></tr><tr><td></td><td>500</td><td>x</td><td>400</td><td>x</td><td>6 mm</td><td>x</td><td>2 buah</td><td>(lama)</td></tr></table>	Plat	700	x	1000	x	12 mm	x	1 bh		Plat	150	x	360	x	10 mm	x	1 bh		Plat bordes	1000	x	1000	x	6 mm	x	1 buah	(lama)		500	x	400	x	6 mm	x	2 buah	(lama)	Selesai
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5.5	<u>Forecastle Deck</u>																																					
432001	PIC: Chief Officer																																					
434001	<p>To be provided labour, necessary tools, material, and crange to accomplish the following works:</p> <p>- Renew hawser pipe anchor chain Port & Starboard, 2 x 3.7 m x(t.10 mm), Dia. 54 cm</p> <p>- Renew Forecastle air duck vent. Size : A125 X 1100 mm and elbow 90° X 2 Sch.40</p> <p>- Renew support cable blower forecastle. Plat strip Size 25mm X 3mm X 50 mm.</p> <p>- Renew ralling forecastle (galvanice pipe) Size : A25 X 5670 mm.</p> <p>- Renew wire (labrang) for pillar foward</p> <p>Size wire : 24mm x 9.6 mtr X 1</p> <p>Size wire : 24mm x 10.7 mtr X 1</p> <p>Size wire : 24mm x 10.8 mtr X 1</p> <p>- Renew Dry Chemical hose unit pipe line size : A32 X 90 mm and flange 1</p> <p>Material :</p> <p>Double Nipple 1 1/4"</p> <p>Water Mur 1 1/4"</p> <p>Elbow (Internal Screw) 1 1/4":</p> <p>Flange 5K x 1 1/2"</p> <p>Packing</p> <p>Bolt & Nut : 1/2" x 2 1/2"</p> <p>Reducer : 1 1/2" to 1 1/4"</p> <p>Pipe Sch. 40 x 1 1/4" x 500 [mm]</p>																																					

No./A/C	Job Description						Keterangan
	- Renew rubber packing locker dry chemical hose unit's door . - Welding/Repair anchor stopper P/S. - Renew winch cooling pipe line diam. 2.5 inch x 11500 mm sch 40. - Renew pipe ballast FPT ventilation port side. Size : A125 X 6000 mm X 2 Size : Elbow 45° X 2 Size : Elbow 90° X 2 - Forecastle Eductor pipe Size : A50 X 1000mm, A32 X 2000mm, Elbow 90° X 1 - Support foundation catwalk Angle bar(besi siku) size :100mm x100mm x10mm Size :250mm X 2						
	Realisasi						
	Dipasang baru doubling urlup jangkar, ukuran :)
	Kiri)
	Plat dipress	730	x	1530 x	8 mm	x 1 bh)
	Kanan)
	Plat dipress	700	x	1530 x	8 mm	x 1 bh	) Selesai
	Ganti baru pipa udara FPT Forecastle deck, sbb :)
	- Pipa sch.80 dia.	4"	x	100 mm	x	1 buah)
	- Pipa sch.80 dia.	4"	x	600 mm	x	1 buah)
	- Pipa sch.80 dia.	4"	x	1800 mm	x	1 buah)
	- Elbow dia	4"	x	2 buah)
	- Ubolt dia	4"	x	1 buah)
	- Pipa sch.80 dia.	5"	x	100 mm	x	2 buah)
	- Lubang dia	5"	x	1 buah)
	- Doubling)
	Plat dia	170	x	10 mm x	1 buah)
	- Pipa sch.80 dia.	4"	x	100 mm	x	1 buah)
	- Pipa sch.80 dia.	4"	x	650 mm	x	1 buah)
	- Pipa sch.80 dia.	4"	x	250 mm	x	1 buah)
	- Elbow dia	4"	x	2 buah)
	- Ubolt dia	4"	x	1 buah)
	- Pipa sch.80 dia.	5"	x	100 mm	x	2 buah	) Selesai
	Pondasi kabel tie blower depan forecastle, plat ukuran :)
	- 550	x	50 x	6 mm x	1 buah		) Selesai
	- Pasang klem kabel				4 buah)
	- Ganti baut terminal block uk. M6 x 25				4 buah)
	Railing forecastle, pipa ukuran :)
	- Pipa sch.40 dia.	1 1/4"	x	400 mm	x	1 buah)
	- Pipa sch.40 dia.	1 1/4"	x	560 mm	x	1 buah)
	- Pipa sch.40 dia.	1 1/4"	x	1400 mm	x	2 buah)
	- Pipa sch.40 dia.	1 1/4"	x	1150 mm	x	2 buah	) Selesai
	Ganti baru pipa Dry Chemical di Forecastle, sbb :)
	- Pipa sch.80 dia.	1 1/2"	x	100 mm	x	1 buah)
	- Flange dia.	1 1/2"	x	1 buah)
	- Pipa sch.80 dia.	1"	x	250 mm	x	1 buah)
	- Elbow dia	1"	x	1 buah)

No./A/C	Job Description							Keterangan
	- Packing karet dia		x	3 mm	x	1	buah	Selesai
	- Mur baut dia	5/8"	x	2"	x	4	buah	
	- Doubling deck							
	Plat dia	150	x	12	mm x	1	buah	
	- Ubolt dia	2"	x		1 buah			
	Service stopper jangkar kanan kiri (2 unit), sbb :							
	- Pasang as rantai stopper jangkar							Selesai
	As dia	1"	x	250 mm		x	2 buah	
	- Las ulang sepanjang							
	> 100 mm x 35 layer							
	> 60 mm x 20 layer							
	Bongkar ganti baru pipa udara FPT							
	Posisi Kiri							
	- Pipa sch.80 dia.	5"	x	450 mm		x	1 buah	
	- Pipa sch.80 dia.	5"	x	1500 mm		x	1 buah	
	- Pipa sch.80 dia.	5"	x	2000 mm		x	1 buah	
	- Pipa sch.80 dia.	5"	x	200 mm		x	2 buah	
	- Flange dia.	5"	x	5 buah				
	- Ubolt dia	5"	x	2 buah				
	- Pipa sch.80 dia.	6"	x	150 mm		x	2 buah	
	- Elbow dia	6"	x	2 buah				
	- Packing karet dia		x	3 mm	x	4	buah	
	- Mur baut dia	5/8"	x	2"	x	24	buah	
	- Doubling deck							
	Plat dia	300	x	10	mm x	1	buah	
	Asistensi :							
	Bongkar pasang : (material lama)							
	- Pipa sch.80 dia.	5"	x	350 mm		x	1 buah	
	- Pipa sch.80 dia.	5"	x	150 mm		x	1 buah	
	- Flange dia.	5"	x	3 buah				
	- Air vent head dia	5" - 5 K	x	1 buah				
	- Ubolt dia	5"	x	2 buah				
	- Pipa sch.80 dia.	3"	x	250 mm		x	1 buah	
	- Flange dia.	3"	x	1 buah				
	- Tutup pipa dia	3"	x	12	mm x	1	buah	
	- Packing karet dia		x	3 mm	x	3	buah	
	- Mur baut dia	5/8"	x	2"	x	20	buah	
	- Fit up pipa							Selesai
	Posisi Depan (C)							
	- Pipa sch.80 dia.	5"	x	1500 mm		x	1 buah	
	- Pipa sch.80 dia.	5"	x	1300 mm		x	1 buah	
	- Pipa sch.80 dia.	5"	x	400 mm		x	2 buah	
	- Elbow dia	5"	x	2 buah				
	- Pipa sch.80 dia.	6"	x	150 mm		x	2 buah	
	- Flange dia.	6"	x	4 buah				
	- Packing karet dia		x	3 mm	x	2	buah	
	- Mur baut dia	5/8"	x	2"	x	16	buah	
	Asistensi :							
	Bongkar pasang : (material lama)							
	- Pipa sch.80 dia.	5"	x	350 mm		x	1 buah	
	- Pipa sch.80 dia.	5"	x	150 mm		x	1 buah	

No./A/C	Job Description										Keterangan		
5.6 269001 534016	- Flange dia.	5"	x	3 buah)	Selesai	
	- Air vent head dia	5" - 5 K	x	1 buah)		
	- Ubolt dia	5"	x	2 buah)		
)		
	- Pipa sch.80 dia.	3"	x	250 mm	x	1 buah)		
	- Flange dia.	3"	x	1 buah)		
	- Tutup pipa dia	3"	x	12 mm	x	1 buah)		
	- Packing karet dia		x	3 mm	x	3 buah)		
	- Mur baut dia	5/8"	x	2"	x	20 buah)		
	- Fit up pipa)		
	Ganti baru pipa eductor, sbb :)
	- Pipa sch.40 dia.	2 1/2"	x	500 mm	x	1 buah)		
	- Pipa sch.40 dia.	2 1/2"	x	400 mm	x	1 buah)		
	- Elbow dia	2 1/2"	x	1 buah)		
	- Sock dia	3"	x	2 buah)		
)		
	- Pipa sch.80 dia.	1 1/2"	x	2000 mm	x	1 buah)		
	- Sock dia	2"	x	2 buah)		
	- Ubolt dia	1 1/2"	x	1 buah)		
	Ganti baru pondasi tangga catwalk Forecastle dan Poop Deck, sbb :)	
	- Besi siku	100 + 100	x	150	x	10 mm	4 buah)	
	- Besi siku	80 + 80	x	150	x	8 mm	4 buah)	
	- Buat lubang					Ø 20 mm	4 buah)	
	- Mur baut	5/8"	x	2"			4 buah)	
	5.6 Main Deck and Cargo Tank No. 1 - No. 2 Area												
	PIC: Chief Officer												
	To be provided labour, necessary tools, material, and crane to accomplish the following works:												
	5.6.1. STARBOARDSIDE												
	1	- Check and Repair WBT No. 1 S head of ventilation : 2 set										Estimasi valve dia. 5"	
	<u>Renew air pipe</u>												
	Pipe Sch. 40 = Ø 5" x 300 [mm]												
	Bolt & Nut = Ø 5/8"												
	Flange 5" 5K												
	Packing												
	2	- Check and Repair WBT No. 2 S head of ventilation.: 2 set										Estimasi valve dia. 5"	
	3	- Renew sounding pipe WBT No.1S,2S,3S,5S,7S,8C size. Diam. 2 inch x L 9600 mm.											
	4	- Check and service vent head of WBT No.3/C : 2 sets										Estimasi dia. 4"	
	<u>Renew air pipe</u>												
	Pipe Sch. 40 = Ø 3" x 600 [mm]												
	Flange 3" 5K												
Bolt & Nut													
Packing													
5	- Check and serve vent head of WBT No. 4/C.: 2 set										Estimasi dia. 4"		
6	- Renew vapour pipe line manifold starboardside size : diam. 6 inch x 4000mm.												
7	- Check and Repair vent head BWT No 5C/S = 2 sets										Estimasi dia. 4"		
<u>Renew air pipe</u>													
Pipe Sch. 40 = Ø 4" x 600 [mm] x 2 Unit													
Flange 4" 5K													
Bolt & Nut													
Packing													
8	- Check and Repair vent head BWT no. 6C/S = 2 sets.										Estimasi dia. 4"		
<u>Renew air pipe</u>													
Pipe Sch. 40 = Ø 3" x 600 [mm]													
Flange 3" 5K													

No./A/C	Job Description										Keterangan
9	<div>Bolt & Nut</div> <div>Packing</div> <div>Pipe Sch. 40 = Ø 4" x 600 [mm]</div> <div>Flange 4" 5K</div> <div>Bolt & Nut</div> <div>Packing</div> <div>- Check and Repair vent head BWT No. 7C/S = 2 sets.</div> <div><i>Estimasi dia. 4"</i></div> <div><u>Renew air pipe</u></div> <div>Pipe Sch. 40 = Ø 4" x 600 [mm]</div> <div>Flange 4" 5K</div> <div>Bolt & Nut</div> <div>Packing</div>										
10	<div>- Check and Repair vent head BWT No. 8C/S = 2 sets.</div> <div><i>Estimasi dia. 4"</i></div>										
11	<div>- Repair portable gangway ladder = 1 set.</div>										
	Realisasi										
	Ganti baru pipa udara BWT No. 3 kanan, sbb :)
	- Pipa sch.80 dia.	3"	x	700 mm	x	4 buah)		
	- Pipa sch.80 dia.	3"	x	200 mm	x	4 buah)		
	- Flange dia.	3"	x	12 buah)		
	- Sock dia	4"	x	4 buah)		
	- Air vent head dia	3"	x	4 buah)		
	- Packing karet dia	3"	x	5 mm	x	8 buah)		
	- Mur baut dia	5/8"	x	2 1/2"	x	32 buah			)	Selesai
	Service air vent head BWT No. 4 kanan)
	- Air vent head dia	3"	x	3 buah	(lama))		
	- Plat ventilasi	150x110	x	4 buah	(supply dock))		
	- Saringan	110 x 50	x	4 buah	(supply dock))		
	- Packing karet dia	3"	x	5 mm	x	3 buah	(lama))		
	- Mur baut dia	5/8"	x	2 1/2"	x	12 buah	(lama)		)	Selesai
	Ganti baru pipa udara BWT No. 5 kanan, sbb :)
	- Pipa sch.80 dia.	4"	x	560 mm	x	2 buah)		
	- Pipa sch.80 dia.	4"	x	200 mm	x	2 buah)		
	- Flange dia.	4"	x	6 buah)		
	- Sock dia	5"	x	2 buah)		
	- Air vent head dia	4"	x	2 buah)		
	- Packing karet dia	4"	x	5 mm	x	4 buah)		
	- Mur baut dia	5/8"	x	2 1/2"	x	32 buah)		
	- Pipa sch.80 dia.	4"	x	700 mm	x	2 buah)		
	- Pipa sch.80 dia.	4"	x	200 mm	x	2 buah)		
	- Flange dia.	4"	x	6 buah)		
	- Sock dia	5"	x	2 buah)		
	- Air vent head dia	4"	x	2 buah)		
	- Packing karet dia	4"	x	5 mm	x	4 buah)		
	- Mur baut dia	5/8"	x	2 1/2"	x	32 buah			)	Selesai
	Ganti baru pipa udara BWT No. 6 kanan, sbb :)
	- Pipa sch.80 dia.	5"	x	700 mm	x	1 buah)		
	- Pipa sch.80 dia.	5"	x	200 mm	x	1 buah)		
	- Flange dia.	5"	x	3 buah)		
	- Sock dia	6"	x	1 buah)		
	- Air vent head dia	5"	x	1 buah)		
	- Packing karet dia	5"	x	5 mm	x	2 buah)		
	- Mur baut dia	5/8"	x	2 1/2"	x	16 buah			)	Selesai
	Service air vent head BWT No. 7 kanan)

No./A/C	Job Description										Keterangan
	- Air vent head dia	4"	x	3 buah	(lama))			
	- Plat ventilasi	1500x170	x	6 buah	(supply dock))			
	- Saringan	50 x 30	x	6 buah	(supply dock))			
	- Packing karet dia	4"	x	5 mm	x	3 buah	(lama))			
	- Mur baut dia	5/8"	x	2 1/2"	x	24 buah	(lama)	)	Selesai		
5.6.2	PORTSIDE										
1	- Check and Renew support valve 3C Port side.										
2	- Check and Repair WBT No. 1 P head of ventilation : 2 set				<i>Estimasi valve dia. 5"</i>						
3	- Check and Repair WBT No. 2 P head of ventilation.: 2 set				<i>Estimasi valve dia. 5"</i>						
4	- Renew sounding pipe WBT No.1P,2P,3P,4C,5P,6P,7P size. Diam. 2 inch x L 9600 mm.										
5	- Check and service vent head of WBT No.3C/ P : 2 sets				<i>Estimasi dia. 4"</i>						
	<u>Renew air pipe</u>										
	Pipe Sch. 40 = Ø 4" x 300 [mm]										
	Flange 4" 5K										
	Bolt & Nut										
	Elbow 4" sch 40 (90°)										
	Packing										
6	- Check and service vent head of WBT No. 4C/ P.: 2 set				<i>Estimasi dia. 4"</i>						
7	- Check and Repair vent head BWT No 5C/ P = 2 sets				<i>Estimasi dia. 4"</i>						
	<u>Renew air pipe</u>										
	Pipe Sch. 40 = Ø 4" x 600 [mm]										
	Flange 4" 5K										
	Bolt & Nut										
	Packing										
8	- Check and Repair vent head BWT no. 6C/ P = 2 sets.				<i>Estimasi dia. 4"</i>						
	<u>Renew air pipe</u>										
	Pipe Sch. 40 = Ø 3" x 600 [mm]										
	Flange 3" 5K										
	Bolt & Nut										
	Packing										
9	- Check and Repair vent head BWT No. 7C/ P = 2 sets.				<i>Estimasi dia. 4"</i>						
	<u>Renew air pipe</u>										
	Pipe Sch. 40 = Ø 3" x 600 [mm]										
	Flange 3" 5K										
	Bolt & Nut										
	Packing										
	Pipe Sch. 40 = Ø 4" x 600 [mm]										
	Flange 4" 5K										
	Bolt & Nut										
	Packing										
10	- Check and Repair vent head BWT No. 8C/ P = 2 sets.				<i>Estimasi dia. 4"</i>						
	Realisasi										
	Ganti baru pipa udara BWT No. 3 kiri, sbb :)
	- Pipa sch.80 dia.	4"	x	500 mm	x	1 buah)			
	- Flange dia.	4"	x	2 buah	(lama))			
	- Air vent head dia	4"	x	1 buah	(lama))			
	- Pipa sch.80 dia.	2 1/2"	x	100 mm	x	1 buah)			
	- Elbow dia	2 1/2"	x	1 buah)			
	- Flange dia.	2 1/2"	x	2 buah	(lama))			
	- Lubang dia	2 1/2"	x	1 buah)			
	- Packing karet dia	2 1/2"	x	5 mm	x	4 buah	(lama))			
	- Mur baut dia	5/8"	x	2"	x	24 buah	(lama)	)	Selesai		
	Service air vent head BWT no. 5 kiri)
	- Pipa sch.80 dia.	4"	x	500 mm	x	1 buah)			
	- Flange dia.	4"	x	2 buah	(lama))			
	- Air vent head dia	4"	x	1 buah	(lama))			

No./A/C	Job Description								Keterangan
	- Packing karet dia	4"	x	5 mm	x	4	buah	(lama))
	- Mur baut dia	5/8"	x	2"	x	16	buah	(lama)	) Selesai
	Service air vent head BWT no. 6 & 7 kiri)
	- Pipa sch.80 dia.	3"	x	550 mm	x	2	buah)
	- Flange dia.	3"	x	4 buah				(lama))
	- Air vent head dia	3"	x	2 buah				(lama))
	- Packing karet dia	3"	x	5 mm	x	4	buah	(lama))
	- Mur baut dia	5/8"	x	2"	x	16	buah	(lama)	) Selesai
5.6.3.	CARGO TANK AREA								
1	- Renew plate clamp for rubber circumference doom cargo tank								
	- Dismantle plate clamp for rubber circumference doom cargo tank								
	- Dismantle rubber circumference doom cargo tank								
	- Plate 400 mm x circumference 2 cargo tanks estimate 180 m x thickness 10 mm								
	- Renew bolt&nut circumference 2 cargo tanks	Est. Uk. dia. 32.5 x 160 : 48 Buah (Material S45C)							
	- Reinstall rubber circumference doom cargo tank	Estimasi							
2	- Renew sampling pipe line COT no. 1 & no. 2, diam. 36 mm x 7000 mm.= 2 Sets Sch 80								
3	- Calibrated and renew packing (inside) slip tube COT No. 1 & No. 2 = 24 sets								
4	- Check and Calibrated Digital sounding COT No.1 & no. 2 = 2 unit.								
5	- Renew grating catwalk size 1000 mm x 720 mm = 49 Pcs								
6	- Renew grating catwalk of COT no.1 and no.2 size 1250 mm x 400 mm.=2 pcs								
7	- Renew grating catwalk front of COT no. 1 size 1570 mm x 400 mm.								
8	- Renew grating catwalk front of COT no. 1 size 790 mm x 400 mm.								
9	- Renew grating catwalk front of COT no. 1 size 1320 mm x 400 mm.								
10	- Renew grating catwalk front of COT no. 1 size 1750 mm x 1000 mm.								
11	- Renew grating catwalk front of COT no. 1 size 1000 mm x 900 mm.								
	* 1000 x 700								
	* 1500 x 400								
	* 700 x 800								
	* 1000 x 1200								
	* Klem grating								
	Realisasi								
	Replating grating catwalk Forecastle Deck ke Poop Deck, plat grating ukuran :)
	- 900	x	700 x	30	mm x	12	buah)
	- List)
	900	x	30 x	6	mm x	24	buah)
	- 1580	x	400 x	30	mm x	1	buah)
	- List)
	1580	x	30 x	6	mm x	2	buah)
	- 800	x	400 x	30	mm x	1	buah)
	- List)
	800	x	30 x	6	mm x	2	buah)
	- 1000	x	1000 x	30	mm x	1	buah)
	- List)
	1000	x	30 x	6	mm x	2	buah)
	- 1330	x	400 x	30	mm x	1	buah)
	- List)
	1330	x	30 x	6	mm x	2	buah)
	- 1080	x	1000 x	30	mm x	1	buah)
	- List)
	1080	x	30 x	6	mm x	2	buah		) Selesai
	- Dipasang baru klem grating			(material supply dock)		60	pcs		) Selesai

No./A/C	Job Description	Keterangan
12	- Check, test and calibrated Alarm release tank above COT no. 2.	
13	<p>- Renew emergency shower pipe line for cargo</p> <p>Size : 1.5 inc x 500mm = 52 pcs 3.0 inc x 16000mm = 4 pcs 3.0 inc x 4500 mm = 2 pcs and elbow 45°x4 3.0 inc x 8000 mm = 2 pcs and elbow 90°x8,45°x6 1.5 inc x 10000 mm and elbow 90°x3, 45°x1</p> <p>Pipe Sch. 40 = Ø 1 1/2" x 600 [mm] x 52 Pipe Sch. 40 = Ø 2 1/2" x 20000 [mm] x 4 Pipe Sch. 40 = Ø 2 1/2" x 5000 [mm] x 2 Pipe Sch. 40 = Ø 2 1/2" x 6200 [mm] x 1 Pipe Sch. 40 = Ø 1 1/2" x 5000 [mm] x 1 Pipe Sch. 40 = Ø 1 1/2" x 6000 [mm] x 1 Pipe Sch. 40 = Ø 3" x 8000 [mm] x 2 Pipe Sch. 40 = Ø 2 1/2" x 4000 [mm] x 1 Pipe Sch. 40 = Ø 1 1/2" x 4000 [mm] x 1 Elbow 90° 2 1/2" 5K Reducer 2 1/2" to 1 1/2" Flange 2 1/2" 5K Bolt & Nut Packing</p>	
14	<p>- Renew sea water shower pipe line for cargo</p> <p>Size : 2.0 inc x 16000mm = 4 pcs 2.0 inc x 4000 mm = 2 pcs and elbow 45°x4 2.0 inc x 8000 mm = 2 pcs and elbow 90°x4,45°x6</p> <p>Pipe Sch. 40 = Ø 2" x 19000 [mm] x 4 Pipe Sch. 40 = Ø 2" x 4500 [mm] x 2 Pipe Sch. 40 = Ø 2" x 9000 [mm] x 2 Elbow 90° 2" sch 40 Flange 5K 2" Bolt & Nut Packing</p>	
15	- Check, test and calibrated Emergency Stop Device = 3 sets (Above COT no.1 & no. 2 and manifold).	
16	- New install Emergency Eyewash & Drench showers Combination, type free standing,	
17	fresh water supply 1-1/4 inch with Pipe line diam. 1-1/4 inch x 35000 mm.	
18	- Repair CARGO LEVEL MONITORING COT NO.1	
18	<p>Material for cargo piping:</p> <p>Cargo pipe : low carbon steel pipes for pressure service to be classed by the Society. KSTPG 38 (KLPB For REHEATER)</p> <p>Flanges : Carbon steel forgings to be classed by the society. KSF 45 (KLFB for REHEATER)</p> <p>valves : Carbon steel casting classed by the society.KSC 49 and SCPF2 (less then 3") (KLCB/SCPL For Reheater)</p> <p>Gasket : NON ASBEST (V-7020)</p> <p>cargo piping system shall be designed according to the followings.</p> <p>Liquid line :0° C 20kg/cm2g (-45°C for piping system associated REHEATER)</p> <p>Vapour line :0° C 20kg/cm2g</p> <p>A. Renew Cargo liquid and vapour pipe tank no.1 Pipa seamless sch. 80</p> <p>- 20K 150 =1000 cm x1 Elbow 90° x3 Flange x3 T pipe x1 - 20K 150 =500 cm x1 Flange x2 Renew Cargo vapour pipe tank no.1</p>	

No./A/C	Job Description	Keterangan
	<p>- 20K125 = 110 cm x1 Elbow 90° x1 Flange x3 T pipe x1</p> <p>- 20K125 = 500 cm x1 Elbow 90° x1 Flange x3 T pipe x1</p> <p>B. Renew Cargo liquid and vapour pipe tank no.2</p> <p>- 20K150 = 500 cm x3 Flange x6</p> <p>- 20K150 = 240 cm x1 Elbow 90° x1 Flange x2 T pipe x1 Reducer 20K150 to 20K100 x1</p> <p>- 20K100 = 280 cm x1 Elbow 90° x1 Elbow 45° x1 Flange x1</p> <p>- 1.5' inch = 200 cm x1 Elbow 90° x1 Flange x2</p> <p>Renew Cargo vapour pipe tank no.2</p> <p>- 20K125 = 110 cm x1 Elbow 90° x1 Flange x3 T pipe x1</p> <p>- 20K100 = 310 cm x1 Elbow 90° x1 Elbow 45° x1 Flange x2</p> <p>- 20K100 = 550 cm x1 flange x2</p> <p>C. Renew Cargo liquid and vapour pipe Manifold.</p> <p>- 20K200 = 300 cm x1 Reducer 20K200 to 20K150 x2 Flange x3</p> <p>- 20K200 = 900 cm x1 20K150 = 50 cm x1 T pipe 20K200 x1 T pipe 20K200 to 20K150 x1 Flange 20K200 x3 Flange 20K150 x1</p> <p>Renew Cargo liquid from manifold to reheater</p> <p>- 20K150 = 200 cm x1 Elbow 90° x2 Flange x2</p> <p>- 20K150 = 500 cm x1 Elbow 45° x1 Flange x2</p> <p>Renew Cargo vapour manifold</p> <p>- 20K125 = 320 cm x2 T pipe x1 x2 Elbow 90° x1 x2 Elbow 45° x2 x2 Flange x3 x2</p> <p>- 1.5' inch = 30cm x2 Flange x2 x2</p>	

No./A/C	Job Description						Keterangan
19	- 20K125 = 1000 cm x1 T pipe x2 Flange x2 Renew Reheater Sea Water pipe Pipe Sch. 40 x 8" x 3200 [mm] Elbow sch 40 x 8" Flange 8" 5K Shock Sleeves Ø 8" Bolt & Nut Packing Realisasi Ganti baru pipa Emergency shower COT kanan kiri, sbb : Kanan						
	- Pipa sch.40 dia.	2 1/2"	x	6000 mm	x	2 buah)
	- Pipa sch.40 dia.	2 1/2"	x	2800 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	4480 mm	x	1 buah)
	- Flange dia.	2 1/2"	x	8 buah)
	- Plat prop dia	2 1/2"	x	10 mm x	2	buah)
	- Lubang dia	2 1/2"	x	8 buah)
	- Ubolt dia	2 1/2"	x	8 buah)
	- Pipa sch.40 dia.	2 1/2"	x	250 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	100 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	1690 mm	x	1 buah)
	- Elbow dia	2 1/2"	x	1 buah)
	- Flange dia.	2 1/2"	x	3 buah)
	- Plat prop dia	2 1/2"	x	10 mm x	2	buah)
	- Lubang dia	2 1/2"	x	13 buah)
	- Packing karet dia.		x	3 mm	x	7 buah)
	- Mur baut dia.	5/8"	x	2 1/2" x	28 buah)
	- Pipa sch.40 dia.	1 1/2"	x	560 mm	x	13 buah)
	- Elbow dia	1 1/2"	x	15 buah)
	- Sock dia	2"	x	15 buah)
	- Double neple dia	1 1/2"	x	13 buah)
	- Nozzle drat dia	1 1/2"	x	10 buah	(lama))
	- Water mur dia	1 1/2"	x	10 buah)
	- Elbow dia	1 1/2"	x	16 buah)
	- Double neple dia	1 1/2"	x	16 buah)
	- Nozzle drat dia	1 1/2"	x	8 buah	(lama))
	- Water mur dia	1 1/2"	x	8 buah)
	- Pipa sch.40 dia.	2"	x	4200 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	360 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	3680 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	300 mm	x	1 buah)
	- Flange dia.	2"	x	6 buah)
	- Plat prop dia	2"	x	10 mm x	2	buah)
	- Nozzle drat dia	1 1/2"	x	6 buah	(lama))
	- Ubolt dia	2"	x	3 buah)
	- Packing karet dia.		x	3 mm	x	4 buah)
	- Mur baut dia.	1/2"	x	2" x	16 buah)
	- Pipa sch.40 dia.	2 1/2"	x	6000 mm	x	2 buah)
	- Pipa sch.40 dia.	2 1/2"	x	2810 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	4500 mm	x	1 buah)
	- Flange dia.	2 1/2"	x	8 buah)

No./A/C	Job Description						Keterangan
	- Plat prop dia	2 1/2"	x	10 mm x	2	buah)
	- Lubang dia	2 1/2"	x	8 buah)
	- Pipa sch.40 dia.	2 1/2"	x	300 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	100 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	1670 mm	x	1 buah)
	- Elbow dia	2 1/2"	x	1 buah)
	- Flange dia.	2 1/2"	x	3 buah)
	- Ubolt dia	2 1/2"	x	8 buah)
	- Packing karet dia.		x	3 mm	x	7 buah)
	- Mur baut dia.	5/8"	x	2 1/2" x	28 buah)
	- Pipa sch.40 dia.	1 1/2"	x	560 mm	x	13 buah)
	- Elbow dia	1 1/2"	x	15 buah)
	- Double neple dia	1 1/2"	x	15 buah)
	- Nozzle drat dia	1 1/2"	x	10 buah	(lama))
	- Water mur dia	1 1/2"	x	10 buah)
	- Elbow dia	1 1/2"	x	16 buah)
	- Double neple dia	1 1/2"	x	16 buah)
	- Nozzle drat dia	1 1/2"	x	8 buah	(lama))
	- Water mur dia	1 1/2"	x	8 buah)
	- Lubang dia	2 1/2"	x	14 buah)
	- Pipa sch.40 dia.	3"	x	100 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	50 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	1200 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	1570 mm	x	1 buah)
	- Elbow dia	3"	x	2 buah)
	- Flange dia.	3"	x	2 buah)
	- Sock dia	4"	x	2 buah)
	- Pipa sch.40 dia.	3"	x	1560 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	630 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	1260 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	300 mm	x	1 buah)
	- Elbow dia	3"	x	3 buah)
	- Flange dia.	3"	x	3 buah)
	- Sock dia	4"	x	2 buah)
	- Ubolt dia	3"	x	2 buah)
	- Packing karet dia.		x	3 mm	x	3 buah)
	- Mur baut dia.	5/8"	x	2 1/2" x	16 buah)
	- Pipa sch.40 dia.	3"	x	130 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	70 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	1200 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	1570 mm	x	1 buah)
	- Elbow dia	3"	x	2 buah)
	- Flange dia.	3"	x	2 buah)
	- Sock dia	4"	x	2 buah)
	- Pipa sch.40 dia.	3"	x	1550 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	610 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	1070 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	260 mm	x	1 buah)
	- Elbow dia	3"	x	3 buah)
	- Flange dia.	3"	x	3 buah)
	- Sock dia	4"	x	2 buah)
	- Ubolt dia	3"	x	2 buah)

No./A/C	Job Description						Keterangan
	- Packing karet dia.	x	3 mm	x	3 buah)
	- Mur baut dia.	5/8" x	2 1/2" x	16 buah			) Selesai
	Bongkar pipa Emergency Shower COT lama, sbb ")
	- Pipa sch.40 dia.	2 1/2"	x	1500 mm	x	3 buah (lama))
	- Pipa sch.40 dia.	2 1/2"	x	1570 mm	x	2 buah (lama))
	- Pipa sch.40 dia.	2 1/2"	x	2100 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	2 1/2"	x	1550 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	2 1/2"	x	1680 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	2 1/2"	x	260 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	2 1/2"	x	6000 mm	x	4 buah (lama))
	- Pipa sch.40 dia.	2 1/2"	x	2800 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	2 1/2"	x	4480 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	2 1/2"	x	2810 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	2 1/2"	x	4500 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	2 1/2"	x	2000 mm	x	2 buah (lama))
	- Pipa sch.40 dia.	2"	x	4200 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	2"	x	4500 mm	x	1 buah (lama)	) Selesai
	- Pipa sch.40 dia.	1 1/4"	x	600 mm	x	26 buah (lama))
	- Elbow drat dia	1 1/4"	x	52 buah	(lama))
	- T drat dia	1 1/4"	x	26 buah	(lama))
	- Sock drat dia	1 1/4"	x	26 buah	(lama))
	- Lubang dia	1 1/4"	x	26 buah	(lama))
	- Nozzle srpay dia	1 1/4"	x	52 buah	(lama))
	- Seal tape	1 1/4"	x	26 buah	(lama)		) Selesai
	Bongkar pasang & service shower COT depan belakang, sbb :)
	- Nozzle dia	1 1/2"	x	36 buah)
	- Elbow dia	1 1/2"	x	72 buah)
	- Double neple dia	1 1/2"	x	58 buah			) Selesai
	Kiri)
	- Pipa sch.40 dia.	1 1/4"	x	4800 mm	x	1 buah)
	- Elbow dia	1 1/4"	x	1 buah)
	- Flange dia.	1 1/4"	x	2 buah)
	- Flange prop dia.	1 1/4"	x	1 buah)
	- Pipa sch.40 dia.	1 1/4"	x	400 mm	x	1 buah)
	- Pipa sch.40 dia.	1 1/4"	x	2250 mm	x	1 buah)
	- Elbow dia	1 1/4"	x	1 buah)
	- Flange dia.	1 1/4"	x	2 buah)
	- Pipa sch.40 dia.	1 1/4"	x	2100 mm	x	1 buah)
	- Pipa sch.40 dia.	1 1/4"	x	350 mm	x	1 buah)
	- Pipa sch.40 dia.	1 1/4"	x	250 mm	x	1 buah)
	- Elbow dia	1 1/4"	x	2 buah)
	- Flange dia.	1 1/4"	x	2 buah)
	- Butterfly valve dia	1 1/4"	x	1 buah	(lama)	service)
	- Pipa sch.40 dia.	2 1/2"	x	50 mm	x	1 buah)
	- Flange dia.	2 1/2"	x	1 buah)
	- Reducer dia	1 1/4" - 2"	x	1 buah)
	- Pipa sch.40 dia.	1 1/4"	x	200 mm	x	1 buah)
	- Flange dia.	1 1/4"	x	1 buah)

No./A/C	Job Description						Keterangan
	- Pipa sch.40 dia.	2 1/2"	x	1750 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	720 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	50 mm	x	2 buah)
	- Pipa sch.40 dia.	2 1/2"	x	1800 mm	x	1 buah)
	- Elbow dia	2 1/2"	x	4 buah)
	- Flange dia.	2 1/2"	x	2 buah)
)
	- Pipa sch.40 dia.	2 1/2"	x	6000 mm	x	1 buah)
	- Flange dia.	2 1/2"	x	2 buah)
)
	- Pipa sch.40 dia.	2 1/2"	x	2850 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	150 mm	x	1 buah)
	- Flange dia.	2 1/2"	x	2 buah)
	- Lubang dia	2 1/2"	x	1 buah)
)
	- Pipa sch.40 dia.	2 1/2"	x	2200 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	210 mm	x	1 buah)
	- Elbow dia	2 1/2"	x	1 buah)
	- Flange dia.	2 1/2"	x	2 buah)
)
	- Pipa sch.40 dia.	2 1/2"	x	6000 mm	x	1 buah)
	- Flange dia.	2 1/2"	x	2 buah)
)
	- Pipa sch.40 dia.	2"	x	4500 mm	x	1 buah)
	- Flange dia.	2"	x	2 buah)
)
	- Pipa sch.40 dia.	2"	x	300 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	1400 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	2920 mm	x	1 buah)
	- Flange dia.	2"	x	2 buah)
	- Flange dia.	2 1/2"	x	1 buah)
	- Reducer dia	2"- 2 1/2"	x	1 buah)
	- Lubang dia	2"	x	1 buah)
)
	- Pipa sch.40 dia.	2 1/2"	x	6000 mm	x	2 buah)
	- Flange dia.	2 1/2"	x	4 buah)
)
	- Pipa sch.40 dia.	2 1/2"	x	2800 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	160 mm	x	1 buah)
	- Flange dia.	2 1/2"	x	3 buah)
	- Lubang dia	2 1/2"	x	1 buah)
)
	- Pipa sch.40 dia.	2 1/2"	x	2100 mm	x	1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	150 mm	x	1 buah)
	- Elbow dia	2 1/2"	x	1 buah)
	- Flange dia.	2 1/2"	x	2 buah)
)
	- Pipa sch.40 dia.	2 1/2"	x	6000 mm	x	1 buah)
	- Flange dia.	2 1/2"	x	2 buah)
	- Flange prop dia.	2 1/2"	x	1 buah)
	- Packing karet dia.		x	3 mm	x	22 buah)
	- Mur baut dia.	1/2"	x	2" x	88 buah)
)
	Ganti baru pipa SW Shower COT, kanan kiri :						
	Kiri						
	- Pipa sch.40 dia.	2"	x	3800 mm	x	1 buah)
	- Flange dia.	2"	x	2 buah)
)
	- Pipa sch.40 dia.	2"	x	6000 mm	x	1 buah)

No./A/C	Job Description						Keterangan
	- Flange dia.	2"	x	2 buah)
	- Pipa sch.40 dia.	2"	x	1000 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	300 mm	x	2 buah)
	- Elbow dia	2"	x	1 buah)
	- Flange dia.	2"	x	3 buah)
	- Lubang dia	2"	x	1 buah)
	- Pipa sch.40 dia.	2"	x	2700 mm	x	1 buah)
	- Flange dia.	2"	x	2 buah)
	- Pipa sch.40 dia.	2"	x	6000 mm	x	1 buah)
	- Flange dia.	2"	x	2 buah)
	- Pipa sch.40 dia.	2"	x	1850 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	100 mm	x	2 buah)
	- Elbow dia	2"	x	1 buah)
	- Flange dia.	2"	x	3 buah)
	- Lubang dia	2"	x	1 buah)
	- Pipa sch.40 dia.	2"	x	1600 mm	x	2 buah)
	- Pipa sch.40 dia.	2"	x	1450 mm	x	1 buah)
	- Elbow dia	2"	x	2 buah)
	- Flange dia.	2"	x	2 buah)
	- Pipa sch.40 dia.	2"	x	630 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	920 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	280 mm	x	1 buah)
	- Elbow dia	2"	x	2 buah)
	- Flange dia.	2"	x	2 buah)
	- Packing karet dia.		x	3 mm	x	11 buah)
	- Mur baut dia.	1/2"	x	2" x	44 buah)
	- Pipa sch.40 dia.	2"	x	3800 mm	x	1 buah)
	- Flange dia.	2"	x	2 buah)
	- Pipa sch.40 dia.	2"	x	6000 mm	x	1 buah)
	- Flange dia.	2"	x	2 buah)
	- Pipa sch.40 dia.	2"	x	1000 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	300 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	200 mm	x	1 buah)
	- Elbow dia	2"	x	1 buah)
	- Flange dia.	2"	x	3 buah)
	- Lubang dia	2"	x	1 buah)
	- Pipa sch.40 dia.	2"	x	2700 mm	x	1 buah)
	- Flange dia.	2"	x	2 buah)
	- Pipa sch.40 dia.	2"	x	6000 mm	x	1 buah)
	- Flange dia.	2"	x	2 buah)
	- Pipa sch.40 dia.	2"	x	1850 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	100 mm	x	2 buah)
	- Elbow dia	2"	x	1 buah)
	- Flange dia.	2"	x	3 buah)
	- Lubang dia	2"	x	1 buah)
	- Pipa sch.40 dia.	2"	x	1450 mm	x	1 buah)

No./A/C	Job Description						Keterangan
	- Pipa sch.40 dia.	2"	x	1600 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	1550 mm	x	1 buah)
	- Elbow dia	2"	x	2 buah)
	- Flange dia.	2"	x	2 buah)
)
	- Pipa sch.40 dia.	2"	x	650 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	930 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	280 mm	x	1 buah)
	- Elbow dia	2"	x	2 buah)
	- Flange dia.	2"	x	2 buah)
	- Packing karet dia.		x	3 mm	x	11 buah)
	- Mur baut dia.	1/2"	x	2" x	44 buah		) Selesai
	Rekondisi instalasi pipa SW shower dum kanan depan, sbb : (material lama))
	- Pipa sch.40 dia.	2"	x	1850 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	6000 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	1000 mm	x	1 buah)
	- Flange dia.	2"	x	7 buah)
)
	- Pipa sch.40 dia.	2"	x	6000 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	3800 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	300 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	200 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	2800 mm	x	1 buah)
	- Elbow dia	2"	x	1 buah)
	- Flange dia.	2"	x	8 buah)
	- Packing karet dia.	2"	x	3 mm	x	8 buah)
	- Mur baut dia.	1/2"	x	2" x	32 buah)
)
	- Lubang pipa dia	2"	x	15 buah)
	- Sock dia	1/2"	x	15 buah)
	- Nepple shower dia	1/2"	x	15 buah)
	- Ubolt dia	2"	x	8 buah)
)
	- Pipa sch.40 dia.	2"	x	3800 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	6000 mm	x	2 buah)
	- Pipa sch.40 dia.	2"	x	1000 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	1850 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	300 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	200 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	2800 mm	x	1 buah)
	- Elbow dia	2"	x	1 buah)
	- Flange dia.	2"	x	15 buah)
	- Packing karet dia.	2"	x	3 mm	x	8 buah)
	- Mur baut dia.	1/2"	x	2" x	32 buah)
)
	- Lubang pipa dia	2"	x	15 buah)
	- Sock dia	1/2"	x	15 buah)
	- Nepple shower dia	1/2"	x	15 buah)
	- Ubolt dia	2"	x	8 buah			) Selesai
	Kanan depan)
	- Pipa sch.40 dia.	2"	x	1850 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	100 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	6000 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	1000 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	300 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	270 mm	x	1 buah)
	- Elbow dia	2"	x	2 buah)

No./A/C	Job Description							Keterangan
	- Flange dia.	2"	x	8 buah)
	- T dia	2"	x	1 buah)
	- Lubang dia	2"	x	2 buah)
	- Pipa sch.40 dia.	2"	x	6000 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	3800 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	100 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	2700 mm	x	1 buah)
	- Elbow dia	2"	x	1 buah)
	- Flange dia.	2"	x	7 buah)
	- Packing karet dia.		x	3 mm	x	9 buah)
	- Mur baut dia.	1/2"	x	2" x	32 buah)
	- Support)
	Siku)
		70	+	70	x	7	x 300 mm x 3 bh)
		70	+	70	x	7	x 400 mm x 3 bh)
	- Ubolt dia	2"	x	8 buah)
	- Pipa sch.40 dia.	1"	x	150 mm	x	4 buah)
	- Nozzle shower dia	1"	x	2 buah)
	- Plat prop dia	2"	x	10 mm x	2	buah)
	- Lubang dia		x	8 buah)
	- Mur baut dia.	1/2"	x	2" x	8 buah)
	Kanan belakang)
	- Pipa sch.40 dia.	2"	x	1850 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	100 mm	x	2 buah)
	- Pipa sch.40 dia.	2"	x	6000 mm	x	2 buah)
	- Pipa sch.40 dia.	2"	x	1000 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	300 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	270 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	2800 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	3800 mm	x	1 buah)
	- Elbow dia	2"	x	2 buah)
	- Flange dia.	2"	x	15 buah)
	- T dia	2"	x	1 buah)
	- Packing karet dia.		x	3 mm	x	9 buah)
	- Mur baut dia.	1/2"	x	2" x	40 buah)
	- Support)
	Siku)
		70	+	70	x	7	x 300 mm x 3 bh)
		70	+	70	x	7	x 400 mm x 3 bh)
	- Ubolt dia	2"	x	8 buah)
	- Pipa sch.40 dia.	1"	x	150 mm	x	4 buah)
	- Nozzle shower dia	1"	x	2 buah)
	- Plat prop dia	2"	x	10 mm x	2	buah)
	- Lubang dia		x	8 buah)
	- Mur baut dia.	1/2"	x	2" x	8 buah)
	Bongkar pipa u/ pemasangan nozzle spray (2 buah), sbb :				(material lama))
	- Pipa sch.40 dia.	2"	x	4500 mm	x	1 buah)
	- Flange dia.	2"	x	2 buah)
	- Pipa sch.40 dia.	1"	x	50 mm	x	4 buah)
	- Nozzle srpay dia	1"				(supply dock))
	Penggantian nozzle pipa shower cargo (las cor full lubang nozzle, bahan kawat las kuningan dia 1")				3 buah)
	- Flange dia.	2"	x	2 buah)

Selesai

Selesai

Selesai

No./A/C	Job Description						Keterangan
	- Plat dia	2"	x	10	mm x	2 buah)
	- Elbow drat dia	1"	x			4 buah)
	- Sock drat dia	1"	x			2 buah)
	- Nepple drat dia	1"	x			6 buah)
	- T drat dia	1"	x			2 buah)
	- Nozzle srpay dia	1"	x			4 buah (supply dock))
	- Packing karet dia	2"	x	3 mm	x	3 buah)
	- Mur baut dia	1/2"	x	2"	x	12 buah)
	Depan Forecastle)
	- Pipa sch.40 dia.	2"	x	1850 mm	x	1 buah)
	- Elbow dia	2"	x			1 buah)
	- Flange dia.	2"	x			3 buah)
	- Sock drat dia	1/2"	x			2 buah)
	- Lubang dia	1/2"	x			2 buah)
	- Nozzle srpay dia	1/2"	x			2 buah (supply dock))
	- Pipa sch.40 dia.	2"	x	6000 mm	x	1 buah)
	- Flange dia.	2"	x			2 buah)
	- Sock drat dia	1"	x			4 buah)
	- Lubang dia	1/2"	x			4 buah)
	- Nozzle srpay dia	1/2"	x			4 buah (supply dock))
	- Pipa sch.40 dia.	2"	x	1000 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	300 mm	x	2 buah)
	- Elbow dia	2"	x			1 buah)
	- Flange dia.	2"	x			3 buah)
	- Sock drat dia	1/2"	x			1 buah)
	- Lubang dia	1/2"	x			1 buah)
	- Nozzle srpay dia	1/2"	x			1 buah (supply dock))
	- Pipa sch.40 dia.	2"	x	6000 mm	x	1 buah)
	- Flange dia.	2"	x			2 buah)
	- Sock drat dia	1"	x			5 buah)
	- Lubang dia	1/2"	x			5 buah)
	- Nozzle srpay dia	1/2"	x			5 buah (supply dock))
	- Pipa sch.40 dia.	2"	x	3800 mm	x	1 buah)
	- Flange dia.	2"	x			2 buah)
	- Sock drat dia	1"	x			3 buah)
	- Lubang dia	1/2"	x			3 buah)
	- Nozzle srpay dia	1/2"	x			3 buah (supply dock))
	- Elbow drat dia	1"	x			4 buah)
	- Sock drat dia	1"	x			4 buah)
	- Nepple drat dia	1"	x			4 buah)
	- Nozzle srpay dia	1"	x			4 buah (supply dock))
	- Packing karet dia		x	3 mm	x	8 buah)
	- Mur baut dia	1/2"	x	2"	x	32 buah)
	Belakang)
	- Pipa sch.40 dia.	2"	x	1850 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	100 mm	x	1 buah)

No./A/C	Job Description						Keterangan
	- Pasang isolasi grease			1 buah	(baru))
	- Pipa sch.80 dia.	6"	x	450 mm	x	1 buah)
	- Pipa sch.80 dia.	6"	x	370 mm	x	1 buah)
	- Pipa sch.80 dia.	6"	x	1420 mm	x	1 buah)
	- Elbow dia	6"	x	1 buah)
	- Flange dia.	6"	x	2 buah)
	- Pipa T dia	6"	x	300 mm	x	1 buah)
	- Pipa T dia	6"	x	150 mm	x	1 buah)
	- Pasang isolasi grease			2 buah	(baru))
	- Pipa sch.80 dia.	1 1/2"	x	380 mm	x	1 buah)
	- Pipa sch.80 dia.	1 1/2"	x	1800 mm	x	1 buah)
	- Elbow dia	1 1/2"	x	1 buah)
	- Flange dia.	1 1/2"	x	2 buah)
	- Pasang isolasi grease			2 buah	(baru))
	- Pipa sch.80 dia.	6"	x	1500 mm	x	2 buah)
	- Pipa sch.80 dia.	6"	x	1330 mm	x	2 buah)
	- Pipa sch.80 dia.	6"	x	1200 mm	x	2 buah)
	- Elbow dia	6"	x	4 buah)
	- Flange dia.	6"	x	4 buah)
	- Pasang isolasi grease			4 buah	(baru))
	- Pipa sch.80 dia.	6"	x	780 mm	x	2 buah)
	- Flange dia.	6"	x	2 buah)
	- Pasang isolasi grease			2 buah	(baru))
	- Pipa sch.80 dia.	6"	x	5200 mm	x	1 buah)
	- Pipa sch.80 dia.	6"	x	1360 mm	x	1 buah)
	- Pipa sch.80 dia.	6"	x	450 mm	x	1 buah)
	- Pipa sch.80 dia.	6"	x	870 mm	x	1 buah)
	- Pipa sch.80 dia.	6"	x	400 mm	x	1 buah)
	- Pipa sch.80 dia.	6"	x	1420 mm	x	1 buah)
	- Elbow dia	6"	x	3 buah)
	- Flange dia.	6"	x	3 buah)
	- Pipa T dia	6"	x	300 mm	x	1 buah)
	- Pipa T dia	6"	x	150 mm	x	1 buah)
	- Pasang isolasi grease			3 buah	(baru))
	- Pipa sch.80 dia.	1 1/2"	x	100 mm	x	1 buah)
	- Flange dia.	1 1/2"	x	1 buah)
	- Lubang dia	1 1/2"	x	1 buah)
	- Pasang isolasi grease			1 buah	(baru))
	- Sock drat dia	3/8"	x	1 buah)
	- Nepple drat dia	3/8"	x	2 buah)
	- Nepple dia	3/8"	x	1 buah	(lama))
	- Lubang dia	1"	x	1 buah)
	- Valve dia	3/8"	x	1 buah)
	- Packing teflon dia.		x	3 mm	x	12 buah)
	- Mur baut dia.	M20	x	5" x	132 buah)
	- Mur baut dia.	5/8"	x	2 1/2" x	4 buah)
	- Support)
	Plat)
	100	x	80 x	10 mm x	42 buah)
	Jarum keras		x	1 buah)
	Ubolt dia	1 1/2"	x	4 buah)
	Ubolt dia	2"	x	30 buah)

No./A/C	Job Description						Keterangan
	Ubolt dia	2 1/2"	x	18 buah)
	Ubolt dia	5"	x	11 buah)
	Ubolt dia	6"	x	7 buah)
	Ubolt dia	4"	x	4 buah)
	- Fit up pipa)
	- Dilaksanakan Air Pressure Test dengan tekanan 8 Bar						) Selesai
	Ganti baru pipa vapour, sbb :)
	- Pipa sch.80 dia.	5"	x	2350 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	360 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	100 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	2500 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	150 mm	x	1 buah)
	- Elbow dia	5"	x	2 buah)
	- Flange dia.	5"	x	3 buah)
	- Pipa T dia	5"	x	250 mm	x	1 buah)
	- Pipa T dia	5"	x	100 mm	x	1 buah)
	- Pasang isolasi grease			3 buah	(baru))
	- Pipa sch.80 dia.	5"	x	1900 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	1000 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	100 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	2900 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	150 mm	x	1 buah)
	- Elbow dia	5"	x	2 buah)
	- Flange dia.	5"	x	3 buah)
	- Pipa T dia	5"	x	250 mm	x	1 buah)
	- Pipa T dia	5"	x	100 mm	x	1 buah)
	- Globe valve dia	5"	x	2 buah	(lama))
	- Pasang isolasi grease			3 buah	(baru))
	- Pipa sch.80 dia.	5"	x	400 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	100 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	200 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	120 mm	x	1 buah)
	- Elbow dia	5"	x	1 buah)
	- Flange dia.	5"	x	3 buah)
	- Pipa T dia	5"	x	250 mm	x	1 buah)
	- Pipa T dia	5"	x	100 mm	x	1 buah)
	- Packing teflon dia.	5"	x	3 mm	x	9 buah)
	- Mur baut dia.	M20	x	5" x	108 buah)
	- Pasang isolasi grease			3 buah	(baru))
	- Pipa sch.80 dia.	5"	x	400 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	200 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	100 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	150 mm	x	1 buah)
	- Elbow dia	5"	x	1 buah)
	- Flange dia.	5"	x	3 buah)
	- Pipa T dia	5"	x	250 mm	x	1 buah)
	- Pipa T dia	5"	x	100 mm	x	1 buah)
	- Packing teflon dia.	5"	x	3 mm	x	3 buah)
	- Mur baut dia.	M20	x	5" x	36 buah)
	- Pasang isolasi grease			3 buah	(baru))
	- Pipa sch.80 dia.	5"	x	450 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	150 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	1650 mm	x	1 buah)

No./A/C	Job Description						Keterangan
	- Pipa sch.80 dia.	5"	x	200 mm	x	2 buah)
	- Pipa sch.80 dia.	5"	x	400 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	250 mm	x	1 buah)
	- Elbow dia	5"	x	4 buah)
	- Flange dia.	5"	x	11 buah)
	- Flange SS dia.	5"	x	2 buah	(lama))
	- Flange blank dia.	5"	x	2 buah	(lama))
	- Globe valve dia	5"	x	1 buah	(lama))
	- Pasang isolasi grease			11 buah	(baru))
	- Pipa sch.80 dia.	1 1/2"	x	100 mm	x	2 buah)
	- Flange dia.	1 1/2"	x	2 buah)
	- Lubang dia	1 1/2"	x	2 buah)
	- Valve dia	1 1/2"	x	1 buah	(lama))
	- Pasang isolasi grease			2 buah	(baru))
	- Pipa sch.80 dia.	5"	x	200 mm	x	2 buah)
	- Pipa sch.80 dia.	5"	x	6000 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	400 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	3000 mm	x	1 buah)
	- Pipa sch.80 dia.	5"	x	850 mm	x	2 buah)
	- Elbow dia	5"	x	2 buah)
	- Flange dia.	5"	x	4 buah)
	- Pipa T dia	5"	x	250 mm	x	2 buah)
	- Pipa T dia	5"	x	100 mm	x	2 buah)
	- Pasang isolasi grease			4 buah	(baru))
	- Sock drat dia	3/8"	x	2 buah)
	- Double neple dia	3/8"	x	4 buah	(lama))
	- Nepple drat dia	3/8"	x	2 buah	(lama))
	- Lubang dia	1 1/2"	x	2 buah)
	- Valve dia	1 1/2"	x	1 buah	(lama))
	- Pipa sch.80 dia.	5"	x	3350 mm	x	2 buah)
	- Flange dia.	5"	x	2 buah)
	- Globe valve dia	5"	x	2 buah	(lama))
	- Packing teflon dia.	5"	x	3 mm	x	16 buah)
	- Mur baut dia.	M20	x	5" x	160 buah)
	- Pasang isolasi grease			2 buah	(baru)		) Selesai
	- Pasang pipa ground pada sambungan flange			30 buah	(baru)		) Selesai
	- Dilaksanakan Air Pressure Test dengan tekanan 8 Bar						) Selesai
	Ganti baru instalasi pipa SW reheater main deck, sbb :)
	- Pipa sch.40 dia.	8"	x	2870 mm	x	1 buah)
	- Pipa sch.40 dia.	8"	x	100 mm	x	1 buah)
	- Elbow dia	8"	x	1 buah)
	- Flange dia.	8"	x	2 buah)
	- Pipa sch.40 dia.	8"	x	150 mm	x	2 buah)
	- Elbow dia	8"	x	1 buah)
	- Flange dia.	8"	x	1 buah	(lama))
	- Sock dia	10"	x	1 buah)
	- Pipa sch.40 dia.	8"	x	1400 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	8"	x	400 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	8"	x	100 mm	x	1 buah (lama))
	- Elbow dia	8"	x	2 buah	(lama))

No./A/C	Job Description										Keterangan
	- Flange dia.	8"	x	1 buah	(lama))
	- Pipa sch.40 dia.	8"	x	3500 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	8"	x	100 mm	x	1 buah	(lama))
	- Elbow dia	8"	x	2 buah	(lama))
	- Flange dia.	8"	x	2 buah)
	- Pipa sch.40 dia.	8"	x	2350 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	8"	x	600 mm	x	1 buah	(lama))
	- Elbow dia	8"	x	1 buah	(lama))
	- Flange dia.	8"	x	1 buah	(lama))
	- Valve electric dia	8"	x	2 buah	(lama))
	- Ubolt dia	8"	x	4 buah	(lama))
	- Packing karet dia.	8"	x	5 mm	x	6 buah)
	- Mur baut dia.	3/4"	x	5" x	12 buah)
	- Mur baut dia.	3/4"	x	3" x	60 buah						) Selesai
	5.7	<u>Poop Deck and Accommodation Room</u>									
513001	PIC: Chief Officer										
435030	To be provided labour, necessary tools, ventilation, and lighting to accomplish the following works:										
	- Renew spill box P/S size : 1400 mm x 400 mm x 560 mm x 60 mm = 6 sets										
	- Renew mess room vinyl size 9000 mm x 5500 mm.										
	- Renew Bathroom and Toilet Door material aluminium. Size 1660 mm x 632 mm = 4 sets.										
	- Renew Toilet Door material wood and aluminium. Size 1600 mm x 565 mm = 2 sets										
	- Renew Mess Room Door out material wood and aluminium. Size 1660 mm x 800 mm = 1 sets										
	- Service door gang crew include renew heavy anti-corrosive door = 2pcs.										
	- Service door gang Officer include renew heavy anti-corrosive door = 2pcs.										
	Realisasi :										
	Perbaikan oil spill box P/S di Poop Deck, sbb :)
	- Ketok spill box								6 Unit)	
	- Dempul spill box yang berlubang								6 Unit)	
	- Sandpaper spill box								6 Unit)	
	- Fiber Spill box	190 cm	x	50 cm	x	7 lapis			3 Unit)	
	- Fiber Spill box	150 cm	x	50 cm	x	7 lapis			2 Unit)	
	- Fiber Spill box	150 cm	x	80 cm	x	7 lapis			1 Unit)	
	- Fiber pipa Ø 2,5"		x	50 cm	x	4 lapis			6 Unit)	
	- Fiber pipa Ø 3"		x	50 cm	x	4 lapis			6 Unit)	
	- Fiber pipa Ø 2,5"		x	100 cm	x	4 lapis			3 Unit)	
	- Fiber pipa Ø 3"		x	100 cm	x	4 lapis			3 Unit)	
	- Fiber pipa Ø 5"		x	70 cm	x	4 lapis			1 Unit)	
	- Pasang stop kran sipll box di poop deck)	
	- Sock drat				x	1/2"			2 buah)	
	- Ball valve stainless				x	1/2"			2 buah	) Selesai	
	Ganti baru vynil massroom, sbb :)
	- Vynil			40 m ²)	
	- Asistensi :)	
	> Deck composit)	
	> Bongkar cor semen)	
	> Pasar cover plastik									) Selesai	
	Perbaikan pintu-2 kamar mandi & messroom)
	- Pintu kamar mandi				x	5 buah	(lama))	
	- Pintu mess room				x	1 buah	(lama))	
	- Bongka pasang handle pintu				x	6 buah	(lama))	
	- Ganti baru rangka & dinding pintu yg rusak				x	6 buah)	

No./A/C	Job Description										Keterangan
5.8 201064	- Lapis pintu dg galvalum 70 x 170 cm x 2 lapis x 5 buah										Selesai
	80 x 170 cm x 2 lapis x 1 buah										
	- Cat pintu x 6 buah										
	<u>Boat Deck, Bridge Deck, and Navigation Deck</u>										Batal
	PIC: Chief Officer										
	To be provided labour, necessary tools, ventilation, and lighting to accomplish the following works:										
	- Check and repair provision store crane 1 unit										
	- Renew Filter exhaust officer's WC diameter 170 mm x 1 set										
	- Renew antenna pipe support for cable MF/HF transmitter size diam. 2 inch x 1000 mm.										
	- Service electric compressor of whistle box.										
	Realisasi :										
	Bongkar Ganti baru Eye Plate provision store crane										
	- Bongkar mata rantai dia. 3/4" x 1 buah (lama)										
	- Pasang baru bul										
	Plat										
	120 x 100 x 14 mm x 1 buah										
	Sepatu										
	130 x 50 x 14 mm x 1 buah (lama)										
	Ganti baru filter ventilasi WC, sbb :										
	- Kawat kassa 155 x 1 buah										
	- Flange dia. 155 x 4 mm x 2 buah										
- Lubang dia 6 mm x 8 buah											
- Mur baut SS dia. M8 x 4 buah											
Bongkar ganti baru pondasi antena MFHF navigasi deck, sbb :											
Pipa sch.40 dia. 1" x 1400 mm x 1 buah											
- Tutup pipa											
60 x 60 x 8 mm x 1 buah											
- Pipa sch.40 dia. 1 1/4" x 1200 mm x 1 buah											
- ubolt dia 1 1/2" x 1 buah											
- Besi esser dia 19 mm x 240 mm x 1 buah											
19 mm x 80 mm x 1 buah											
Asistensi connect disconnect kabel antena											
5.10 285053	<u>Tank Coating No. 1 (P/S) and No. 2 (P/S) Void Space Tanks</u>										Batal
	PIC: Chief Officer										
	To be provided labour, necessary tools, ventilation, and lighting to accomplish the following works:										
	- To be opened manhole, cleaned manually, and prepared for Class Inspection.										
	- To be carried out chipping inside void space approx. 500 sqm										
	- To be disposed to the ashore the excessive mud and scale around 2 ton.										
	- Clean tank top from any scale, rust and dust prior application coating										
	- To be applied full coat 2 times application on tank top by special paint (owner supply), as instructed upon determining specification on site approx 7000 sqm. 1 x FC										
	- To be applied coating on vertical side 500 mm from tank top										
	- To be reinstalled manhole cover using new rubber joint and existing nuts as per O/S Instruction.										
	5.12 155056	<u>Cargo Pressure Tanks for Class Survey</u>									
PIC: Chief Officer											
Cargo Tanks No.1 dan No.2 specification:											
Cargo Type : Liquified Petroleum Gas											
Containment Type : Independent Type C											
Maximum Cargo Pressure : 18.0 bar											
Cubic Factor : 5000 CuM											
To be provided labour, necessary tools, ventilation, and lighting to accomplish the following works:											
- To be carried out Internal Inspection.											

No./A/C	Job Description	Keterangan
	<ul style="list-style-type: none"> - To be carried out Non-Destructive test. (UT Flow) 12 sheet - To be carried out pressure relief cargo tank quick closing shut off valve including fail closing system. - To be carried out performance test for mechanical ventilation system around cargo area. - To be carried out gas detector test on alarm system. 	Batal
5.13	<u>Air Pressure Test for Cargo Tanks</u>	
155056	PIC: Chief Officer To be provided labour, necessary tools, ventilation, and lighting to accomplish the following works: <ul style="list-style-type: none"> - To be carried out air pressure test for No. 1 and No. 2 Cargo Tank. - To be carried out Cargo Line Air Test. 	Batal
5.14	<u>Air Pressure Test Pipelines</u>	
155056	PIC: Chief Officer To be provided labour, necessary tools to accomplish the following works: <ul style="list-style-type: none"> - To be carry out air pressure test for existing cargo line and valve in way of pneumatic pressure test 10 kg/cm². Cargo Line pressure test certificate to be issued. - To be carry out air pressure test for bunker line in way of pneumatic pressure test 10 kg/cm². Bunker Line pressure test certificate to be issued. - To be carry out Popping test of safety relief valves on cargo tanks and cargo lines (should indicated each serial number of safety valves in the certificates) - To be provided connecting and disconnecting air pressure and installed temporary blank flange as necessary. 	Batal
5.15	<u>Purging / Gassing Up of Cargo Tanks and Cargo Pipeline</u>	
146002	PIC: Chief Officer	
146003	<ul style="list-style-type: none"> - Purging N₂ above pressure tank and cargo pipeline with N₂ (Nitrogen Gas), before starting hot works for gas free and submit record certificate arranged by yard or later as instructed. - Purging to be carried out at alongside berth. The N2 tank lorry can enter yard and stay alongside of the vessel Near the vessel manifold. - NOTE: Purging process may cause bad smell at area near vessel. - Existing manhole to be opened up for 2 in no cargo tanks and installed later in position with use new teflon packing on completion to protect manhole, nut, and bolt with use putty to service existing bolt and nut M36 x 24 pcs / tank manholes. - On completion for working on cargo tanks and after ensuring air tightness of manhole by air pressure test 6.8 kg/cm², the tank shall be air purged with inner gas (N₂) for releasing oxygen (O₂). - To be installed staging internal cargo tanks for purpose cleaning and removed cargo pump for internal inspection by Class Surveyor. - To be removed staging upon completion, provided maintain lighting and ventilation internal cargo tanks during work and internal inspection period included electric power consumption. - To be collected debris / remains and disposed to shore. - To be carried out air pressure test as instructed by Class Surveyor, 18.0 kg/cm², and installed temporary blank flange as necessary. - 4 in nose pressure relief valve on top of each cargo tanks 125A @ 150A to be opened completely for Class Survey. To be transported to workshop, overhauled, grinded in valve seat, and cleaned. After completed, to be reassembled as original, used new packing, carried out pressure test 2 in nose 18.0 kg/cm², and 2 in nose 6.3 kg/cm². Existing bolt and nut to be renewed as necessary and protected by putty. Indicating panel above each tank and whell house for safety valve to be serviced and calibrated by maker specialist. To be provided certificate. - 8 in nose pressure relief valve cargo tanks 80A set, pressure 20.0 kg/cm² to be opened completely for Class Survey. To be transported to workshop, overhauled, grinded in valve seat, and cleaned after inspection. To be assembled as original use new packing and carried out return back to ship for installing in position. Existing bolt and nut to be renewed as necessary and protected by wax. Size = 25A x 5 pcs; size = 50A x 2 pcs; size = 80A x 1 pc. - 2 in nose attached globe valve 150A for safety valve. 2 in nose rrot valve of th elow pressure safety valve 150A to be opened up completely for Class Survey. To be transported to workshop, overhauled, grinded in valve seat, and cleaned after inspection. - To be transported to workshop, overhauled, grinded in valve seat, and cleaned after inspection. 	

No./A/C	Job Description						Keterangan
	1450	x	125 x	14	mm x	2 buah (atas))
	1600	x	125 x	14	mm x	2 buah (bawah))
	- Mur baut JF kuningan dia	JF M 8	x	40 mm	x	90 buah)
	- Split pen dia	4 mm			x	6 buah)
	- Pelancaran pen as dan bronze pada kamps)
	> Pen as dia	45 mm	x	120	mm x	4 buah)
		35 mm	x	88	mm x	2 buah)
	> Bronze dia	65 mm	x	80	mm x	2 buah)
	- Bongkar pasang handle kamps				x	2 buah	) Selesai
	Ganti baru pipa hydraulic, sbb :)
	- Pipa sch.80 dia.	1 1/2"	x	200 mm	x	2 buah)
	- Flange dia.	1 1/2"	x	8	buah)
	- Lubang dia	1 1/2"	x	2	buah)
	- Packing oring		x	3 mm	x	6 buah)
	- Mur baut dia	5/8"	x	4"	x	24 buah)
	- Pipa sch.80 dia.	1 1/2"	x	200 mm	x	2 buah)
	- Pipa sch.80 dia.	1 1/2"	x	400 mm	x	4 buah)
	- Pipa sch.80 dia.	1 1/2"	x	100 mm	x	2 buah)
	- Doubling deck)
	Plat dia	1 1/2"	x	10	mm x	1 buah)
	- Bongkar pasang lantai grating		x	2	buah		) Selesai
5.19	Radio and Navigation Equipment)
414001	PIC: Chief Officer)
	To be arranged Service Engineer with necessary tools and material to service and inspect the Equipment.)
	The work scope shall include but not limited to the followings:)
	- Gyrocompass & Autopilot;)
	Tokimec Inc Type: TG5000 (Gyrocompass), Tokimec Type PR-2000 (Auto Pilot))
	Gyro compass & Auto pilot not working to be general checked.)
	- Marine Radar No. 1; JRC JMA 5312 series no.554362)
	To be general check performance test.)
	- Marine Radar no. 2 JRC JMA 7252-6 series no. 55838)
	To be general check)
	- Electro Magnetic Log ; Yokogawa Denshikiki Co.,Ltd, Type: EML 201-HSI)
	Not working To be checked and repaired)
	- Magnetic Compass; Tokimec Inc. Type: SH-165A)
	To be carried out deviation correction at sea trial by compass adjuster.)
	Certificate to be issued and submitted to the ship master)
	- AIS (Automatic Identification System); Maker : SIMRAD V5035)
	To be general check.)
	- Weather Fax; JRC JAX-9A)
	Not working to be general checked up)
	- Echosounder; JRC JFE -570S)
	To be general checked up and calibrated.)
	- GPS ; GPS Navigator model JLR-7500)
	To be general checked up.)
	- Public Addresser; JRC NVA-1700mk II)
	Tape and Radio not working, To be service and general checked up.)
	- Course recorder; Tokimec Inc ,Type : CR-1)
	To be general checked up.)
	- VDR (Voyage Data Record) ; JRC JCY-1850)
	To be general check up.)
	- Navigation light panel ; NUC Light not function)
	To be general checked and repair)
	- Wind indicator ; Nippon Electric Instrument)
	Speed Indicator to be check)

No./A/C	Job Description	Keterangan												
	<p>- SSAS To be general check and repair</p> <p>- LRIT To be general check and repair</p> <p>- VHF (2 unit) ; JRC JHS-32A Low signal , need replaced antenna by new one To be general checked up.</p> <p>- MF/HF ; JRC NCH – 700 Printer JRC NKG - 800 Power transmit Error To be service and general checked up.</p> <p>- Inmarsat C JRC NDZ-127C To be general checked up.</p> <p>- NAVTEX JRC NCR-333 To be general checked</p> <p>- EPIRB JOTRON Need to Annual Test and certificate to be issued</p>	Owner												
5.19	<p><u>Cargo Equipment (Class Survey)</u></p> <p>PIC: Chief Officer</p> <p>To be arranged Service Engineer with necessary tools and material to service and inspect the Equipment.</p> <p>The work scope shall include but not limited to the followings:</p> <p><u>1. Safety Valve For Cargo Tanks And Pipe Lines</u></p> <p>a.) Safety Relief valves on cargo tanks (pilot operated type)</p> <table><tr><th></th><th>High Pressure</th><th>Middle Pressure</th><th>Low Pressure</th></tr><tr><td>No. 1 Cargo Tank</td><td>18.0 Kg/cm2 (2 pcs)</td><td>13.0 kg/cm2 (2 pcs)</td><td>6.2 kg/cm2 (2 pcs)</td></tr><tr><td>No. 2 Cargo Tank</td><td>18.0 Kg/cm2 (2 pcs)</td><td>13.0 kg/cm2 (2 pcs)</td><td>6.2 Kg/cm2 (2 pcs)</td></tr></table> <p>Throat Dia : 135mm Lift 74.3 mm Nominal Dia : 6 – 8 mm</p> <p>Total 12 safety relief valves to be removed and transferred work shop or competent third Party facility and overhauled and cleaned inside.</p> <p>To be assembled to original, high / middle / low pressure test to be carried out in the presence of Supt / Class surveyors.</p> <p>b.) Safety valves on cargo lines and others</p> <p>Following safety valves to be removed and transferred to dock workshop and carry out popping test in the presence of Supt/ Class surveyor. And issue the certificate by dockyard.</p> <p>To be renewed packing and necessary packing to be provided by dockyard.</p> <p>Size of safety valve (Inlet x Outlet) / Pressure / Quantity</p> <p>50 x 80 mm / 20 kg/cm2 / 1 set</p> <p>25 x 50 mm / 20 kg/cm2 / 5 sets</p> <p>Location of valves:</p> <p>1 pc on Cargo manifold</p> <p>3 pcs on cargo liquid lines</p> <p>1 pc on cargo re-heater</p> <p>1 pc Knock out drum (in cargo compressor room).</p> <p><i>Estimasi :</i></p> <p>Loading Line COT-1 & COT-2</p> <p>- Globe valve 20k-100</p> <p style="text-align: right;">Spare part supply owner</p> <p style="text-align: center;">2 pcs</p>		High Pressure	Middle Pressure	Low Pressure	No. 1 Cargo Tank	18.0 Kg/cm2 (2 pcs)	13.0 kg/cm2 (2 pcs)	6.2 kg/cm2 (2 pcs)	No. 2 Cargo Tank	18.0 Kg/cm2 (2 pcs)	13.0 kg/cm2 (2 pcs)	6.2 Kg/cm2 (2 pcs)	Batal
	High Pressure	Middle Pressure	Low Pressure											
No. 1 Cargo Tank	18.0 Kg/cm2 (2 pcs)	13.0 kg/cm2 (2 pcs)	6.2 kg/cm2 (2 pcs)											
No. 2 Cargo Tank	18.0 Kg/cm2 (2 pcs)	13.0 kg/cm2 (2 pcs)	6.2 Kg/cm2 (2 pcs)											

No./A/C	Job Description	Keterangan
	<p>- Check valve 20k-100 2 pcs</p> <p>- Shut Down valve 20k-150 2 pcs</p> <p>- Globe valve 20k-150 2 pcs</p> <p>Discharge Line COT-1 & COT-2</p> <p>- Shut Down valve 20k-150 2 pcs</p> <p>- Globe valve 20k-150 2 pcs</p> <p>- Liquid Line COT-2 (Globe valve 20k-100) 1 pcs</p> <p>Suction Line COT-1 & COT-2</p> <p>- Shut Down valve 20k-125 2 pcs</p> <p>- Globe valve 20k-125 2 pcs</p> <p>- Delivery Line COT-1 & COT-2 (Globe valve 20k-125) 2 pcs</p> <p>Vapour Line</p> <p>- Shut Down valve 20k-125 2 pcs</p> <p>- Globe valve 20k-125 4 pcs</p> <p>Cargo Line</p> <p>- Shut Down valve 20k-200 2 pcs</p> <p>- Globe valve 20k-200 3 pcs</p> <p>Cargo Reheater Line</p> <p>- Globe valve 20k-150 2 pcs</p> <p>- Check valve 20k-150 1 pcs</p> <p>- Globe valve 20k-100 1 pcs</p> <p>- Globe valve 20k-200 2 pcs</p> <p>- Globe valve 20k-40 2 pcs</p> <p>2. Calibration For Thermometer & Pressure Gauge</p> <p>Following thermometer & pressure gauge to be calibrated with issuance of certificate. Disconnection and refitting thermometer & pressure gauge to be carried out by crew Hands.</p> <p>a.) Thermometer : Mercury in steel thermometer</p> <p>Type : Mercury actuated thermometer / range -20 C – 80 C</p> <p>No.1 cargo tank : Top -1 pc / Middle -1 pc / Bottom -1 pc</p> <p>No.2 cargo tank : Top- 1 pc / Middle -1 pc / Bottom – 1 pc</p> <p>Spare Thermometer: 3 pcs (Top / Mid / Bot).</p> <p>Center Manifold : 1 pcs.</p> <p>Total: 10 pcs of thermometer gauges</p> <p>b.) Pressure Gauge</p> <p>No.1 cargo tank x 1 pc</p> <p>No.2 cargo tank x 1 pc</p> <p>Spare pressure gauge x 1 pc</p> <p>Total: 3 pcs of pressure gauges</p> <p>3. Cargo Monitoring Panel And Cargo Level Gauge (No.1 & No.2 Tanks)</p> <p>Makers: SATOH ELECT. CO.,LTD.</p> <p>Following safety devices to be general checked each monitoring indication and issue Certificate.</p> <p>a) Tank high temperature alarm (45 degrees)</p> <p>b) Tank low temperature alarm (0 degrees)</p> <p>c) Cargo Tank high level alarm (10.64 m)</p> <p>d) Cargo Tank high high level alarm (10.93 m) with ESD shut-down.</p> <p>e) Cargo Tank (Low side) pressure alarm (5.8 kg/cm2)</p> <p>f) Cargo Tank (High side) pressure alarm (17.6 kg/cm2)</p> <p>g)Flash tank high level alarm</p> <p>h) Hydraulic low pressure (18.0 kg/cm2) and ESD shut-down</p> <p>i) Re-heater sea water low flow alarm trip (trouble with disconnected ele-cable)</p> <p>j) Confirm that the siren and rotating light working condition</p> <p>CARGO LEVEL GAUGE (MUSASHINO CO.,LTD: LEVEL MASTER AND</p>	<p>Batal</p>

No./A/C	Job Description						Keterangan
	LEVEL SWITCH TYPE))
	High level alarm and high high level alarm to be tested and confirm the siren and rotary red alarm lamp.)
	To be re-calibrated the level gauges float position and check the high high level and high level.)
							Owner
	4. Cargo Re-Heater)
	Maker : Fuji Car Manufacturing)
	Surface area : 86.5 m2)
	Type : Horizontal Shell / Tube)
	a) Sea water side covers to be removed with sea water pipe.)
	b) Cleaned sea water tube inside.)
	c) Pressure test to be carried out in the presence of Supt.)
	Sea water side : 5 kg/cm2 by sea water)
	Cargo side : 10 Kg/cm2 by Air or N2)
	d) Zinc plates to be replaced with new one provided by owner.)
	Realisasi :)
	Service cargo reheater (1 unit), sbb :)
	- Bongkar pasang : (material lama))
	> Cover cargo reheater dia	935 x 55 mm	x	1 buah)
	> AS drat SS dia	M20 x 140 mm	x	27 buah)
	> Mur dia	M20	x	54 buah)
	> Angle valve dia	4" - 20 K	x	1 buah)
	> Angle valve dia	1 1/2"-10	x	2 buah)
	> Safety valve dia	2"	x	1 buah)
	> Pipa sch.40 dia.	6"	x	500 mm	x	1 buah)
	> Flange dia	6"	x	2 buah)
	- Ganti baru : (material supply dock))
	> AS drat SS dia	M20 x 140 mm	x	1 buah)
	> Mur dia	M20	x	2 buah)
	> Packing tombo uk	935 x 1 mm	x	1 buah)
	> Packing teflon pipa dia.	4"	x	3 mm	x	2 buah)
		1 1/2"	x	3 mm	x	3 buah)
		2"	x	3 mm	x	2 buah)
	> Mur baut dia.	5/8"	x	2" x	36 buah)
	> Packing teflon pipa dia.	6"	x	3 mm	x	2 buah)
	> Mur baut SS dia.	M22 x 90 mm	x	23 buah)
	> AS drat SS dia	M20 x 120 mm	x	1 buah)
	> Mur dia	M20	x	2 buah)
	- Cleaning pipa cubing)
	Pipa dia.	26 - 20	x	3500 mm	x	446 buah)
	- Dilaksanakan hdyrotest dg tekanan 20 kg)
	> Alat bantu hydrotest)
	Plat dia	310 x 12 mm	x	1 buah)
		125 x 12 mm	x	3 buah)
		225 x 12 mm	x	1 buah)
	Lubang		x	6 buah)
	Packing karet dia	310 x 4 mm	x	1 buah)
		125 x 4 mm	x	3 buah)
		225 x 4 mm	x	1 buah)
	5. Cargo Pumps)
	Maker : Niigata Worthington)
							Selesai

No./A/C	Job Description	Keterangan
	Type : Electric Motor Driven Deep well pump Model : 14M-160-4 + 1)
	a) To be checked mechanical seal condition and replace in found any defective.)
	b) Cargo pump motor No.1 & No.2 to be checked and chemically cleaning electrical windings.	) Batal
	6. Liquid line pipe and vapour line pipe to be Hydrostatic pressure test 20kg/cm2 for cargo line and issued certificate.)
		) Owner
6	ENGINE DEPARTMENT)
6.1	Main Engine Plant)
	PIC: 2 nd Engineer, Chief Engineer, and Technical Superintendent)
	Maker: AKASAKA DIESEL CO.,LTD)
	Model: 6UEC-37LA)
	Engine Number: 37231)
	Cylinder Bore: 370 mm)
	Max Continuous Rating: 3089 kW)
	Number of Cylinders: 6)
	Piston Stroke: 880 mm)
	Revolutions at MCR: 210 rpm)
	To be provided labours, necessary tools, and material to accomplish the following works:	) Owner
6.1.1	M/E Air Intercooler (601055))
	To be open up cover of ME Air cooler)
	- To be opened up and transported to workshop for chemically cleaning water and air side.)
	- To be opened up both covers and applied apexior No. 3 to inner surface.)
	- To be renewed Zinc Anode upon completion restore above as original and carried out hydrostatic pressure test 7 kg/cm ² witnessed by C/E and O/S.)
	Realisasi :)
	Service & overhaul air intercooler ME (1 unit), sbb :)
	- Bongkar pasang (material lama))
	> Mur cover kanan kiri M16 x 60 buah)
	> Cover atas x 1 buah)
	> Baut cover atas M16 x 55 mm x 32 buah)
	> Cover bawah x 1 buah)
	> Mur cover bawah M16 x 90 mm x 32 buah)
	- Ganti baru : (supply dock))
	> Zinc anode pada cover x 13 buah)
	> Packing karet 5 mm x 2 buah)
	> Packing tombo 1 mm x 2 buah)
	- Perendaman air cooler dg chemical & air tawar/sirkulasi)
	- Pembersihan/pelancaran kisi-2 & pipa cubing yg buntu)
	- Rekondisi cover intercooler yg pecah)
	- Hydro test tekanan 0.2 – 0.3 bar/4 kg, sbb : (buat baru alat u/ pengepresan hydro test))
	> Plat 1230 x 620 x 14 mm x 2 buah)
	> Bor lubang plat dia 20 mm x 64 buah)
	> Packing karet 1230 x 620 x 5 mm x 2 buah	) Selesai
	Ganti baru isolasi panas flexible air intercooler ME (supply dock))
	- Asbes flexible air intercooler ME 1000 mm x 1000 mm)
	- Kawat pengikat asbes)
	- Bongkar pasang seng pentutup asbes	) Selesai

No./A/C	Job Description	Keterangan
6.1.2	<u>M/E Auxiliary Blower</u> <i>Exclude spare part</i> - To be overhauled the blower No. 1 and No. 2. Renew ball bearing and roller bearing. - To be tested for balancing fan blade and recorded. - To be cleaned Electro Motor and renew ball bearing for Electro Motor. - To be checked Mugger Test and recorded.	Batal
6.1.3	<u>M/E Governor (601088)</u> <i>Exclude spare part</i> To be arranged Service Engineer with necessary tools and material from maker's approved service center to carry out overhaul of the Governor. The scope of work to include but not limited to the following: - To be brought to the workshop for maintenance and calibration purpose. - To be carried out running test during sea trial. Note: The Renewal Parts must be confirmed by O/S.	Batal
6.1.4	<u>M/E Safety Device (601068)</u> <i>Exclude spare part</i> - To be arranged expert or specialist company for maintenance and testing all safety device. - To be carried out running test witnessed by C/E, O/S, and Class Surveyor. - To be issued certificate as reported to Class Surveyor.	Owner
6.1.5	<u>M/E Turbocharger (601053)</u> <i>Exclude spare part</i> Maker: Mitsubishi Heavy Industries .,LTD Model: MET 42SC To be appointed an authorised service center to carry out overhaul of the Turbocharger : - To be allowed for dismantling of the Turbocharger and removed of the rotor assembly to workshop for cleaning and dynamic balancing. - To be allowed for fly ash blasting of turbine blades and fairing of rotor blade tips if found bent. - To be allowed filter casing and silencer to remove to workshop for steam or chemical cleaning. - To be ensured both air filter and silencer are completely dry before installing back. - To be removed nozzle ring. To be allowed for fly ash blasting of nozzle ring and the thoroughly inspected. To be reported any defect to superintendent immediately. To be refittednozzle ring. - To be carried out ultrasonic measurement of wall thickness around the cooling water space andpartition wall and record all readings for future reference. - To be reassembled M/E Turbocharger to original using bearings, Lub Oil Pumps, and sealingbushes (owner supply). All necessary clearances and shaft deflections to be taken and recorded and witnessed by C/E. - To be replenished Lub Oil Sump with ship supplied turbine oil to required level. - To be reinstalled back all connections e.g. tachometer pick up, thermometers, etc.	Batal
6.1.6	<u>Scavenger Unit & Vibration Damper.(crew)</u> <i>Exclude spare part</i> To be clean scavenger unit and check vibration damper.	Batal
6.1.7	<u>Starting and Reversing Unit.(CREW)</u> <i>Exclude spare part</i> To be check starting air unit. To be check air distributor unit.	Batal
6.1.8	<u>Starting and Reversing Unit.(CREW)</u> <i>Exclude spare part</i> To be CHEMICAL clean OF cyl head & cylinder block no 1,2,3,4,5 and 6.	Batal
6.1.9	<u>Main Engine :</u> Overhaul ME Cylinder No.5 and renew Cylinder Liner and O ring.	Owner
6.2	<u>Auxiliary Engine Plant no 1 & 2</u> <i>Exclude spare part</i> PIC: 2 nd Engineer Maker: Yanmar Type: S165L-UN X 400 KVA x 2 No. of cylinder / bore / stroke: 6 x 165 mm x 210 mm To be provided labours, necessary tools, material, crange, and transportation to accomplish the following works. To be arranged Maker's Service Engineer to supervise the entire overhaul. Service Engineer attendance	

No./A/C	Job Description	Keterangan
	cost to be included in the yard's quotation.	Owner
6.2.1	<u>Auxiliary Engine No. 1, No. 2</u> <i>Exclude spare part</i> - To be checked condition and timing of camshaft for valve and fuel injection pump, renewed if necessary. - To be measured and recorded all unit and taken picture for evidence . - To be renewed LO carter and cleaned crankcase for all G/E.	Batal
6.2.2	<u>A/E Air Cooler</u> <i>Exclude spare part</i> - To be opened up and transport to workshop for chemically cleaning water and air side. - To be opened up both covers and apply apexior to inner surface. - To be renewed zinc anode, upon completion restore above as original - To be carried out hydrostatic pressure test 4 kg/cm2 witnessed by C/E and O/S. Realisasi : Service & overhaul air cooler AE kanan kiri (2 unit), sbb : - Bongkar pasang (material lama) > Mur baut pondasi M16 x 50 mm x 4 buah > Cover kanan kiri x 4 buah > Baut cover kanan kiri M10 x 25 mm x 52 buah > Cover atas bawah x 4 buah > Mur coover atas bawah M12 x 25 mm x 52 buah - Ganti baru : (supply dock) > Zinc anode pada cover x 8 buah > Packing karet 4 mm x 4 buah > Packing tomo 2 mm x 4 buah - Perendaman air cooler dg chemical & air tawar/sirkulasi - Pembersihan/pelancaran kisi-2 & pipa cubing yg buntu - Hydro test tekanan 0.2 – 0.3 bar/3 kg, sbb : (buat baru alat u/ pengepresan hydro test) > Plat 450 x 310 x 12 mm x 2 buah > Bor lubang plat dia 12 mm x 44 buah > Packing karet 450 x 310 x 4 mm x 2 buah > As drat M10 x 500 mm x 8 buah > Mur & ring plat M10 x 32 buah	Selesai
6.2.3	<u>A/E Alternator No. 1 and No. 2 (861011)</u> <i>Exclude spare part</i> Model: SHINKO TVLI-GJ-605 Maker: SHINKO ELECTRIC - To be checked and cleaned Alternator by electric cleaner, refurbished if necessary. - To be checked condition of Alternator bearing, renewed if necessary. - To be checked and tested safety device for Alternator and recorded for all jobs	Batal
6.2.4	<u>A/E Safety Device (651068)</u> <i>Exclude spare part</i> - To be arranged expert or specialist company for maintenance and testing all safety device. - To be checked and tested all safety devices for all G/E must be done and result good in order to and recorded. - To be renewed part for safety device if any once faulty. Note: All parts renewed to be subjected to O/S approval and spare stock from ship to be utilized.	Owner
6.2.5	<u>Exhaust Gas Turbocharger No. 1,2, (Type: RU110-1A)</u> <i>Exclude spare part</i> - Dismantling and draw out rotor - Cleaned rotor turbine blade, turbine nozzle ring and casing - Renew inner part (yard supply) - Balancing, measure and record of clearance.	Batal
6.2.6	<u>Governor</u> <i>Exclude spare part</i> Governor no 1, 2 to be sent to specialist company for service and calibration .The parts renewed should be confirm by OS.On Completion to re-install in original condition , running test witness by CE or OS	

No./A/C	Job Description	Keterangan
	Safety equipments install, governor servomotor and synchronizing system should be test and adjusted for class surveyor inspection .On completion to issued certificate.	) ) Batal
6.2.7	<u>LO and FW Attach Pump</u> <i>Exclude spare part</i>)
	- To be overhaul LO & HT Attach Pump)
	- Renew ball bearing, mechanical seal.)
	- On completion, restore as original condition and doing running test.	) Owner
6.3	<u>Steering Gear</u>)
403001	PIC: 2 nd Engineer)
	<i>Exclude spare part</i>)
	To be provided labors, necessary tools, materials, transportation, and all necessary accessories works to carry out the following works:)
	- To be isolated power supply. To be removed cable to electric motor. To be disconnected suction and delivery connections. To be removed mounting bolts for motor pump unit and then place aside.)
	To be uncoupled pump from electric motor. To be pumped then to strip down completely.)
	- To be cleaned all parts for inspection. To be checked drive and driven gear teeth surfaces.)
	To be checked bearing metals and bearing housing for abnormal wear. To be checked drive and drivenshafts for flaws on sliding surface. To be checked pump casing for erosion wear.)
	- To be reassembled pump in reversed order with new jointing. To be coupled back motor and pump unit.)
	To be remounted and secured motor pump unit. To be coupled back motor and pump coupling.)
	To be reconnected suction and delivery connections.)
	- To be reconnected cable to electric motor. To be re-established power supply.)
	- To be removed all dust and dirt accumulated in the pump starter panel.)
	To be got service all magnetic contactors and tighten all terminal connections.)
	- To be refilled system oil, tested pump, and confirmed operation is satisfactory.)
	To be simulated low level alarm in hydraulic oil tank and confirmed activation of the safematic valve system , visual and audible alarm.)
	- To be checked, calibrated, and tested Safety Device.	) Batal
6.4	<u>Engine Room Pumps</u> <i>Exclude spare part</i>)
800001	PIC: 2 nd Engineer)
	To be provided labours, necessary tools, and material to accomplish the following works:)
	- To be removed from bed plate, bring to the workshop, overhauled completely, and measured clearance.)
	- To be conducted wearing down parts that renewed as confirmed by O/S.)
	- To be checked, measured, and recorded clearance of mouth ring, impeller, ball bearing and bushing metal.)
	To be renewed spare parts as necessary.)
	- To be restored as original condition on completion and carried out running test witnessed by C/E and O/S.)
	- To be submitted record for Class Surveyor.)
	The pumps below shall be carried out the above job standards:)
	Centrifugal Pump)
	6.6.1-1. Main Cooling SW Pump No. 1)
	6.6.1-2. M/E FW Cooling Pump No. 1 and No. 2)
	6.6.1-3. SW Service Pump)
	6.6.1-4. Fire & GS Pump)
	6.6.1-5. Fire & Bilge Ballast Pump)
	6.6.1-6. FW Service Pump no 1 and 2)
	6.6.1-7. IGG Cool SW Pump)
	Screw and Gear Pump)
	6.6.2-1. Main Engine LO pump)
	6.6.2-2. Main Engine FO supply Pump)
	6.6.2-3. Heavy FO transfer pump)
	6.6.2-4. DFO Transfer Pump)
	6.6.2-5. LO Transfer Pump)
	6.6.2-6. Cyl.Oil Transfer Pump)

[illegible]

No./A/C	Job Description	Keterangan
6.6 731021	Type: SCION TF - To be overhauled Main Air Compressor No. 2 - To be renew Piston Ring, Piston if necessary - To be renew cylinder liner. - To be changed or renewed all valves by spare. - To be renew LO Carter. - To be measure and record all units of parts and taken picture for evidence. - To be repair for Auto-Operation and Safety Device to be installed and tested for safetyoperation. - On completion to reassembled all components as original and carry out running test.	Owner
	Main Air Reservoir	
	PIC: 2 nd Engineer	
	To be provided labours, necessary tools, and material to accomplish the following works:	
	1. Main Air Reservoir No 1 & 2 <i>Exclude spare part</i>	
	Maker: Kanazawa CO, Ltd.	
	Specification: WP: 25 Kg/cm, Hydraulic TP: 48.5 bar, Capacity 1,100 liters	
	- To be opened up, checked, and cleaned inside part from sludge, and prepare for Class Surveyor inspection. To renew gasket door (yard supply).	
	- To be lapping valve check, test, and record safety device as follows:	
	a.) Main valve 1 pc b.) Discharge valve 1pc c.) Auto drain trap 2 sets. d.) Pressure reducing valve 2 sets, setting pressure = 9 kg/cm2. e.) Safety valve 2 sets, setting pressure = 33 kg/cm2.	
	- To check and test auto-start and auto-stop for operation Main Air Compressor. - To be test Safety with pressure 33 kg/cm2 and witness by CE or OS - On completion, restore above as original.	Batal
	2. Emergency Air Reservoir <i>Exclude spare part</i>	
	Maker : YANMAR, Ltd.	
	Specification: WP: 25Kg/cm2, Hydraulic TP: 48.5 bar, Capacity 100 liters	
	- To be open up manhole - To be checked and cleaned inside part from sludge, tested pressure, and recorded by issuecertificate. Prepare for Class Surveyor Inspection.	
	- To be renewed gasket manhole by yard supply. - To be open, lapping & service The following valves :	
	a.) Main valve Globe valve b.) Drain valve c.) Manometer valve d.) Safety valve	
	- To be test Safety with pressure 7.7 kg/cm2 and witness by CE or OS - On completion, restore above as original.	Batal
	3. Service Air Reservoir	
	Heat Exchangers <i>Exclude spare part</i>	
6.7	PIC: 2 nd Engineer	
	To be provided labours, necessary tools, and material to accomplish the following works:	
	- To be open up and transported to workshop for cleaning chemically by using water and air side. - To be opened up both covers and applied apexior No. 3 to inner surface. - To be renew Zinc Anode. - To be restore above works as original upon completion. - To be carried out hydrostatic pressure test 13.5 kg/cm2 witnessed by C/E and O/S. - To be loosen tightening nuts for pressure plate. To be shifted backward the pressure plates. To be removed cooler plate stack and send to authorized service center for cleaning and checking . Plates of cooler to soak in chemical (inhibited acid) bath to remove scale deposit	

No./A/C	Job Description	Keterangan
	<p>and then washdown with fresh water. To be carried out crack test on each plates with dye penetrant under Uvlight inspection. To be checked and confirmed all gasket on plates are in good condition.</p> <p>To berenewed gasket as necessary with (yard supply) material. To be delivered back onboard cooler plate stacks. To be cleaned up the surface on the frame end plates, checked, and confirmed lining on connections are in good condition and then reassemble plate stacks and pressure platesas original position.</p> <p>- To carried out pressure test on the cooler and confirmed tightness.</p> <p>- To be Renew cover M/E LO Cooler cover Inlet side.</p> <p>List of Heat Exchangers to be carried out scope of works above as follows:</p> <p>- FO Heater for FO Purifier No. 1 & 2.</p> <p>- Main FO Heater M/E.</p> <p>- Heater FO settling tank.</p> <p>- Heater FO service tank.</p> <p>- Heater FO sludge tank.</p> <p>- Air Conditioning Condenser.</p> <p>- M/E Jacket FW Cooler And Repair Cover.</p> <p>- M/E LO Cooler.</p> <p>- Refrigerators Condenser and Repair Cover.</p>	
6.8	MARPOL Equipments	Exclude spare part
489087	<p>PIC: Chief Engineer and Technical Superintendent</p> <p>To arrange maker's Service Engineer, Expert or specialist company with necessary tools and material to carry out general servicing and inspection of the equipment. The work scope shall include but not limited to the followings:</p>	
6.9.1	Incinerator Plant	Exclude spare part
	<p>Maker: MIURA</p> <p>Model: BGW-10</p> <p>- To be check, clean, and re cemented wall inside burning chamber if necessary .</p> <p>- To be check and cleaned condition of primary blower.</p> <p>- To be repair or renew if necessary solenoid air valve for operating burning sludge.</p> <p>- To be renew gasket for door chamber by shore supply.</p> <p>- To be check and test safety device and record.</p> <p>- To be renew solenoid valve for FO and check electric system</p>	
6.9.1	Oily Water Separator	Exclude spare part
	<p>Maker: Taiko Kikai Industries,.Co Ltd</p> <p>Type : MSC-10</p> <p>- To be Renew 1st Filter and 2nd Filter.</p> <p>- To be clean inside the Tube and Filters.</p> <p>- To be overhaul condition of bilge pump, overhaul if necessary.</p> <p>- To be check and test all alarm system and clean tube sensor for 15 ppm alarm.</p> <p>Calibration Certificate to be issued</p>	
6.9.3	Sewage System Plant	Exclude spare part
	<p>Maker: Taiko Kikai Industries, Co., Ltd.</p> <p>Type: SBT-25</p> <p>- To be clean inside the tank by circulating SW or FW.</p> <p>- To be overhaul of Ejector Pump and Discharge Pump.</p> <p>- To be check and repair Auto-Operation for discharging Pump and Blowe</p>	
220056	Engine Room Tank Cleaning	
220057	<p>PIC: 2nd Engineer</p> <p>To provide labour, necessary tools, ventilation, and lighting to accomplish the following works:</p> <p>- To be opened up manhole.</p> <p>- To be cleaned manually the below listed of tanks:</p>	

No./A/C	Job Description	Keterangan
	<p>1) No. 1C FO Tank capacity 370 m3 2) No. 2C FO Tank capacity 96 m3 3) No 3C FO Tank capacity 94 m3 4) NO 4P,S FO Tank capacity 69x2 m3 5) NO 5P,S DO Tank capacity 72.98x2 m3 6) NO 6C DO Tank capacity 53.4 m3 7) Incinerator Waste Oil Tank capacity 1.0 m3 8) MDO Service Tank capacity 1.5 m3 9) MDO Settling Tank capacity 1.5 m3 10) Oil Bilge Tank capacity 12.4 m3 11) Scavenge Air Drain Tank capacity 4.0m3 12) Sludge Tank capacity 8.2 m3 13) Stuffing Box LO Drain Tank capacity 3.4 m3 14) G/E LO settling tank 15) M/E LO Settling tank 16) M/E LO Sump tank 17) Residue Oil Tank and check heater coil pipe. 18) Bilge Tank and check heater coil pipe. To be removed and disposed shore excessive mud around 250 litres totally. To be prepared the above tanks for Class Survey.</p> <p>Realisasi :</p> <ul style="list-style-type: none"> - Cleaning bilge tank kap 12.4 m³ <i>sebanyak 1 unit</i> - Final cleaning bilge tank kap 12.4 m³ <i>sebanyak 1 unit</i> - Cleaning sludge tank kanan kap 8.2 m³ <i>sebanyak 1 unit</i> 	Selesai
6.9	<p><u>Electrical System</u> <i>Exclude spare part</i></p> <p>PIC: Chief Engineer and Technical Superintendent</p> <p>To arrange maker's Service Engineer, Expert or specialist company with necessary tools and material to carry out general servicing and inspection of the equipment. The work scope shall include but not limited to the followings:</p> <p><u>1. Electric Panel Main Switch Board in Engine Control Room and Emergency Switch Board in Emergency Generator Room</u> <i>Spare part supply owner</i></p> <ul style="list-style-type: none"> - The safety device of main switchboard to be check and maintenance by expert. - The synchronizing , over current trip and release power check and test should be done witness by surveyor/OS. On completion of the above, should be issued certificate report. - To be checked condition and cleaned. - The meters equipments to be calibration by specialist and adjusted/correction.for 3 Generator (Voltmeter, Ampere meter, Hz meter, kW) and issued certificate. - To be check and calibrated Ampere meter, Voltmeter, Insulation meter for 440V feeder panel and 220V feeder panel and issued certificate. - To be measure insulation resistance and record submitted to OS. <p><u>2. Electromotor (898001)</u></p> <ul style="list-style-type: none"> - To be overhauled completely by chemically cleaning rotor and stator bake and varnish. - To be renewed ball bearings. - To be reassembled properly upon completion. - To be carried out running and load test witnessed by C/E nad O/S. - To be measure insulation resistance and record submitted to OS. <p>- Megger Test</p> <p>List of the electromotors as follows:</p> <ol style="list-style-type: none"> 1) Main Cooling SW Pump No. 1 : 11 KW 2) FW Cooling Pump No. 1 and No. 2: 3.7 KW 3) SW Ejector Pump: 19 KW 4) Fire GS Pump and Fire Bilge Ballast Pump : 37 KW 5) SW Service Pump: 11 KW 	

No./A/C	Job Description	Keterangan
	<p>6) Spray Pump: 90 KW 7) IGG Pump: 11 KW 8) Main Air Compressor No. 1& 2 : 9.6 KW 9) FW Hydrophore Service Pump No. 1 and No. 2 : 3.7 KW 10) Hot Water Circulating pump: 0.75 KW 11) Main LO Pump No. 1 and No. 2: 18.5 KW 12) Cylinder Oil Transfer Pump: 1.5 KW 13) LO System Transfer Pump: 1.5 KW 14) LO Purifier No. 1 and No. 2 : 3.7 KW 15) FO Purifier No. 1 and No. 2: 5.5 KW 16) FO Supply Pump No. 1 and No. 2: 1.25 KW 17) FO Transfer Pump: 1.5 KW 18) DO Transfer Pump: 1.5 KW 19) Bilge Transfer Pump: 1.5 KW 20) Sludge Pump: 2.2 KW 21) Refrigeration Compressor No. 1 and No. 2 : 3.5 KW 22) Elmot Compressor AC Accommodation : 34.5 KW 23) Elmot hyd steering gear no 1 & 2 : 11 KW 24) Elmot sanitary exhaust fan</p> <p><u>3. Monitoring Control System (Safety Device)</u></p> <ul style="list-style-type: none"> - To arrange expert for check , maintenance and repair the Machinery monitoring system parameter including all Press. Gauge and thermo control. - The all sensing parameter fitted to be calibration ,visual alarm, temperature and audible alarm function check and test ,and safety device function trip test witness by OS and CE - The parts need to change must be confirm by OS - Issued certificate on completion of that item. - The items of equipments need to check, maintenance and repair is bellows; Main Engine : LO trip ,LO low press ,over speed, fresh water temp ,FO Leakage. Thermocouple of Exhaust gas and in/ out TC Aux. Engine : LO trip ,LO low press ,fresh water temp ,over speed. Boiler system : Low water level ,low low water level ,miss fire Separator : FO leakage alarm Steering system : LO low press , auto steering alarm. Power pack Unit Purifier Main air compressor <p><u>4. Main Lighting Section Board/s, Protective device & Fittings.</u></p> <ul style="list-style-type: none"> - To check and service the Lighting system of vessel install. Monitoring control system of lighting to be test witness by Surveyor and OS. - The all parts renewed should be confirm by OS. - Emergency Lightings of vessel install to be test witness by Surveyor and OS. - On completion of the above progress to issued certificate. <p><u>5. Accommodation Alarm System.</u></p> <ul style="list-style-type: none"> - To carried out check and maintenance the alarm for accommodation by specialist with scope : general alarm system public addressor Visual and audible alarm of fire detection system - The above parts must be in good order, the repair or renewed parts needed must be confirm by OS. On completion to carried out test witness by surveyor. <p><u>6. Auto-Telephone System</u></p> <ul style="list-style-type: none"> - To be repair telephone unit for common battery telephone at Steering Room, renewed if necessary. <p><u>7. Bilge Level Detection System</u></p> <ul style="list-style-type: none"> - To carried out check and maintenance for bilge Level Detection system of E/R space area by specialist. Floater parts and sensing should be calibration and certificate issued. 	

No./A/C	Job Description	Keterangan
	<p>e. To be renew butterfly valve by pass Ballast and GS pump</p> <p>f. SW Cool suction Service Pump. Material: - Pipe 4" : 1840 mm</p> <ul style="list-style-type: none"> - Flange : 5 paces - Elbow 900 : 2 Pc - Mur baut - Packing <p>g. SW Cool discharge for A/E Material: - Pipe 2.5" sch 40 x (1300 + 100 + 600)</p> <ul style="list-style-type: none"> - Flange 2,5" 5K : 2 pcs - Elbow 2,5" sch 40 : 3pcs - Mur baut - Packing <p>h. SW Cool AE from GS Pump Material: - Pipe 4" : 1200 mm</p> <ul style="list-style-type: none"> - Flange: 4 pcs - Mur baut - Packing <p>i. Ventilation pipe from DO 6C Material: - Pipe 2.5" : 3100 mm</p> <ul style="list-style-type: none"> - Flange : 2 pcs - Elbow 90o : 1 pc - Mur baut - Packing <p>j. SW suction ME service Pump from sea chest Material: - Pipe 6" x 400</p> <ul style="list-style-type: none"> Flange 6" 5K Blank plate dia. 170 x 10mm - Mur baut - Packing <p>Material: - Pipe 3" x 100</p> <ul style="list-style-type: none"> Flange 3" 5K - Mur baut - Packing <p>Material: - Pipe 5" x (200+200+100)</p> <ul style="list-style-type: none"> Flange 5" 5K - Mur baut - Packing <p>Material: - Pipe 8" x 300</p> <ul style="list-style-type: none"> Flange 8" 5K Blank plate dia. 220 x 12mm Blank plate dia. 320 x 12mm + handle - Mur baut - Packing <p>k. SW pipe inlet service pump from sea chest Material: - Pipe 4" x (500+1300+100+600+100)</p> <ul style="list-style-type: none"> Flange 4" 5K Elbow 4" sch 40 - Mur baut - Packing <p>l. SW pipe to Intercooler M/E Material: - Pipe 3" x (350+350+250+100)</p>	

No./A/C	Job Description	Keterangan
	<p>Flange 3" 5K</p> <p>Elbow 3" sch 40</p> <p>- Mur baut</p> <p>- Packing</p> <p>m. SW pipe to LO cooler M/E</p> <p>Material: - Pipe A80 : 1000 mm</p> <p>- Flange : 2 pcs</p> <p>- Elbow 90o : 1 pc</p> <p>- Mur baut</p> <p>- Packing</p> <p>n. SW pipe distributor suction SWC M/E</p> <p>Material: - Pipe 5" x (600+100+100)</p> <p>Flange 5" 5K</p> <p>Blank plate dia. 142 x 10mm</p> <p>- Mur baut</p> <p>- Packing</p> <p>o. SW pipe for OWS</p> <p>Material: - Pipe A32 : 3500 mm</p> <p>- Flange : 3 pcs</p> <p>- Elbow 450 : 2 Pcs</p> <p>- Mur baut</p> <p>- Packing</p> <p>p. SW pipe for air pipe sea chest STBD</p> <p>Material: - Pipe 2" x 1500</p> <p>Flange 2" 5K</p> <p>Elbow 2" sch 40</p> <p>Sock sleeve 2"</p> <p>- Mur baut</p> <p>- Packing</p> <p>q. SW Pipe for discharge SWC M/E to cooler</p> <p>Material: - Pipe A80 : 2000 mm</p> <p>- Flange : 2 pcs</p> <p>- Elbow 900and 450 : 1 Pcs</p> <p>- Mur baut</p> <p>- Packing</p> <p>REWELD</p> <p>r. SW pipe cooling for AC Accommodation</p> <p>Material: - Pipe 3" x (250+800)</p> <p>Flange 3" 5K</p> <p>- Mur baut</p> <p>- Packing</p> <p>Material: - Pipe 1" x (200+450+1250+250+650+1100+300+700+100)</p> <p>Flange 1" 5K</p> <p>Elbow 1" sch 40</p> <p>- Mur baut</p> <p>- Packing</p> <p>Material: - Pipe 1,5" x (1800+200)</p> <p>Flange 1,5" 5K</p> <p>Elbow 1,5" sch 40</p> <p>- Mur baut</p> <p>- Packing</p> <p>Material: - Pipe 2.5" sch 40 x (900+300)</p> <p>- Flange 2,5" 5K</p>	

No./A/C	Job Description	Keterangan
	<div>- Elbow 2,5" sch 40</div> <div>- Mur baut</div> <div>- Packing</div> <div>s. SW pipe for FWG</div> <div>Material: - Pipe A80 : 3100 mm</div> <div>- Flange : 6 pcs</div> <div>- Elbow 900 : 4 Pcs</div> <div>- Elbow 450 : 1 Pcs</div> <div>- Mur baut</div> <div>- Packing</div> <div>t. SW Pipe cooling for expansion Main Air Compressor</div> <div>Material: - Pipe 1,5" x (200+550+600)</div> <div>Flange 1,5" 5K</div> <div>Elbow 1,5" sch 40</div> <div>- Mur baut</div> <div>- Packing</div> <div>Material: - Pipe 1" x (600+900+300)</div> <div>Flange 1" 5K</div> <div>Elbow 1" sch 40</div> <div>- Mur baut</div> <div>- Packing</div> <div>u. SW Pipe Cooling for distributor Service Pump</div> <div>Material: - Pipe 5" x 1000</div> <div>Flange 5" 5K</div> <div>Elbow 5" sch 40</div> <div>Blank plate dia. 142 x 10mm</div> <div>- Mur baut</div> <div>- Packing</div> <div>Material: - Pipe 3" x 100</div> <div>Flange 3" 5K</div> <div>- Mur baut</div> <div>- Packing</div> <div>Material: - Pipe 2,5" x 100</div> <div>Flange 2,5" 5K</div> <div>- Mur baut</div> <div>- Packing</div> <div>Material: - Pipe 1" x 100</div> <div>Flange 1" 5K</div> <div>- Mur baut</div> <div>- Packing</div> <div>Material: - Pipe 1,5" x 100</div> <div>Flange 1,5" 5K</div> <div>- Mur baut</div> <div>- Packing</div> <div>Realisasi</div> <div>Diganti baru pipa manipol di Kamar Mesin</div> <div>bahan pipa sch.40 seamless, ukuran :</div> <div>(Material suply Owner dan dikerjakan YWTS)</div> <div>- Pipa dia.</div> <div>6" x 1070 mm</div> <div>6" x 140 mm</div> <div>2 1/2" x 70 mm</div> <div>2 1/2" x 200 mm</div> <div>6" x 70 mm</div> <div>5" x 70 mm</div> <div>Elbow dia.</div> <div>2 1/2" x 1 buah</div> <div>Flange 5K</div> <div>6" x 4 buah</div>	

No./A/C	Job Description						Keterangan
	2 1/2"	x	2 buah)
	5"	x	1 buah)
	Diganti baru pipa scupper di Kamar Mesin)
	bahan pipa sch.40 seamless, ukuran :)
	(Material suply Owner dan dikerjakan JMI))
	- Pipa dia.	3"	x	620 mm)
		3"	x	150 mm)
	Elbow dia.	3"	x	1 buah)
	Flange 5K	3"	x	2 buah)
	Mur baut dia.	5/8" x 2.5"	x	16 buah)
	Packing karet		x	2 buah)
	Dipasang baru flange 3" - 5K x 2 bh di pipa lama)
)
	Diganti baru pipa udara Sea Chest di Kamar Mesin sebelah kanan)
	bahan pipa sch.40 galvanis, ukuran :)
	(Material suply Owner dan dikerjakan JMI))
	- Pipa dia.	2"	x	620 mm)
		2"	x	150 mm)
	Elbow dia.	2"	x	2 buah)
	Flange 5K	2"	x	1 buah)
	Mur baut dia.	1/2" x 2"	x	4 buah)
	Packing karet		x	1 buah)
	Soch pipa dia.	2 1/2"	x	100 mm	x	1 buah)
)
	Diganti baru pipa FW Expantion Tank di Kamar Mesin sebelah kiri)
	bahan pipa sch.40 seamless, ukuran :)
	(Material suply Owner dan dikerjakan JMI))
	- Pipa dia.	1"	x	240 mm)
		1"	x	1500 mm)
	Elbow dia.	1"	x	1 buah)
	Flange 5K	1"	x	2 buah)
	Mur baut dia.	3/8" x 1.5"	x	8 buah)
	Packing karet		x	2 buah)
)
	Diganti baru pipa AC Akomodasi Ruang Store di Kamar Mesin sebelah kiri)
	bahan pipa sch.40 seamless, ukuran :)
	(Material suply Owner dan dikerjakan JMI))
	- Pipa dia.	2 1/2"	x	320 mm)
		2 1/2"	x	900 mm)
	Elbow dia.	2 1/2"	x	1 buah)
	Flange 5K	2 1/2"	x	2 buah)
	Mur baut dia.	1/2" x 2"	x	8 buah)
	Packing karet		x	2 buah)
)
	- Pipa dia.	1 1/2"	x	240 mm)
		1 1/2"	x	1300 mm)
	Elbow dia.	1 1/2"	x	2 buah)
	Flange 5K	1 1/2"	x	2 buah)
	Mur baut dia.	1/2" x 2"	x	8 buah)
	Packing karet		x	2 buah)
	Dipasang baru flange 1 1/2" - 5K x 1 bh di pipa lama)
)
	Bongkar pasang pipa Inlet LO Cooler di Kamar Mesin sebelah kiri)
	bahan pipa sch.40 seamless, ukuran :)
	(Material suply Owner dan dikerjakan JMI))
	- Pipa lama dia.	2 1/2"	x	200 mm)
		2 1/2"	x	400 mm)
		2 1/2"	x	520 mm)
	Elbow lama dia.	2 1/2"	x	2 buah)
	Flange lama	2 1/2"	x	2 buah)
	Mur baut dia.	1/2" x 2"	x	8 buah)
	Packing karet		x	2 buah)
	Dilaksanakan pengelasan ulang pipa dia. 2 1/2" x 2 kali jalan)
)

No./A/C	Job Description				Keterangan
	Diganti baru pipa FWG plant di Kamar Mesin sebelah kiri)
	bahan pipa sch.40 seamless, ukuran :)
	(Material suply Owner dan dikerjakan JMI))
	- Pipa dia.	2 1/2"	x	100 mm)
		2 1/2"	x	450 mm)
		2 1/2"	x	300 mm)
	Elbow dia.	2 1/2"	x	2 buah)
	Flange 5K	2 1/2"	x	2 buah)
	Mur baut dia.	1/2" x 2"	x	16 buah)
	Packing karet		x	4 buah)
	- Pipa dia.	2 1/2"	x	600 mm)
		2 1/2"	x	830 mm)
	Elbow dia.	2 1/2"	x	1 buah)
	Flange 5K	2 1/2"	x	2 buah)
	- Pipa dia.	2 1/2"	x	500 mm)
		2 1/2"	x	180 mm)
	Elbow dia.	2 1/2"	x	1 buah)
	Flange 5K	2 1/2"	x	2 buah)
					Selesai
	Diganti baru pipa Sea Chest di Kamar Mesin sebelah kiri)
	bahan pipa sch.40 seamless, ukuran :)
	(Material suply Owner dan dikerjakan JMI))
	- Pipa dia.	4"	x	440 mm)
		4"	x	240 mm)
		3"	x	140 mm)
	Elbow dia.	4"	x	1 buah)
	Flange 5K	4"	x	2 buah)
	Flange 5K	3"	x	1 buah)
	Mur baut dia.	5/8" x 2.5"	x	112 buah)
	Packing karet		x	14 buah)
	- Pipa dia.	5"	x	540 mm)
		5"	x	100 mm)
		5"	x	100 mm)
	Flange 10K	5"	x	1 buah)
	Flange 5K	5"	x	2 buah)
	Prop plat)
	Plat dia.	125	x	8 mm	x
	- Pipa dia.	4"	x	120 mm)
		4"	x	570 mm)
		4"	x	150 mm)
		4"	x	80 mm)
	Elbow dia.	4"	x	3 buah)
	Flange 5K	4"	x	2 buah)
	- Pipa dia.	4"	x	150 mm)
		4"	x	200 mm)
	Elbow dia.	4"	x	1 buah)
	Flange 5K	4"	x	1 buah)
	- Pipa dia.	6"	x	300 mm)
		5"	x	150 mm)
		5"	x	130 mm)
	Flange 5K	6"	x	1 buah)
	Flange 5K	5"	x	2 buah)

No./A/C	Job Description						Keterangan
	- Pipa dia.	5"	x	340 mm)
		5"	x	150 mm			
		3"	x	100 mm			
	Flange 5K	5"	x	2 buah			
	Flange 5K	3"	x	1 buah			
	Diganti baru pipa SW Service Pump di Kamar Mesin)
	bahan pipa sch.40 seamless, ukuran : (Material suply Owner dan dikerjakan JMI))
	- Pipa dia.	2 1/2"	x	200 mm)
		2 1/2"	x	550 mm)
		2 1/2"	x	1300 mm)
		2 1/2"	x	100 mm)
	Elbow dia.	2 1/2"	x	3 buah)
	Flange 5K	2 1/2"	x	2 buah)
	Mur baut dia.	5/8" x 2.5"	x	20 buah)
	Mur baut dia.	1/2" x 2"	x	16 buah)
	Mur baut dia.	3/8" x 1.5"	x	8 buah)
	Packing karet		x	9 buah)
	- Pipa dia.	5"	x	900 mm)
		5"	x	120 mm)
		1"	x	70 mm)
		1 1/2"	x	80 mm)
		2 1/2"	x	100 mm)
		3"	x	100 mm)
		1 1/2"	x	60 mm)
		2"	x	80 mm)
	Elbow dia.	5"	x	1 buah)
	Flange 5K	5"	x	2 buah)
		1"	x	1 buah)
		1 1/2"	x	1 buah)
		2 1/2"	x	1 buah)
		3"	x	1 buah)
		1 1/2"	x	1 buah)
	Modifikasi pipa isap pompa , sbb : (material lama))
	- Pipa sch.40 dia.	4"	x	1000 mm	x	1 buah)
	- Pipa sch.40 dia.	4"	x	200 mm	x	1 buah)
	- Pipa sch.40 dia.	4"	x	500 mm	x	1 buah)
	- Pipa sch.40 dia.	4"	x	300 mm	x	1 buah)
	- Elbow dia	4"	x			2 buah)
	- Flange dia.	4"	x			3 buah)
	- Pipa sch.40 dia.	4"	x	100 mm	x	3 buah)
	- Pipa sch.40 dia.	4"	x	700 mm	x	1 buah)
	- Pipa sch.40 dia.	4"	x	150 mm	x	1 buah)
	- Elbow dia	4"	x			3 buah)
	- Flange dia.	4"	x			2 buah)
	- Sock dia	5"	x			1 buah)
	- Pipa sch.40 dia.	4"	x	150 mm	x	1 buah)
	- Flange dia.	4"	x			2 buah)
	- Butterfly valve dia	4"	x			1 buah)
	- Packing karet dia.	3"	x	5 mm	x	5 buah)
	- Mur baut dia.	5/8"	x	2 1/2" x		40 buah)
	Ganti baru pipa isap pompa pendingin ME, sbb :)
	- Pipa sch.40 dia.	4"	x	400 mm	x	1 buah)
	- Pipa sch.40 dia.	4"	x	200 mm	x	2 buah)

No./A/C	Job Description						Keterangan
	- Pipa sch.40 dia.	4"	x	100 mm	x	2 buah)
	- Elbow dia	4"	x			4 buah)
	- Flange dia.	4"	x			3 buah)
	- Angle valve dia	4"	x			1 buah)
	- Packing karet dia.	4"	x	5 mm	x	3 buah)
	- Mur baut dia.	5/8"	x	2 1/2" x		24 buah)
	- Blank flange dia	5"	x			1 buah)
	- Prop plat dia	5"	x	10 mm x		1 buah)
	- Packing karet dia.	5"	x	5 mm	x	1 buah)
	- Mur baut dia.	5/8"	x	2 1/2" x		8 buah)
	- Asistensi bongkar pasang lantai kamar mesin)
	Plat bordes)
	850	x	600 x	5 mm x		6 buah	) Selesai
	Ganti baru instalasi pipa pendingin AC control room, sbb :)
	- Pipa sch.40 dia.	1 1/2"	x	200 mm	x	1 buah)
	- Pipa sch.40 dia.	1 1/2"	x	1600 mm	x	1 buah)
	- Elbow dia	1 1/2"	x			1 buah)
	- Flange dia.	1 1/2"	x			1 buah)
	- Sock dia	2"	x			1 buah)
	- Pipa sch.40 dia.	1 1/2"	x	510 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	1 1/2"	x	300 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	1 1/2"	x	950 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	1 1/2"	x	2700 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	1 1/2"	x	400 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	1 1/2"	x	250 mm	x	1 buah (lama))
	- Elbow dia	1 1/2"	x			3 buah (lama))
	- Flange dia.	1 1/2"	x			3 buah (lama))
	- Pipa sch.40 dia.	1"	x	100 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	850 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	200 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	150 mm	x	1 buah)
	- Elbow dia	1"	x			1 buah)
	- Flange dia.	1"	x			4 buah)
	- Ubolt dia	1 1/2"	x			2 buah)
	- Packing karet dia.		x	3 mm	x	4 buah)
	- Mur baut dia.	1/2"	x	2" x		16 buah)
	Inlet)
	- Pipa sch.40 dia.	1"	x	200 mm	x	3 buah)
	- Pipa sch.40 dia.	1"	x	300 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	1400 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	510 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	1300 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	400 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	900 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	150 mm	x	1 buah)
	- Elbow dia	1"	x			5 buah)
	- Flange dia.	1"	x			8 buah)
	- Valve dia	1"	x			1 buah)
	- Ubolt dia	1"	x			3 buah)
	- Packing karet dia.	1"	x	3 mm	x	4 buah)
	- Mur baut dia.	3/8"	x	1 1/2" x		16 buah)
	Outlet)
	- Pipa sch.40 dia.	1"	x	100 mm	x	1 buah)

No./A/C	Job Description						Keterangan
	- Pipa sch.40 dia.	1"	x	300 mm	x	2 buah)
	- Pipa sch.40 dia.	1"	x	600 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	620 mm	x	1 buah)
	- Elbow dia	1"	x			2 buah)
	- Flange dia.	1"	x			3 buah)
	- Sock dia	1 1/2"	x			1 buah)
	- Pipa sch.40 dia.	1"	x	1500 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	600 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	1600 mm	x	2 buah)
	- Pipa sch.40 dia.	1"	x	100 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	200 mm	x	1 buah)
	- Elbow dia	1"	x			2 buah)
	- Flange dia.	1"	x			5 buah)
	- Ubolt dia	1"	x			6 buah)
	- Packing karet dia.	1"	x	3 mm	x	4 buah)
	- Mur baut dia.	3/8"	x	1 1/2" x		16 buah)
	Induk)
	- Pipa sch.40 dia.	3"	x	300 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	1000 mm	x	1 buah)
	- Elbow dia	3"	x			1 buah)
	- Flange dia.	3"	x			2 buah)
	- Packing karet dia.	3"	x	3 mm	x	2 buah)
	- Mur baut dia.		x	2" x		8 buah)
	- Pipa sch.40 dia.	3"	x	2100 mm	x	1 buah (lama))
	- Flange dia.	3"	x			2 buah (lama))
	- Packing karet dia.		x	3 mm	x	2 buah (lama))
	- Mur baut dia.	1/2"	x	2" x		8 buah (lama)	) Selesai
	Modifikasi pipa tekan pompa , sbb :)
	Pipa manifold)
	- Pipa sch.40 dia.	5"	x	930 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	5"	x	100 mm	x	1 buah (lama))
	- Elbow dia	5"	x			1 buah (lama))
	- Flange dia.	5"	x			1 buah (lama))
	- Prop plat dia	5"	x	10 mm x		1 buah (lama))
	Pipa cabang)
	- Pipa sch.40 dia.	3"	x	200 mm	x	1 buah)
	- Flange dia.	3"	x			1 buah)
	- Valve dia	3"	x			1 buah)
	- Pipa sch.40 dia.	2 1/2"	x	200 mm	x	1 buah)
	- Flange dia.	2 1/2"	x			1 buah)
	- Pipa sch.40 dia.	1 1/2"	x	200 mm	x	1 buah)
	- Flange dia.	1 1/2"	x			1 buah)
	- Pipa sch.40 dia.	1 1/4"	x	200 mm	x	1 buah)
	- Flange dia.	1 1/4"	x			1 buah)
	- Pipa sch.40 dia.	4"	x	150 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	4"	x	100 mm	x	2 buah (lama))
	- Pipa sch.40 dia.	4"	x	250 mm	x	1 buah (lama))
	- Elbow dia	4"	x			1 buah (lama))
	- Flange dia.	4"	x			5 buah (lama))
	- Valve dia	4"	x			1 buah (lama))

No./A/C	Job Description						Keterangan
	- Packing karet dia.	x	3 mm	x	9 buah)
	- Mur baut dia.	5/8"	x	2 1/2" x	72 buah		) Selesai
	Ganti baru instalasi pipa inter cooler ME, sbb :)
	Outlet)
	- Pipa sch.40 dia.	3"	x	100 mm	x	3 buah)
	- Pipa sch.40 dia.	3"	x	300 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	400 mm	x	1 buah)
	- Pipa sch.40 dia.	3"	x	360 mm	x	1 buah)
	- Elbow dia	3"	x			4 buah)
	- Flange dia.	3"	x			3 buah)
	- Valve dia	3"	x			1 buah)
	- Pipa sch.40 dia.	3"	x	1500 mm	x	1 buah (lama))
	- Flange dia.	3"	x			2 buah (lama))
	Inlet)
	- Pipa sch.40 dia.	2"	x	100 mm	x	3 buah (lama))
	- Pipa sch.40 dia.	3"	x	300 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	3"	x	700 mm	x	1 buah (lama))
	- Elbow dia	3"	x			3 buah (lama))
	- Flange dia.	3"	x			3 buah (lama))
	- Valve dia	3"	x			2 buah (lama))
	- Ubolt dia	3"	x			2 buah (lama))
	- Packing karet dia.	3"	x	5 mm	x	8 buah (lama))
	- Mur baut dia.	5/8"	x	2 1/2" x		32 buah (lama)	) Selesai
	Ganti baru instalasi pipa LO cooler ME, sbb :)
	- Pipa sch.40 dia.	3"	x	300 mm	x	1 buah)
	- Flange dia.	3"	x			2 buah)
	- Pipa sch.40 dia.	3"	x	300 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	3"	x	450 mm	x	1 buah (lama))
	- Elbow dia	3"	x			1 buah (lama))
	- Flange dia.	3"	x			2 buah (lama))
	- Valve dia	3"	x			1 buah (lama))
	- Ubolt dia	3"	x			1 buah (lama))
	- Packing karet dia.	3"	x	5 mm	x	3 buah (lama))
	- Mur baut dia.	5/8"	x	2 1/2" x		16 buah (lama)	) Selesai
	Ganti baru pipa FW expansion, sbb :)
	- Pipa sch.40 dia.	1"	x	400 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	600 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	610 mm	x	1 buah)
	- Elbow dia	1"	x			2 buah)
	- Flange dia.	1"	x			2 buah)
	- Ubolt dia	1 1/2"	x			4 buah)
	- Ubolt dia	2"	x			2 buah)
	- Pipa sch.40 dia.	1 1/4"	x	700 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	1 1/4"	x	200 mm	x	1 buah (lama))
	- Pipa sch.40 dia.	1 1/4"	x	910 mm	x	1 buah (lama))
	- Elbow dia	1 1/4"	x			2 buah (lama))
	- Flange dia.	1 1/4"	x			2 buah (lama))
	- Ubolt dia	1"	x			2 buah (lama))
	- Packing karet dia.		x	3 mm	x	3 buah (lama))
	- Mur baut dia.	3/8"	x	1 1/2" x		12 buah (lama)	) Selesai
	Ganti baru instalasi pipa pendingin AC central, sbb :)

No./A/C	Job Description							Keterangan
6.11 899001	Inlet)
	- Pipa sch.40 dia.	2 1/2"	x	200 mm	x	1 buah)
	- Flange dia.	2 1/2"	x	1 buah)
	- Hose spiral dia		x	45000 mm	x	1 buah)
	- Klem hose dia	2 1/2"	x	2 buah)
	- Pipa sch.40 dia.	2 1/2"	x	700 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	2 1/2"	x	600 mm	x	1 buah	(lama))
	- Elbow dia	2 1/2"	x	1 buah			(lama))
	- Flange dia.	2 1/2"	x	2 buah			(lama))
	- Pipa sch.40 dia.	6"	x	400 x 5 mm	x	1 buah	(lama))
	- Flange dia.	6"	x	2 buah			(lama))
	- Blang prop dia	6"	x	2 buah)
	- Pipa sch.40 dia.	2 1/2"	x	200 mm	x	2 buah)
	- Flange dia.	2 1/2"	x	2 buah)
	- Packing karet dia.	2 1/2"	x	3 mm	x	4 buah)
	- Mur baut dia.	1/2"	x	2" x		24 buah)
								Selesai
	Misscelaneous							
	PIC: Chief Engineer and Technical Superintendent							
	To be provided labours, necessary tools, and material to accomplish the following works:							
E/R Ventilation Fan P & S <i>Spare part supply owner</i>								
- To be Overhaul ER Fan P & S.								
- To be renew ball bearing.								
- To be renew air mesh filter.								
- To be carried out balancing.								
- To be checked and repaired flaps damper for E/R Fan (P/S).								
Fresh Water Generator								
- To be clean plate for condenser and evaporator by chemical.								
- To be renew gasket for evaporator plate.								
- To be carried out leakage test by running the SW Ejector pump.								
- To be renew cover plate Evaporator side								
- To be renew gasket plate Evaporator side and Condenser side								
- To be renew all Thermometer and Pressure gauge								
Air Conditioner Compressor and Fan								
- To be Check shaft mechanical seal.								
- To be Check Pulley for Compressor and Motor as per original size V-belt.								
- To be clean Electromotor, furnished if necessary, renewed bearing F&A, carried out mugger test, and recorded.								
- To be checked, carried out balancing fan, renewed bearing F&A.								
- To be clean Electromotor for fan, furnished if necessary, renewed bearing F&A, and carried out mugger test, and recorded.								
- To be repair Casing Evaporator or renew.								
- To be installed new Compressor unit completed (before only one compressor)								
- To be checked, tested safety device properly, and recorded.								
Air Control Reducer Valve in engine room								
- To be checked and repaired condition of air dyer machine by shore technician.								
- To be renewed spare part (yard supply), if necessary.								
FO Purifier No. 1 and No. 2.								
- To be overhauled bowl part FO Purifier No. 1 and LO Purifier No. 2.								

No./A/C	Job Description										Keterangan
	MGPS SYSTEM										
	- To be checked and repaired by shore technician due to not working properly.										
	- To be renewed electrode cathodes (yard supply)										
	Refrigerated Machine										
	- To be repair capillary pipe system.										
	- Cleaned condenser and repair cover condenser.										
	- Renew insulation tape.										
	- Renew solenoid valve for meat pipe.										
	- Renew expansion valve for meat and vegetable.										
	Renew any plate in Engine Room especially Ground floor										
	Earth Shaft Propeller										
	- To be Repair cable or renew										
	- To be renew carbon brush										
	- To be renew carbon brush plate.										
	Service all watertight door & renew seal										
	Spare Part Room.										
	- To be renew day lighting with Fluorescents Lamp (TL Lamp).										
	- To be renew day lighting special tools room with TL Lamp.										
	Fresh Water calorifier system										
	- To be Overhaul Fresh water pump for calorifier system.										
	- To be renew ball bearing.										
	- To be check heater and cleaning heater.										
	- To be carried out balancing of pump.										
	- To be check pipe line to accommodation.										
	Realisasi										
	Service electromotor blower engine room kiri, sbb :)
	- Bongkar pasang (material lama))
	> Tudung blower dia 1600 x 600 x 8 mm x 1 buah)
	Bracket tudung blower 170 x 125 x 12 mm x 6 buah)
	> Leher tudung blower dia 900 x 600 x 8 mm x 1 buah)
	> Rumah electromotor 1 buah)
	> Ectromotor x 1 buah)
	> Kipas blower x 1 buah)
	> Rotor electromotor 1 buah)
	> Tangga blower)
	Plat 1300 x 50 x 10 mm x 2 buah)
	170 x 50 x 10 mm x 4 buah)
	Besi esser dia 16 mm x 300 mm x 4 buah)
	> Connect disconnect kabel power blower)
	- Ganti baru : (supply dock))
	> Bearing 6308zz/c3 x 2 buah)
	> Packing karet 1010 x 1010 x 4 mm x 1 buah)
	> Mur baut tudung blower uk. 5/8" x 2" x 6 buah)
	> Mur baut anak tangga uk. 1/2" x 2" x 4 buah)
	> Mur baut uk. 5/8" x 2" x 20 buah)
	- Pemberian silicone red pd cover rotor										) Selesai
	Balancing rotor blower kamar mesin										) Selesai

No./A/C	Job Description						Keterangan
	Buat & pasang baru kisi-2 blower Engine Room kiri, sbb :)
	- Plat)
	1700	x	20 x	4	mm x	3 buah)
	1000	x	20 x	4	mm x	3 buah)
	300	x	20 x	4	mm x	9 buah)
	80	x	20 x	4	mm x	36 buah)
	- Mur baut dia.		1/2" x	1 1/2" x		19 buah)
	- Lubang dia		1/2" x			36 buah)
	- Kawat ram dia		1600 mm	x		1 buah	) Selesai

MV. GAS NURI ARIZONA



Chief Engineer

Captain

Semarang, Juli 2018
PT. YASA WAHANA TIRTA SAMUDERA

DJUPRIJADI
Kepala Produksi

Mengetahui:
Owner Surveyor
PT. SAMUDERA INDONESIA SHIP MANAGEMENET

FAHRUDDIN

LAPORAN HASIL PEKERJAAN
DOCKING REPORT

Nomor : SC1717548/LHP/YWTS
Tanggal : April 2018

Kepada
Yth. PT Pelayaran Eka Nuri Indra Pratama
C.o. PT. Samudera Indonesia Ship Management
Jakarta

1. GENERAL INFORMATION

Name of Ship : MV GAS NURI ARIZONA
Ship Owner : PT Pelayaran Eka Nuri Indra Pratama
Ship Manager : PT Samudera Indonesia Ship Management
Length Overall (LOA) : 105 m
Length Perpendicular (LPP) : 98.4 m
Breadth (B) : 19.8 m
Depth (D) : 8.6 m
Draft (Design) (T) : 5.976 m
Gross Tonnage : 5,087 GT

No./A/C	Job Description	Keterangan
3	<u>GENERAL SERVICE</u>	
3.23	<u>Final Cleaning</u>	
	Cleaning Engine Room	
	- Tangki darat kap 8 ton u/ transfer bbm dari kapal sebanyak 2 unit)
	- Cleaning got kamar mesin , air campur minyak & lumpur dikuras & dibuang ke darat.)
	- Bak penampungan limbah)
	- Final cleaning got kamar mesin	) Selesai
	Cleaning forecastle deck seluas 240 m ² , dikerjakan sebagai berikut :)
	- Water jet 240 M ²	) Selesai
	COT 1 & 2 bagian luar, dikerjakan sbb :)
	- Cleaning 990 M ²)
	- Water jet 990 M ²	) Selesai
	Dinding anjungan atas seluas 621 m ² , dikerjakan sbb :)
	- Cleaning 621 M ²)
	- Water jet 621 M ²	) Selesai
	Cleaning pasir dan sampah sisa pekerjaan, sbb :)
	- Forecastle store 1 Lot)
	- Void space 1 1 Lot)
	- Void space 2 1 Lot)
	- Main Deck 1 Lot	) Selesai
	Bulwark dan sekat Forecastle	
	- Cleaning 36 M ²)
	- Water jet 36 M ²	) Selesai
	Poop Deck, Bridge Deck, Dinding Bangunan Atas	
	- Cleaning 643 M ²)

No./A/C	Job Description							Keterangan
4.6	- Water jet 643 M ²							) Selesai
	Mark Painting)
	Diganti baru nama Pelabuhan Pendaftaran kapal di lambung buritan, ukuran :)
	- TANJUNG PRIOK)
	Plat	300	x	400	x	8 mm	x 11 bh)
		100	x	400	x	8 mm	x 1 bh	) Selesai
	Dipotong / diset huruf J A K A R T A, ukuran :)
	Plat lama	300	x	400	x	6 mm	x 7 bh	) Selesai
	Diganti baru huruf tanda Class (K R) di lambung tengah kanan kiri dengKerja tambah)
	Plat baru tebal 8 mm dan ukuran standart BKI kali 2 kanan kiri							) Selesai
4.7	Sea Chest and Gratings)
	Service strainer sea chest kiri di ruang mesin, sbb :)
	- Strainer)
	Pipa sch.80 dia.	20"	x	700 mm	x	1 buah	(lama))
	- Tutup strainer dia	20"	x	2 buah	(lama))
)
	- Pipa sch.80 dia.	12"	x	150 mm	x	2 buah	(lama))
	- Flange dia.	12"	x	2 buah	(lama))
)
	- Saringan strainer dia. 6")
	Plat SS dia	20"	x	700 mm	x	1 buah	(lama))
)
	- Pipa sch.80 dia.	12"	x	200 mm	x	2 buah	(lama))
	- Flange dia.	12"	x	4 buah	(lama))
	- Packing karet dia.	20"	x	5 mm	x	1 buah)
	- Packing karet dia.	12"	x	5 mm	x	4 buah)
	- Mur baut dia.	7/8"	x	3"	x	88 buah)
)
	- Asistensi bongkar pasang lantai kamar mesin)
	Plat bordes)
	800	x	600 x	6 mm	x	4 buah	(lama))
	700	x	600 x	6 mm	x	5 buah	(lama)	) Selesai
4.9	Propeller)
	Pelaksanaan NDT propeller sebanyak 1 unit							) Selesai
5.4	REPLATING)
	Replating top bracket doom 2 kanan kiri, plat ukuran :)
	- 650	x	70 x	8 mm	x	20 buah	(kanan))
	- 650	x	70 x	8 mm	x	22 buah	(kiri)	) Selesai
	Replating top bracket doom 1 kanan kiri, plat ukuran :)
	- 700	x	80 x 170 cm x 2 lapis	x	8 mm	x 18 buah	(kanan))
	- 700	x	65	x	8 mm	x 17 buah	(kiri)	) Selesai
	Replating top bracket Bullwark Maindeck kiri, plat ukuran :)
	- 900	x	70	x	8 mm	x 1 buah		) Selesai

No./A/C	Job Description						Keterangan
	Replating bracket bulwark depan forecastle kanan, plat ukuran :)
	- 500	x	250 x	8 mm x	1 buah)
	- 460	x	250 x	8 mm x	1 buah)
	450	x	80 x	8 mm x	1 buah	(top))
	440	x	80 x	8 mm x	1 buah	(top))
	- top bulwark)
	600	x	80 x	8 mm x	1 buah)
	900	x	80 x	8 mm x	1 buah)
	370	x	80 x	8 mm x	1 buah)
	900	x	80 x	8 mm x	1 buah		) Selesai
	Bracket bulwark depan forecastle kiri, plat ukuran :)
	- 470	x	250 x	8 mm x	1 buah)
	470	x	80 x	8 mm x	1 buah	(top)	) Selesai
	Bracket ventilasi ruang compressor, plat ukuran :)
	- 150	x	150 x	8 mm x	3 buah		) Selesai
	Bracket pengunci manhole store Forecastle, plat ukuran :)
	- 120	x	50 x	14 mm x	2 buah		) Selesai
	Ganti baru top tangga main deck ke poop deck kanan, plat ukuran :)
	- 3250	x	60 x	6 mm x	1 buah)
	- 600	x	60 x	6 mm x	1 buah		) Selesai
	Replating catwalk tengah , plat grating ukuran :)
	- 1000	x	700 x	30 mm x	3 buah)
	- List)
	1000	x	30 x	6 mm x	6 buah		) Selesai
	Doubling deck kamar mesin, plat ukuran :)
	- 400	x	360 x	6 mm x	1 buah)
	- 550	x	450 x	6 mm x	1 buah)
	- 600	x	430 x	6 mm x	1 buah)
	- 200	x	150 x	6 mm x	1 buah)
	- 200	x	100 x	6 mm x	1 buah		) Selesai
5.5	<u>Forecastle Deck</u>						
	Perbaiki pipa udara FOT di dalam Forecastle Store, sbb :)
	- Ketok pipa yang berlubang					1 Unit)
	- Fiber pipa Ø 5"	x	100 cm	x	4 lapis	1 Unit	) Selesai
	Service cover ventilasi Forecastle deck store, sbb :						) (material lama)
	- Plat)
	180	x	180 x	6 mm x	1 buah)
	- Engsel)
	70	x	30 x	6 mm x	5 buah)
	- Mur baut dia.		5/8" x	2" x	1 buah)
	- Baut kupu-2 dia		5/8" x	120 mm	x	1 buah	) Selesai

No./A/C	Job Description						Keterangan
	Bongkar pasang cover blower Motor Room, sbb : (material lama satu rangkaian utuh))
	- Cover luar)
	830	x	830 x	8 mm x	1 buah)
	- Cover dalam)
	500	x	500 x	8 mm x	1 buah)
	- Bracket cover)
	150	x	150 x	8 mm x	4 buah)
	- Dinding cover)
	2500	x	380 x	8 mm x	1 buah)
	- Bracket dinding)
	280	x	130 x	8 mm x	4 buah)
	- As drat dia	1 1/2"	x	300 mm	x	1 buah)
	- Bul)
	900	x	800 x	10 mm x	2 buah)
	- Cover luar)
	1040	x	1040 x	8 mm x	1 buah)
	- Cover dalam)
	660	x	660 x	8 mm x	1 buah)
	- Bracket cover)
	150	x	150 x	8 mm x	4 buah)
	- Dinding cover)
	3200	x	450 x	8 mm x	1 buah)
	- Bracket dinding)
	450	x	150 x	8 mm x	4 buah)
	- Mur baut dia.	5/8"	x	2" x	10 buah	(supply dock))
	- Bul)
	900	x	800 x	10 mm x	2 buah		) Selesai
	Replating cover blower Motor Room, plat ukuran :)
	- 1580	x	150 x	8 mm x	1 buah)
	- 900	x	150 x	8 mm x	1 buah)
	- Las ulang cover dalam blower 2 layer sepanjang :)
	150 mm x 24 titik)
	550 mm x 6 titik						) Selesai
	Ganti baru pipa cuci jangkar kanan kiri, sbb :)
	Bongkar pasang pipa cuci jangkar, sbl(material lama))
	- Pipa sch.40 dia.	1"	x	200 mm	x	1 buah)
	- Pipa sch.40 dia.	1"	x	100 mm	x	1 buah)
	- Flange dia.	1"	x	2 buah)
	- Globe valve dia	1"	x	1 buah)
	- Packing karet dia	1"	x	3 mm	x	2 buah)
	- Mur baut dia	1/2"	x	2"	x	8 buah	) Selesai
	Kanan)
	- Pipa sch.40 dia.	2"	x	350 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	700 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	1300 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	1200 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	100 mm	x	1 buah)
	- Elbow dia	2"	x	3 buah)

No./A/C	Job Description										Keterangan	
	- Flange dia.	2"	x	2 buah						Selesai		
	- Flange dia.	1"	x	1 buah								
	- Ubolt dia	2"	x	2 buah								
	- Packing karet dia	2"	x	3 mm	x	3	buah					
	- Mur baut dia	5/8"	x	2"	x	12	buah					
	- Pipa sch.40 dia.	2"	x	350 mm	x	1 buah						
	- Pipa sch.40 dia.	2"	x	600 mm	x	1 buah						
	- Pipa sch.40 dia.	2"	x	350 mm	x	1 buah						
	- Pipa sch.40 dia.	2"	x	100 mm	x	1 buah						
	- Elbow dia	2"	x	2 buah								
	- Flange dia.	2"	x	1 buah								
	- Lubang dia	2"	x	2 buah								
	- Pipa sch.40 dia.	1 1/2"	x	200 mm	x	3 buah						
	- Flange dia.	1 1/2"	x	3 buah								
	- Lubang dia	1 1/2"	x	2 buah								
	- Packing karet dia	2"	x	3 mm	x	4	buah					
	- Mur baut dia	5/8"	x	2"	x	16	buah					
	Kiri											
	- Pipa sch.40 dia.	2"	x	350 mm	x	1 buah						
	- Pipa sch.40 dia.	2"	x	600 mm	x	1 buah						
	- Pipa sch.40 dia.	2"	x	350 mm	x	1 buah						
	- Pipa sch.40 dia.	2"	x	100 mm	x	1 buah						
	- Elbow dia	2"	x	2 buah								
	- Flange dia.	2"	x	1 buah								
	- Prop plat dia	2"	x	10 mm	x	2	buah					
	- Pipa sch.40 dia.	1 1/2"	x	200 mm	x	3 buah						
	- Flange dia.	1 1/2"	x	3 buah								
	- Packing karet dia	2"	x	3 mm	x	4	buah					
	- Mur baut dia	5/8"	x	2"	x	16	buah					
	- Pipa sch.40 dia.	2"	x	800 mm	x	1 buah						
	- Pipa sch.40 dia.	2"	x	400 mm	x	1 buah						
	- Flange dia.	2"	x	1 buah								
	- Sock dia	2 1/2"	x	2 buah								
	- Packing karet dia	2"	x	3 mm	x	1	buah					
	- Mur baut dia	5/8"	x	2"	x	4	buah					
	- Pipa sch.40 dia.	2"	x	400 mm	x	1 buah						
	- Pipa sch.40 dia.	2"	x	200 mm	x	1 buah						
	- Elbow dia	2"	x	2 buah								
	- Flange dia.	2"	x	2 buah								
	- Packing karet dia	2"	x	3 mm	x	2	buah					
	- Mur baut dia	5/8"	x	2"	x	8	buah					
										Selesai		
	Ganti baru pipa udara WBT 1 P/S, sbb :											
	Kanan											
	- Pipa sch.80 dia.	5"	x	250 mm	x	1 buah						
	- Flange dia.	5"	x	2 buah								

[illegible]

No./A/C	Job Description						Keterangan
	Mur baut dia.	5/8" x 2"	x	6 buah)
)
	Top / dinding blower)
	Plat	150	x	1600	x	8 mm	x 2 bh
)
	Bongkar pasang tudung blower Void Space 2 di Main deck, ukuran :)
	- Plat)
	3250	x	470	x	6	mm x	1 buah diroll
	450	x	150	x	6	mm x	1 buah (lama)
	- Blower dia	41"	x	1 buah			(lama)
	- Plat dia	41"	x	6	mm x	1	buah (lama)
	- Mur baut dia.	5/8"	x	2"	x	6 buah)
	- Doubling batang blower)
	Plat)
	150	x	140	x	8	mm x	1 buah
)
	Ganti baru support pipa cargo & pemadam main deck 2 kanan kiri, sbb :)
	Kanan)
	- Siku)
	60	+	60	x	6	x 300	mm x 4 bh 20.00 kg
)
	- Doubling)
	600	x	600	x	8	mm x	4 buah= 90.43 kg
	- Lubang dia	14 mm	x	4 buah)
	- Ubolt dia	6"	x	2 buah)
	- Packing karet dia	150 x 50	x	5 mm	x	2	buah
	- Mur baut dia	1/2"	x	2"	x	8	buah
)
	- Doubling)
	600	x	600	x	8	mm x	4 buah= 90.43 kg
	- Lubang dia	14 mm	x	8 buah)
	- Ubolt dia	2"	x	4 buah)
	- Packing karet dia	600	x	5 mm	x	4	buah
)
	Kiri)
	- Siku)
	100	+	100	x	10	x 300	mm x 3 bh 14.13 kg
	- Lubang dia	14 mm	x	6 buah)
	- Ubolt dia	5"	x	3 buah)
)
	- Doubling)
	600	x	600	x	8	mm x	8 buah= 180.86 kg
	- Lubang dia	14 mm	x	8 buah)
	- Ubolt dia	4"	x	4 buah)
)
	- Doubling)
	600	x	600	x	8	mm x	6 buah= 135.65 kg
	- Lubang dia	14 mm	x	6 buah)
	- Ubolt dia	3"	x	3 buah)
)
	- Doubling)
	600	x	600	x	8	mm x	10 buah= 226.08 kg
)

No./A/C	Job Description										Keterangan
	- Lubang dia	14 mm	x	40 buah							Selesai
	- Ubolt dia	1 1/2"	x	10 buah							
	- Ubolt dia	2"	x	10 buah							
	Ganti baru support pipa cargo & pemadam main deck 1 kiri, sbb :										
	- Doubling										
	600	x	600 x	8 mm x	8 buah					180.86 kg	
	- Lubang dia	14 mm	x	8 buah							
	- Ubolt dia	4"	x	4 buah							
	- Doubling										
	600	x	600 x	8 mm x	6 buah					135.65 kg	
	- Lubang dia	14 mm	x	6 buah							
	- Ubolt dia	5"	x	3 buah							
	- Packing teflon dia	50 x 10	x	3 mm x	26 buah						
	- Packing karet dia	60 x 40	x	5 mm x	10 buah						Selesai
	Asistensi ganti baru support pipa di main deck :										
	Bongkar pasang grating										
	- 800	x	100 x	30 mm x	1 buah						
	- Mur baut dia	3/8"	x	2"	x	2 buah					Selesai
	Ganti baru support Deck Operation System valve WBT 3 kiri, sbb :										
	- siku										
	50	+	50 x	5 x	1000 mm x	8				bh	
	- Kupingan										
	100	x	50 x	12 mm x	1 buah						
	- Doubling										
	70	x	70 x	12 mm x	1 buah						Selesai
	Replating pelindung karet doom 1 & 2 kiri, plat ukuran :										
	- 3000	x	100 x	8 mm x	1 buah						
	- 3000	x	30 x	8 mm x	1 buah						
	- 3000	x	40 x	8 mm x	1 buah						
	- As drat SS dia	2"	x	mm x	30 buah						
	- Lubang		x	30 buah							
	- Mur dia		x	30 buah							Selesai
	Stel ulang pelindung karet doom 1 & 2 kiri, plat ukuran :										
	- 10000	x	100 x	8 mm x	1 buah						
	- 10000	x	30 x	8 mm x	1 buah						
	- As drat SS dia	2"	x	mm x	1 buah						
	- Mur dia		x	1 buah							Selesai
	Service air vent head WBT 7 C/P dan FOT										
	- Air vent head dia	4"	x	2 buah	(lama)						
	- Bor dia	10"	x	20 buah	(ambil baut patah)						
	- Tap & drat ulang	10"	x	20 buah							
	- Air vent head dia	4"	x	2 buah	(lama)						
	- Plat ventilasi	250 x 120	x	4 buah	(lama)						
	- Saringan	220 x 120	x	4 buah	(lama)						
	- Packing karet dia	4"	x	5 mm x	4 buah	(lama)					

No./A/C	Job Description										Keterangan
	- Mur baut dia	5/8"	x	2 1/2"	x	16	buah	(lama)	)		Selesai
	Ganti baru pipa FW di Void Space 2, sbb :)
	- Pipa sch.80 dia.	2 1/2"	x	2700 mm	x		1 buah))
	- Flange dia.	2 1/2"	x				1 buah))
	- Check valve dia	2 1/2"	x				1 buah	(lama)))
	- Ubolt dia	2 1/2"	x				1 buah))
	- Pipa sch.80 dia.	3"	x	100 mm	x		1 buah))
	- Packing karet dia	2 1/2"	x	3 mm	x	2	buah))
	- Mur baut dia	1/2"	x	2"	x	8	buah		)		Selesai
	Asistensi)
	- Bongkar insulation rockwool sekat		1,5	mtr	x	1,5	mtr	2 lembar	(lama)))
	- Pasang Pin insulation rockwool))
	- As drat		6	mm	x	120	mm	15 buah	(baru)))
	- Cup nut besi		M6					15 buah	(baru)))
	- Pasang insulation rockwool sekat		1,5	mtr	x	1,5	mtr	2 lembar	(lama)	)	Selesai
	Service air vent head FW kanan kiri)
	- Pipa sch.80 dia.	3"	x	550 mm	x		2 buah))
	- Flange dia.	3"	x				4 buah	(lama)))
	- Air vent head dia	3"	x				2 buah	(lama)))
	- Packing karet dia	3"	x	5 mm	x	2	buah	(lama)))
	- Mur baut dia	5/8"	x	2"	x	8	buah	(lama)	)		Selesai
	Bongkar ganti baru pipa bilge Void Space 1, sbb :)
	Pipa sch. 40 dia.	4"	x	2100 mm	x		1 buah))
	Pipa sch. 40 dia.	4"	x	500 mm	x		1 buah))
	Pipa sch. 40 dia.	4"	x	600 mm	x		1 buah))
	Elbow sch. 40 dia.	4"	x					3 buah))
	Sock Sleeve dia.	5"	x					2 buah	)		Selesai
	Bongkar ganti baru pipa bilge Void Space 2, sbb :)
	Pipa sch. 40 dia.	4"	x	2100 mm	x		1 buah))
	Pipa sch. 40 dia.	4"	x	500 mm	x		1 buah))
	Elbow sch. 40 dia.	4"	x					2 buah))
	Sock Sleeve dia.	5"	x					2 buah	)		Selesai
	Perbaikan oil spill box FOT & AEP Main Deck depan, sbb :)
	- Ketok spill box							1 Unit))
	- Dempul spill box yang berlubang							1 Unit))
	- Sandpaper spill box							1 Unit))
	- Fiber Spill box	140 x	70 cm	x	7 lapis			1 Unit))
	- Fiber Spill box	70 x	10 cm	x	7 lapis			1 Unit))
	- Fiber Spill box	140 x	10 cm	x	7 lapis			1 Unit))
	- Pasang stop kran sipl box di poop deck))
	- Sock drat			x	1/2"			1 buah))
	- Ball valve stainless			x	1/2"			1 buah	)		Selesai
	Perbaikan pipa udara FOT Main Deck kanan, sbb :)
	- Dempul pipa yang berlubang							2 Unit))

No./A/C	Job Description	Keterangan
	- Fiber pipa Ø 2,5" x 76 cm x 4 lapis 2 Unit	) Selesai
	Bongkar ganti baru Air Vent Head WBT 3 C/S 3" x 5K 1 Unit	) Selesai
	Ganti baru box panel ESD (material supply dock))
	- Ganti baru box panel ukuran 400 x 300 x 200 1 buah)
	- Pondasi box)
	Siku 50+50 x 300 x 5 mm x 2 buah)
	Mur baut dia 3/8" x 2" x 4 buah)
	- Asistensi connect disconnect kabel power ESD)
	- Pasang klem kabel 3 buah	) Selesai
	Plat deck seluas 505 m ² , dikerjakan sebagai berikut :)
	a. Ketok 505 M ²)
	b. Water jet 505 M ²)
	c. Sandblasting 505 M ²)
	d. Pengecatan :)
	- Cat Primer x 1 lapis 505 M ²)
	- Cat AC x 1 lapis 505 M ²)
	- Cat AF x 1 lapis 505 M ²)
	- Cat anti slip merah main deck kanan kiri 248 M ²)
	- Lis cat kuning 85 M ²)
	* Material cat supply owner	) Selesai
5.6.3.	CARGO TANK AREA	
	Ganti baru dry powder actuator box, sbb :)
	- Plat)
	860 x 800 x 4 mm x 1 buah)
	800 x 400 x 4 mm x 1 buah)
	700 x 20 x 4 mm x 4 buah)
	1120 x 20 x 4 mm x 2 buah)
	2400 x 30 x 4 mm x 2 buah)
	460 x 400 x 4 mm x 2 buah)
	- Bongkar pasang (material lama))
	> Handle & pengunci x 2 buah)
	> Engsel x 2 buah)
	> Neple dan selang tembaga x 2 buah)
	- Ganti baru : (material supply dock))
	> Pondasi tabung)
	Pipa sch.40 dia. 4" x 50 mm x 1 buah)
	> Pondasi box)
	UNP 50+100+50 x 400 x 6 mm x 2 buah)
	Siku 50+50 x 400 x 5 mm x 2 buah)
	Mur baut dia x 4 buah	) Selesai
	Bongkar pasang flexible join cargo, sbb : (material lama))
	- Pipa sch.80 dia. 6" x 300 mm x 2 buah)
	- Flange dia. 6" x 2 buah (lama))
	- Packing teflon dia 6" x 5 mm x 4 buah)
	- Mur baut dia 3/4" x 3" x 56 buah	) Selesai

No./A/C	Job Description										Keterangan	
5.7	Las ulang pipa hydroulic ESD)	
	- Pipa sch.80 dia.	12"	x	2000 mm	x	2 buah	(lama))		
	- Pipa sch.80 dia.	12"	x	3000 mm	x	1 buah	(lama))		
	- Elbow dia	12"	x	5 buah	(lama))		
	- T dia	12"	x	1 buah	(lama))		
)	
	- Asistensi bongkar pasang plat grating)	
	800	x	600 x	2"	buah	(lama)					) Selesai
	<u>Poop Deck and Accommodation Room</u>											
	Gun Room Dapur dikerjakan sbb :)	
	- Ganti baru dinding gandroom bahan stainless)	
	> Tripleks + SS	22.88 m ²									) Selesai
	Bongkar pasang tutup closed kamar mandi abk sebanyak 5 buah										) Selesai
	- Ganti baru :)	
	Dinding kamar mandi)	
	> Tripleks 22 mm	50 x 100 cm		x	3 buah)	
)	
	Kusen kamar mandi			x	3 buah						) Selesai
	Perbaikan dinding / sekat kamar mandi, sbb :)	
	- Bongkar dinding triplex	100	cm	x 50	cm x	22 mm	3 Unit)	
	- Pasang ganti baru dinding triplex	100	cm	x 50	cm x	22 mm	3 Unit)	
	- Fiber dinding)	
	- Sandpaper dinding	100	cm	x 20	cm		6 sisi)	
	- Fiber dinding	100	cm	x 20	cm x	2 lapis	6 sisi)	
	- Dempul sambungan dinding						3 unit				) Selesai
	Perbaikan kusen pintu kamar mandi, sbb :)	
	- Bongkar kusen	70	cm	x 50	cm x	(kanan kiri)	2 set)	
	- Pasang ganti baru kusen	70	cm	x 50	cm x	(kanan kiri)	2 set)	
	- Pasang sambungan kusen					(kanan kiri)	2 set)	
	- Pasang konstruksi tambahan kusen	65	cm	x 5	cm		2 Unit)	
	- Asistensi bongkar pasang pintu						2 Unit				) Selesai
	Replating tangga gangway kiri, sbb : (material lama))	
	- 70 + 180 + 70	x	8	x	1800	mm x	4	bh	144.69 kg)
	- 70 + 180 + 70	x	8	x	800	mm x	4	bh	64.31 kg)
	- Doubling)	
	180	x	90 x	8	mm x	2	buah	10.00 kg)	
)	
	- Pondasi kayu tangga gangway)	
	180	x	100 x	8	mm x	2	buah	10.00 kg)	
	120	x	100 x	8	mm x	4	buah	20.00 kg)	
	140	x	100 x	8	mm x	2	buah	10.00 kg)	
	- Bongkar pasang kayu)	
	1000	x	80 x	100	mm x	1	buah (lama))
	- Engsel tangga)	
	200	x	200 x	8	mm x	2	buah)
500	x	70 x	8	mm x	2	buah)	

No./A/C	Job Description										Keterangan
	- Mur baut dia	x	2 buah	(lama))
	- Engsel lidah tangga)
	120	x	70 x	8 mm x	5	buah)
	- Bongkar pasang)
	Lidah-2)
	800	x	700 x	8 mm x	1	buah	(lama))
	Pengunci lidah-2			x	2 buah		(lama))
	Spin roll			x	1 buah		(lama))
	- Ganti baru :)
	Frame tangga)
	> Kanal C	(70 + 70) x	280	x	890 mm x	3mm		1 buah)
	> Kanal C	(70 + 70) x	280	x	1100 mm x	3mm		1 buah)
	Roling bawah)
	> As dia	3/4"	x	50 mm	x	1 buah)
	Pengunci tangga)
	> Besi esser dia	19 mm	x	610 mm	x	3 buah)
	> Mur baut dia.	4/8"	x	5"	x	3 buah)
	Bongkar pasang dengan pengelasan pondasi rumah roll seling)
	> Plat	260	x	180 x	220 mm	2 buah)
	Bongkar pasang dengan pengelasan step tangga)
	> Plat	380	x	590 x	5 mm	3 buah)
	- Dilaksanakan uji coba)
5.8	Boat Deck, Bridge Deck, and Navigation Deck)
	Plat bridge deck seluas 102 m ² , dikerjakan sebagai berikut :)
	a. Sandblasting					102	M ²)
	b. Pengecatan :)
	- Cat Primer	x	1	lapis		102	M ²)
	- Cat Finish	x	1	lapis		102	M ²)
	- Cat anti slip merah main deck kanan kiri					60	M ²)
	- Lis cat kuning					15	M ²)
	* Material cat supply owner)
	Perbaikan pondasi lampu navigasi kanan, sbb :)
	Ganti baru :)
	- Pondasi pintu navigasi, plat ukuran :)
	300	x	280 x	6 mm	x	1 buah)
	- Mur baut dia.	3/8"	x	30 mm	x	3 buah)
	- Engsel pintu)
	Pipa sch.40 dia.	1/2"	x	60 mm	x	4 buah)
	Besi esser dia.	14 mm	x	80 mm	x	2 buah)
	- Pengunci pintu)
	70	x	30 x	6 mm x		1 buah)
	- Dinding lampu navigasi)
	440	x	50 x	6 mm x		1 buah)
	- Pondasi kabel lampu naviasi)
	1400	x	50 x	6 mm x		1 buah	(kanan))

No./A/C	Job Description							Keterangan
	1400	x	30	x	6	mm x	1 buah	(kiri)
	600	x	30	x	6	mm x	1 buah	(kiri)
	Bongkar pasang : (material lama))
	- Pintu navigasi, plat ukuran :)
	470	x	400	x	6	mm x	3 buah)
	- Lis pintu navigasi, plat ukuran :)
	500	x	40	x	6	mm x	3 buah)
	- Lampu navigasi 8" x						1 buah)
	- Pasang klem kabel						6 buah)
	Asistensi connect disconnect kabel power							) Selesai
	Ganti baru pondasi Antena dan support kabel navigasi deck, sbb :)
	- Pondasi antena)
	Pipa sch.40 dia.	1 1/2"	x	1510	mm	x	1 buah	) (lama)
	- Support kabel)
	100	x	40	x	6	mm	x	) 7 buah
	140	x	40	x	6	mm	x	) 9 buah
	- Klem antena)
	110	x	80	x	6	mm	1 buah	) (lama)
	70	x	40	x	6	mm	2 buah	) (lama)
	Mur baut dia	1"	x	2 1/2"		x	8 buah	) (lama)
	- Tutup pipa antena)
	60	x	60	x	8	mm	x	) 1 buah
	- Pasang klem kabel						9 buah)
	Asistensi connect disconnect kabel antena							) Selesai
5.17	<u>Deck Machinery</u>							
5.17.1	<u>Windlass</u>							
	Diganti baru pondasi lidah - lidah windlass jangkar kanan di Forecastle Deck, ukuran :)
	Plat	120	x	220	x	16	mm	) x 2 bh
	Mur baut dia.	5/8" x 3" x		1	buah)
	Plat	90	x	540	x	20	mm	) x 1 bh
		70	x	150	x	20	mm	) x 1 bh
	Ganti baru rumah kampas pada tross tali no. 1, 2, 3, 5 & 6 kanan, sbb : (material supply dock))
	Plat)
	1600	x	125	x	12	mm	x	) 5 buah (atas)
	1600	x	125	x	12	mm	x	) 5 buah (bawah)
	Lubang mb perseng dia 8.5 mm x 225 buah)
	Ganti baru :)
	Bracket (penegak kampas tross tali))
	715	x	220	x	8	mm	x	) 10 buah
	> Sounder ulang lubang penegak kampas						x	) 15 buah
	Pipa dia.	3/4"	x	85	mm	x	10	) buah
	As drat	M12	x	125	mm	x	10	) buah
	> Bor lubang as drat dia 12 mm x						10	) buah
	Bongkar pasang (material lama))

No./A/C	Job Description							Keterangan
6 6.10	Engsel)
	350	x	110 x	30	mm x	5	buah)
	150	x	125 x	14	mm x	10	buah)
	190	x	65 x	14	mm x	10	buah)
	420	x	90 x	30	mm x	5	buah)
	230	x	70 x	35	mm x	5	buah)
	Bor ulang lubang split pen		4 mm		x	15	buah)
	Gerinda & pengecatan rumah kampas			x	5	buah) Selesai
	ENGINE DEPARTMENT							
	Piping System at Engine Room							
	Ganti baru pipa manifold isap GS pump di kamar mesin, sbb :)
	- Pipa sch.80 dia.	6"	x	1130 mm	x	1	buah)
	- Flange dia.	6"	x	2	buah)
	- T dia	6"	x	1	buah)
	- Flange prop dia	6"	x	12 mm x		1	buah)
	- Valve dia	6"	x	1 buah	(lama))
)
- Pipa sch.80 dia.	6"	x	200 mm	x	2	buah)	
- Flange dia.	6"	x	2	buah)	
- T dia	6"	x	1	buah)	
- Flange prop dia	6"	x	12 mm x		1	buah)	
- Valve dia	6"	x	1 buah	(lama))	
)	
- Pipa sch.80 dia.	2 1/2"	x	200 mm	x	1	buah)	
- Flange dia.	2 1/2"	x	1	buah)	
- T dia	2 1/2"	x	1	buah)	
)	
- Pipa sch.80 dia.	4"	x	200 mm	x	1	buah)	
- Flange dia.	4"	x	1	buah)	
- T dia	4"	x	1	buah)	
)	
- Pipa sch.80 dia.	3"	x	200 mm	x	1	buah)	
- Pipa sch.80 dia.	3"	x	150 mm	x	1	buah)	
- Elbow dia	3"	x	1	buah)	
- Flange dia.	3"	x	1	buah)	
- T dia	3"	x	1	buah)	
)	
- Pipa sch.80 dia.	6"	x	600 mm	x	1	buah	) (lama)
- Flange dia.	6"	x	2	buah	(lama))	
- Valve dia	6"	x	1	buah	(lama))	
)	
- Pipa sch.40 dia.	2 1/2"	x	300 mm	x	1	buah	) (lama)
- Pipa sch.40 dia.	2 1/2"	x	700 mm	x	1	buah	) (lama)
- Pipa sch.40 dia.	2 1/2"	x	400 mm	x	1	buah	) (lama)
- Elbow dia	2 1/2"	x	2	buah	(lama))	
- Flange dia.	2 1/2"	x	2	buah	(lama))	
- Valve dia	2 1/2"	x	1	buah	(lama))	
)	
- Pipa sch.40 dia.	4"	x	100 mm	x	1	buah	) (lama)
- Pipa sch.40 dia.	4"	x	150 mm	x	1	buah	) (lama)
- Elbow dia	4"	x	1	buah	(lama))	

No./A/C	Job Description							Keterangan
	- Flange dia.	4"	x	2 buah	(lama))	
	- Valve dia	4"	x	1 buah	(lama))	
)	
	- Pipa sch.40 dia.	3"	x	300 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	3"	x	400 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	3"	x	600 mm	x	1 buah	(lama))
	- Elbow dia	3"	x	2 buah	(lama))	
	- Flange dia.	3"	x	2 buah	(lama))	
	- Valve dia	3"	x	1 buah	(lama))	
	- Packing karet dia.	6"	x	5 mm	x	8 buah)
	- Packing karet dia.	2 1/2"	x	5 mm	x	4 buah)
	- Packing karet dia.	4"	x	5 mm	x	2 buah)
	- Packing karet dia.	3"	x	5 mm	x	4 buah)
	- Mur baut dia.	5/8"	x	2 1/2" x	80 buah)	
	- Mur baut dia.	5/8"	x	5" x	8 buah)	
	- Mur baut dia.	1/2"	x	2" x	12 buah		)	Selesai
	Ganti baru pipa scupper sanitary, sbb :)
	- Pipa sch.40 dia.	1 1/2"	x	200 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	1 1/2"	x	300 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	1 1/2"	x	100 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	1 1/2"	x	1600 mm	x	1 buah	(lama))
	- Elbow dia	1 1/2"	x	3 buah	(lama))	
	- Sock dia	2"	x	2 buah	(lama))	
)	
	- Pipa sch.40 dia.	1 1/2"	x	100 mm	x	1 buah)
	- Pipa sch.40 dia.	1 1/2"	x	510 mm	x	1 buah)
	- Pipa sch.40 dia.	1 1/2"	x	700 mm	x	1 buah)
	- Pipa sch.40 dia.	1 1/2"	x	1600 mm	x	1 buah)
	- Elbow dia	1 1/2"	x	2 buah)	
	- Sock dia	2"	x	2 buah)	
)	
	- Pipa sch.40 dia.	1 1/2"	x	100 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	1 1/2"	x	500 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	1 1/2"	x	1700 mm	x	1 buah	(lama))
	- Elbow dia	1 1/2"	x	1 buah	(lama))	
	- Sock dia	2"	x	2 buah	(lama))	
)	
	- Pipa sch.40 dia.	1 1/2"	x	300 mm	x	1 buah)
	- Pipa sch.40 dia.	1 1/2"	x	1200 mm	x	1 buah)
	- Pipa sch.40 dia.	1 1/2"	x	1500 mm	x	1 buah)
	- Elbow dia	1 1/2"	x	2 buah)	
	- Sock dia	2"	x	1 buah			)	Selesai
	Ganti baru pipa scupper ruang mesin kiri, sbb :)
	- Pipa sch.40 dia.	3"	x	950 mm	x	1 buah)
	- Flange dia.	3"	x	1 buah)	
	- Sock dia	4"	x	1 buah)	
)	
	- Pipa sch.40 dia.	3"	x	1500 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	3"	x	1700 mm	x	1 buah	(lama))
	- Pipa sch.40 dia.	3"	x	200 mm	x	1 buah	(lama))

No./A/C	Job Description						Keterangan
	- Elbow dia	3"	x	1 buah	(lama)	)	Selesai
	- Flange dia.	3"	x	1 buah	(lama))	
	- Sock dia	4"	x	1 buah	(lama))	
	- Packing karet dia.	3"	x	5 mm	x	1 buah	
	- Mur baut dia.	5/8"	x	2 1/2" x	4 buah)	
	Ganti baru instalasi pipa pendingin AE kiri, sbb :)
	Outlet)
	- Pipa sch.40 dia.	2"	x	100 mm	x	2 buah)
	- Pipa sch.40 dia.	2"	x	600 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	150 mm	x	1 buah)
	- Elbow dia	2"	x	2 buah))
	- Flange dia.	2"	x	4 buah))
	- Valve dia	2"	x	1 buah))
	- Pipa sch.40 dia.	2"	x	700 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	200 mm	x	2 buah)
	- Pipa sch.40 dia.	2"	x	800 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	750 mm	x	1 buah)
	- Elbow dia	2"	x	2 buah))
	- Flange dia.	2"	x	4 buah))
	- Pipa sch.40 dia.	2"	x	950 mm	x	1 buah	(lama)
	- Pipa sch.40 dia.	2"	x	300 mm	x	2 buah	(lama)
	- Pipa sch.40 dia.	2"	x	150 mm	x	1 buah	(lama)
	- Elbow dia	2"	x	2 buah	(lama)))
	- Flange dia.	2"	x	2 buah	(lama)))
	- Packing karet dia.	2"	x	5 mm	x	7 buah	(lama)
	- Mur baut dia.	1/2"	x	2" x	28 buah	(lama))
	- Pipa sch.40 dia.	2"	x	100 mm	x	2 buah	(lama)
	- Pipa sch.40 dia.	2"	x	600 mm	x	2 buah	(lama)
	- Pipa sch.40 dia.	2"	x	1300 mm	x	1 buah	(lama)
	- Elbow dia	2"	x	3 buah	(lama)))
	- Flange dia.	2"	x	2 buah	(lama)))
	- Packing karet dia.	2"	x	5 mm	x	2 buah	(lama)
	- Mur baut dia.	1/2"	x	2" x	8 buah	(lama))
	Ganti baru pipa udara kotak sea chest AE kiri, sbb :)
	- Pipa sch.40 dia.	2"	x	200 mm	x	2 buah)
	- Pipa sch.40 dia.	2"	x	600 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	400 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	410 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	270 mm	x	1 buah)
	- Pipa sch.40 dia.	2"	x	2600 mm	x	1 buah)
	- Elbow dia	2"	x	4 buah))
	- Sock dia	2 1/2"	x	3 buah		)	Selesai
	Ganti baru instalasi pipa pendingin ME di dalam tangki bilge, sbb :)
	- Pipa sch.80 dia.	1 1/2"	x	600 mm	x	1 buah)
	- Pipa sch.80 dia.	1 1/2"	x	200 mm	x	3 buah)
	- Pipa sch.80 dia.	1 1/2"	x	150 mm	x	1 buah)

No./A/C	Job Description							Keterangan		
6.11	- Pipa sch.80 dia.	1 1/2"	x	300 mm	x	1 buah)		
	- Pipa sch.80 dia.	1 1/2"	x	1000 mm	x	1 buah)		
	- Elbow dia	1 1/2"	x	6 buah)		
	- Sock dia	2"	x	3 buah)		
)		
	- Pipa sch.80 dia.	1 1/2"	x	270 mm	x	1 buah	(lama))		
	- Pipa sch.80 dia.	1 1/2"	x	1520 mm	x	1 buah	(lama))		
	- Pipa sch.80 dia.	1 1/2"	x	700 mm	x	1 buah	(lama))		
	- Pipa sch.80 dia.	1 1/2"	x	200 mm	x	1 buah	(lama))		
	- Elbow dia	1 1/2"	x	3 buah	(lama))		
	- Sock dia	2"	x	3 buah	(lama))		
								)	Selesai	
	<u>Misscelaneous</u>									
	Service perahu u/ pekerjaan di laut								)	Selesai
	Disupply material :)	
	- Spuyer Slip Tube						15 buah)	
	- Packing pintu kedap ukuran 4cm x 2cm						150 meter)	
	- Packing pintu kedap ukuran 3cm x 2cm						50 meter)	
	- Lem aibon ukuran 300 gr						5 kaleng)	
	- Cover Valve Liquid						10 buah)	
	- Cover Valve Vapour						10 buah)	
	- Cover Valve Reheater						3 buah)	
	- Cover Cargo Pump						2 buah)	
	- Cover Shelter						2 buah)	
	- Cover Lifeboat Ladder						2 buah)	
	- Cover Additional Mooring						4 buah)	
- Cover Liquid Reheater						4 buah)		
- Cover Valve Ballast						20 buah)		
- Cover Compass Standart (Compass Deck)						1 buah)		
- Cover Compass Repeater (Bridge Deck)						2 buah		)	Selesai	

MV. GAS NURI ARIZONA



Chief Engineer

Captain

Semarang, Juli 2018
PT. YASA WAHANA TIRTA SAMUDERA

DJUPRIJADI
Kepala Produksi

Mengetahui:
Owner Surveyor
PT. SAMUDERA INDONESIA SHIP MANAGEMENET

FAHRUDDIN