	parameters, including: 1) Identification of standard methods [Annex Part 2, 4.2]; 2) Validation of non-standard methods [Annex Part 2, 4.3]; 3) Validation of appropriateness of sample processing times (Annex Part 2, 2.3.34); and 4) Description and validation of facilities and procedures for collecting representative samples [Annex Part 2, 2.3.31; 2.3.32; 2.3.33; 2.3.28]	6034-2010/6289-2011: Sec. 2.6/2.7/2.8		
4.4.5	Results of all analyses for organisms, challenge conditions, and BWMS performance indicators [Annex Part 2, 2.3.23; 2.3.25]	6034-2010 6289-2012		
4.4.6	Documentation the BWMS was operated, and performed as designed, within its specified parameters, including power consumption, flow rate, etc. [Annex Part 2, 2.3.4; 2.3.24]	6034-2010: Pt.3.3 6289-2012: Pt.3.3		
4.4.7	Documentation of all test cycles, demonstrating 5 valid tests with treated water meeting the D-2 discharge standard for each salinity regime for which testing was conducted [Annex Part 2, 2.3.1; 2.3.17; 2.3.18; 2.3.19; 2.3.20; 2.3.36]	6034-2010: Pt.3.6/3.7 6289-2012: Pt.3.2/3.3/3.4		
4.5	Environmental Testing [Annex Part 3]	AW10-027		
4.5.1	Documentation of vibration tests [Annex Part 3, 3.4 – 3.7]	276315, AW10-034 276445, AW10-047		
4.5.2	Documentation of temperature tests [Annex Part 3, 3.8 – 3.10]	276325,AW10-036		
4.5.3	Documentation of humidity tests [Annex Part 3, 3.11]	276325,AW10-036		
4.5.4	Documentation of heavy seas protection tests [Annex Part 3, 3.12]	NA		
4.4.5	Documentation of power supply fluctuation tests [Annex Part 3, 3.13]	REC-E702626		
4.5.6	Documentation of inclination tests [Annex Part 3, 3.14]	Were not required- no moving parts, ref IACS E10 test	spec	

4 Quality Assurance (QA) and Quality Control (QC) [Annex Part 1, 2.1]			
4.1 Quality Management Plan (QMP) addressing the quality control management structure and policies of the testing body, including all subcontractors and outside laboratories) [Annex Part 2, 2.1.2.2]	QAPP April 2010: Sec.1.4.2 QAPP October 2011: Sec.1.4.2		
4.2 Quality Assurance Project Plan (QAPP) describing the specifics of the BWMS, the test facility, and other conditions affecting the design and implementation of the test procedures [Annex Part 2, 2.1.2.3]	QAPP April 2010: Sec.1.3 QAPP October 2011: Sec.1.3		
4.3 Shipboard Test Plan and Report [Annex Part 2, 2.2.2.1]	QAPP June 11 5617-2008		
4.3.1 Documentation that treatment rated capacity of BWMS was appropriate for ship [Annex Part 2, 2.2.2.2]	5617-2008: Sec.2.1		
4.3.2 Documentation that the volume and pumping rate of ballast water during test was consistent with normal ballast operations of ship [Annex Part 2, 2.2.2.3]	5617-2008: Sec. 5.2		
4.3.3 Documentation of all test cycles, demonstrating three valid consecutive test cycles showing discharge of treated ballast water meeting regulation D-2 standard [Annex Part 2, 2.2.2.4 and 2.2.2.8]	5617-2008: Sec. 5.4/5.5/5.6		
4.3.4 Tests meet minimum organism concentrations during uptake of more than 10 times the maximum permitted values in regulation D-2.1 [Annex Part 2, 2.2.2.5]	5617-2008: Sec. 5.4/5.5/5.6		
4.3.5 Documentation that sampling regime was appropriate, either by meeting G8 recommendations for control and treated ballast water including: 1) Control tank replicates; 2) Treatment tank replicates 3) Sample sizes; or 4) By documenting appropriate validation of sample volumes and numbers, per EPA ETV. [Annex Part 2, 2.2.2.6]	5617-2008: Sec. 2.1.1/2.2/2.3 and 3.2 table 5		
4.3.6 Documentation that test cycles completed over at least six months [Annex Part 2, 2.2.2.7]	5617-2008: Sec. 5.2 table 11		
4.3.7 Documentation of source water characterization for salinity, temperature, POC, and TSS [Annex Part 2, 2.2.2.9]	5617-2008: Sec. 5.3 table 12		

controlled [4.3]			
1.4 Manufacturer's equipment manuals containing details of major components of the BWMS and their operation and maintenance [5.1.2]	System manual Ch.2, Ch.3 and Ch.7		
1.5 Operation and technical manual for complete BWMS covering arrangements, operation, and maintenance of the BWMS as a whole, and specifically describing any parts not covered by manufacturers equipment manuals [5.1.3]	System manual		
1.5.1 Operations section of the manual includes normal operational procedures [5.1.4]	System manual Ch.3, Sec.4		
1.5.2 Documentation of simple and effective means for operation and control [4.8]	System manual Ch.3, Sec.4		
1.5.3 Operations manual includes procedures in the event of a malfunction of the BWMS, including emergency actions necessary for securing the ship [5.1.4]	System manual: Ch.2 Sec.3.7 N.B. bypass valve not operated from BWMS		
1.5.4 Operations manual contains maintenance procedures [5.1.3]	System manual: Ch.7		
1.6 All working parts of the BWMS liable to wear or damage easily accessible for maintenance [4.4]	System manual: Ch.7 Sec. 3.2/4.2/ 5.1		
1.6.1 Means provided to check on drift of, repeatability by, measuring devices that are part of control equipment, and for re-zeroing control equipment meters. [4.14]	System manual: Ch.7 Se. 6.4		
1.6.2 Facilities incorporated for checking the performance/calibration of components of BWMS that take measurements [4.6]	System manual: Ch.4		
1.7 Operations manual describes methods for conditioning of treated water prior to discharge to control residual treatment chemicals, disinfection by products, and the general suitability of the treated water for discharge. [5.1.5]	Not Applicable		
1.8 Technical section of the manual includes adequate information (including description and diagrammatic drawings of monitoring and electrical/electronic wiring) to enable faultfinding. [5.1.7]	System manual: Ch.3 Sec.6 Ch.5 Ch.6 Sec.7.4		
1.9 Technical section of the manual includes specifications defining, inter alia, requirements for location and mounting of components, arrangements for sampling by control and monitoring equipment, and arrangements for ensuring safe operation. [5.1.8]	System manual: Ch.6 Sec.4		