



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

**Bid Receiving - PWGSC / Réception des soumissions
- TPSGC**

11 Laurier St. / 11, rue Laurier

Place du Portage, Phase III

Core 0B2 / Noyau 0B2

Gatineau

Quebec

K1A 0S5

Bid Fax: (819) 997-9776

SOLICITATION AMENDMENT

MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

**In-Service Support Marine / Soutien en Service
Maritime**

11 Laurier St. / 11, rue Laurier

Place du Portage, Phase III

6C2

Gatineau

Quebec

K1A 0S5

Title - Sujet Élimination des Navires PRE & QUEST	
Solicitation No. - N° de l'invitation W8482-171396/A	Amendment No. - N° modif. 001
Client Reference No. - N° de référence du client W8482-171396	Date 2017-04-10
GETS Reference No. - N° de référence de SEAG PW-\$ISM-010-26234	
File No. - N° de dossier 010ism.W8482-171396	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2017-05-10	
Time Zone Fuseau horaire Eastern Daylight Saving Time EDT	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Passmore, Russ	Buyer Id - Id de l'acheteur 010ism
Telephone No. - N° de téléphone (819) 420-2917 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Modification 001

La modification 001 vise à intégrer les changements suivants :

- 1) Veuillez consulter la première page de l'invitation à soumissionner pour connaître les nouvelles date et heure de clôture des soumissions.
- 2) *Supprimer l'Annexe I – Questions des soumissionnaires et réponses du CANADA* dans son intégralité et *la remplacer par l'Annexe I – Questions des soumissionnaires et réponses du CANADA en date du 9 avril 2017* en pièce jointe.
- 3) Dans **ANNEXE « A » ÉNONCÉ DES TRAVAUX**, ajoutez **Appendice 1 a Annexe “A” – Documents de référence et Documentation électronique critique, rapports qui font partie du présent cahier des charges**, ci-jointe.
- 4) Dans **ANNEXE « H » CONFÉRENCE DES SOUMISSIONNAIRES ET INFORMATION SUR LA VISITE DES LIEUX**, ajoutez **Appendice 1 a Annexe “H” - Procès-verbaux de la conférence du soumissionnaire**, ci-jointe.
- 5) *Supprimer 3.2.1 Expérience en matière de démantèlement de navires* dans son intégralité et *la remplacer par :*

3.2.1 Expérience en matière de démantèlement de navires

Le soumissionnaire doit démontrer son expérience et sa compréhension du démantèlement de la façon suivante :

- 1) Décrire par écrit son expérience acquise au cours des 10 dernières années relativement à des projets de démantèlement de navires de taille semblable et comportant un degré de complexité semblable au projet de démantèlement de l'ancien NCSM *PRESERVER* ou NAFC *QUEST*;
- 2) Fournir le plan d'aliénation d'un projet achevé au cours des 10 dernières années. Ce plan devait comprendre au moins cinq des éléments suivants :
 - a. Plan d'ordonnancement : plan d'ordonnancement détaillé de la déconstruction des sections/compartiments et du démantèlement (démontage et aliénation ou recyclage) de l'ensemble du navire. Les détails doivent inclure les échéanciers couvrant la période commençant à l'arrivée au site de démantèlement et se terminant à l'achèvement du projet;
 - b. Recours à la sous-traitance : décrire tous les travaux réalisés par des sous-traitants;
 - c. Procédures de surveillance des conditions : décrire les processus qui étaient en place pour surveiller les conditions relatives à la sécurité des travailleurs et les procédures utilisées pour résoudre et corriger les problèmes ciblés (p. ex., la surveillance de la qualité de l'air, les procédures de ventilation, les consignes d'incendie et les procédures de premiers soins);
 - d. Matières dangereuses : décrire les procédures et les plans de contrôle utilisés, y compris comment et où les matériaux ont été aliénés ou recyclés;

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

e. Permis et tenue des registres : décrire le processus d'obtention des permis appropriés et décrire les processus de tenue des registres qui étaient en place;

f. Destruction des métaux : décrire en détail les procédés et le matériel utilisés pour le démontage et l'aliénation ou le recyclage des métaux.

REMARQUE : le démantèlement de navire est le processus consistant à détruire systématiquement toute l'infrastructure d'un navire désuet en le démontant et en aliénant ou recyclant toutes les pièces et matières dangereuses dont il est composé.

REMARQUE : on entend par expérience relativement à des projets de démantèlement de navires de taille semblable et comportant un degré de complexité semblable au projet de démantèlement de l'ancien NCSM *PRESERVER* ou NAFC *QUEST* un projet de démantèlement de navires d'un navire ayant un déplacement d'au moins 1 800 longues tonnes.

TOUTES LES AUTRES MODALITÉS DEMEURENT INCHANGÉES.

Solicitation No. – N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

N° de la modif. - Amd. No.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Annexe « I »
QUESTIONS DES SOUMISSIONNAIRES ET RÉPONSES DU CANADA
Au 9 avril 2017

Q1. Le CANADA peut-il fournir le « rapport de charge liquide » pour l'ancien NCSM Preserver et l'ancien NAFC Quest?

R1. Veuillez vous reporter à l'annexe **Appendice 1 a Annexe "A" – Documents de référence et Documentation électronique critique, rapports qui font partie du présent cahier des charges, ci-jointe.**

Q2. La remarque 1. « Enlèvement de tuiles en place » à la feuille 1 du dessin 9659200 renvoie à la référence 9 en format DWG, répertoriée sous le numéro de dessin AGOR 172-H-26-20076 dans la liste des documents de référence. Le CANADA peut-il fournir une copie du dessin AGOR 172-H-26-20076 indiqué?

R2. Le Canada tente de localiser ce dessin archivé. S'il est disponible, le Canada en informera les soumissionnaires dans une modification de l'invitation.

Q3. Le Canada peut-il fournir un tableau ou une liste des poids de l'équipement et des marchandises sèches chargées sur l'ancien NCSM Preserver? Après notre visite du navire d'aujourd'hui, nous comprenons que les poids de cet équipement et de ces marchandises ont été comptabilisés par espace de rangement – c.-à-d. le total du hangar, les espaces de rangement aux plates-formes de service n° 2, 3 et 4, et les espaces de rangement pour les marchandises sèches aux plates-formes de service n° 2, 3 et 4.

R3. Veuillez vous reporter à l'annexe **Appendice 1 a Annexe "A" – Documents de référence et Documentation électronique critique, rapports qui font partie du présent cahier des charges, ci-jointe.**

Q4. Le Canada peut-il fournir les plans de vanne de coque pour le NCSM Preserver et le NAFC Quest auxquels on a renvoyé pendant la conférence des soumissionnaires?

R4. Veuillez vous reporter à l'annexe **Appendice 1 a Annexe "A" – Documents de référence et Documentation électronique critique, rapports qui font partie du présent cahier des charges, ci-jointe.**

Q5. Le CANADA a-t-il des besoins précis en matière de code de démilitarisation pour les marchandises contrôlées se trouvant sur l'ancien NAFC QUEST autres que ceux indiqués aux pages 22 et 23 de l'Annexe A – Énoncé des travaux, au point 8.10, Marchandises contrôlées?

R5. Cette information sera présentée à l'entrepreneur dans la liste maîtresse d'équipement pour l'ancien NAFC Quest.

Q6. Dans la demande de propositions, le critère obligatoire 3.2.1 se lit ainsi :

Le soumissionnaire doit démontrer son expérience et sa compréhension du démantèlement de la façon suivante :

- 1) Décrire par écrit son expérience acquise au cours des 10 dernières années relativement à des projets de démantèlement de navires de taille semblable et comportant un degré de

Solicitation No. – N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

N° de la modif. - Amd. No.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

complexité semblable au projet de démantèlement de l'ancien NCSM PRESERVER ou NAFC QUEST.

On pourrait croire que l'État insiste sur le fait que le soumissionnaire doit avoir une expérience relative à un navire dont la taille correspond à celle du NCSM Preserver à tout le moins. Pouvez-vous confirmer que le démantèlement d'anciens navires militaires canadiens au cours des dix dernières années est admissible et qu'il n'est pas nécessaire qu'ils soient de la même taille que le NCSM Preserver?

R6. Il n'est pas prévu que seules les caractéristiques exactes des navires répondent à l'exigence « de taille semblable et comportant un degré de complexité semblable ». Il n'y a non plus aucune exigence selon laquelle l'expérience doit comprendre uniquement d'anciens navires militaires canadiens. Nous visons à garantir que le soumissionnaire retenu possède une expérience du démantèlement de navires proportionnelle à la complexité des travaux indiqués à l'Annexe « A » – Énoncé des travaux, pour cette invitation et pour tout contrat en découlant. Afin d'éviter toute confusion, voir la modification 001 à la présente demande de soumissions, où l'on définit l'expérience de projets de démantèlement de navires de taille semblable et comportant un degré de complexité semblable au projet de démantèlement de l'ancien NCSM PRESERVER ou NAFC QUEST. Voici la définition :

REMARQUE : on entend par expérience relativement à des projets de démantèlement de navires de taille semblable et comportant un degré de complexité semblable au projet de démantèlement de l'ancien NCSM PRESERVER ou NAFC QUEST un projet de démantèlement de navires d'un navire ayant un déplacement d'au moins 1 800 longues tonnes.

Q7. Notre compagnie est d'avis que toute entreprise possédant une expérience de la gestion ou de la poursuite de travaux de réparation de navires possède l'expérience requise pour mener ces travaux en toute sécurité. Le Canada peut couvrir ses risques en retenant les services d'un entrepreneur en réparation de navires qui possède une assurance de réparateurs de navires et en exigeant que l'entreprise souscrive une assurance responsabilité supplémentaire. Le Canada modifiera-t-il les exigences obligatoires afin de permettre aux entreprises ne possédant aucune expérience du démantèlement de navires (comme indiqué dans la demande de proposition) afin de répondre au critère lié à l'expérience de la réparation ou de la construction de navires?

R7. Le Canada ne modifiera pas l'exigence obligatoire pour l'expérience à des projets de démantèlement de navires. Le Canada a le droit de fixer des exigences dans une sollicitation qui repose sur les exigences opérationnelles légitimes du Canada et en établissant ces exigences, ne doit pas compromettre ses exigences opérationnelles légitimes pour tenir compte des capacités d'un fournisseur particulier. Étant donné la complexité des travaux requis, l'aliénation des anciens NCSM PRESERVER et NAFC QUEST, et le fait qu'une compétition adéquate existe entre les compagnies canadiennes possédant une expérience de démantèlement de navires, les exigences obligatoires demeurent telles quelles.

Q8. Le fait de regrouper un gros navire comme le NCSM Preserver et un plus petit navire comme le NAFC Quest donne lieu à une réduction de la concurrence, ce qui augmente ainsi les coûts des travaux. Il est possible que des entrepreneurs qui possèdent la capacité et les installations requises pour gérer le démantèlement du NAFC Quest ne possèdent pas celles requises pour gérer le démantèlement du NCSM Preserver. Le gouvernement pourrait-il envisager de fractionner cette exigence?

R8. Les deux navires sont complexes et possèdent des points communs allant au-delà de la simple comparaison de leur taille. Les soumissionnaires ne sont pas tenus d'être propriétaires des installations qu'ils utilisent pour effectuer les travaux; ils ne doivent toutefois pas oublier qu'ils doivent répondre à chacune des exigences obligatoires pour se voir attribuer un contrat. Le Canada a conclu que le fait de regrouper l'exigence relative à l'aliénation de l'ancien NCSM PRESERVER et de l'ancien NAFC QUEST offre la meilleure optimisation des ressources pour les contribuables canadiens. L'exigence ne sera pas divisée en deux exigences distinctes.

Solicitation No. – N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

N° de la modif. - Amd. No.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Q9. Le gouvernement confirmera-t-il que l'évaluation comprendra entre autres une évaluation de la capacité de l'entrepreneur à lancer et à achever les travaux au cours de la période de travail indiquée?

R9. Le Canada évaluera tous les soumissionnaires en fonction des critères obligatoires d'évaluation indiqués dans la présente invitation. Cette évaluation porte entre autres sur le calendrier du soumissionnaire et la disponibilité des installations appropriées pour mener les travaux requis. Un soumissionnaire doit répondre à tous les critères obligatoires pour pouvoir être considéré comme conforme.

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

**Appendice 1 a Annexe "A" – Documents de référence
et Documentation électronique critique, rapports qui
font partie du présent cahier des charges**

**Les documents techniques suivants sont disponibles en
anglais seulement.**

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396








Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME
















Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work

Provided on USB Key to Bidders upon request:

For the former CFAV QUEST:

 Environmental Assessment Report-QUEST	08/03/2017 10:42 ...	File folder	
 GHS - 116 Itmes	10/02/2017 10:39 ...	File folder	
 201-H02-4200, Docking Plan - 3 Shts	21/03/2017 7:21 A...	Adobe Acrobat D...	1,618 KB
 9659165 - General Arrangement	13/02/2017 11:25 ...	Adobe Acrobat D...	7,704 KB
 9659230 Fire Fighting Arrangement	24/02/2017 6:30 A...	Adobe Acrobat D...	169 KB
 AUX 0335, Structural Mods - 2 Shts	21/03/2017 7:18 A...	Adobe Acrobat D...	18,943 KB
 AVOR-MTS-01, Quest Stability Data_Dra...	13/02/2017 11:28 ...	Adobe Acrobat D...	11,108 KB

For the former HMCS PRESERVER:

 Anchor and towing gear_PAC	08/03/2017 10:32 ...	File folder	
 Environmental Assessment Report - PRESERVER	21/03/2017 9:38 A...	File folder	
 GHS files - 48 items	09/02/2017 7:41 A...	File folder	
 GLM files - 43 items	09/02/2017 7:41 A...	File folder	
 509-H-0-251430-01_PTR Class Docking Plan	24/02/2017 6:32 A...	Adobe Acrobat D...	1,192 KB
 509-H-27-41297-01, PRE_Mooring and Towing_Fr 1 of 2	10/02/2017 8:14 A...	Adobe Acrobat D...	265 KB
 509-H-27-41297-01, PRE_Mooring and Towing_Fr 2 of 2	10/02/2017 8:15 A...	Adobe Acrobat D...	385 KB
 9251641 PRE-General Arrangement_Sht-1	24/02/2017 5:55 A...	Adobe Acrobat D...	228 KB
 9251641 PRE-General Arrangement_Sht-2	24/02/2017 5:58 A...	Adobe Acrobat D...	181 KB
 9251641 PRE-General Arrangement_Sht-3	24/02/2017 6:07 A...	Adobe Acrobat D...	316 KB
 9251641 PRE-General Arrangement_Sht-4	24/02/2017 6:17 A...	Adobe Acrobat D...	377 KB
 9251641 PRE-General Arrangement_Sht-5	24/02/2017 6:17 A...	Adobe Acrobat D...	220 KB
 9251641 PRE-General Arrangement_Sht-6	24/02/2017 6:18 A...	Adobe Acrobat D...	163 KB
 9665018 PTR CLASS Incident Board	10/02/2017 8:06 A...	Adobe Acrobat D...	2,863 KB
 HMCS PRESEVER Stability DATA_DWG	10/02/2017 8:17 A...	Adobe Acrobat D...	59,975 KB

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Additional information provided in hard copy to Bidders upon request and attached hereto:

For the former CFAV QUEST:

9659200 - Hull Damping
9659214 - Tank Plan & Capacities
9659234 - Damping Tiles on Main Machinery Raft
Estimated Liquid Loads for PRE for the former CFAV QUEST
Valve Plan for the former CFAV QUEST

For the former HMCS PRESERVER:

Estimated Liquid Loads for the former HMCS PRESERVER
Sea Water Circulating System Drawing for the former HMCS PRESERVER
Bilge and Ballast System Drawing for the former HMCS PRESERVER
Estimated on-load weights and locations for the former HMCS PRESERVER
Valve Plan for the former HMCS PRESERVER
Environmental Assessment of HMCS PRESERVER FINAL REPORT

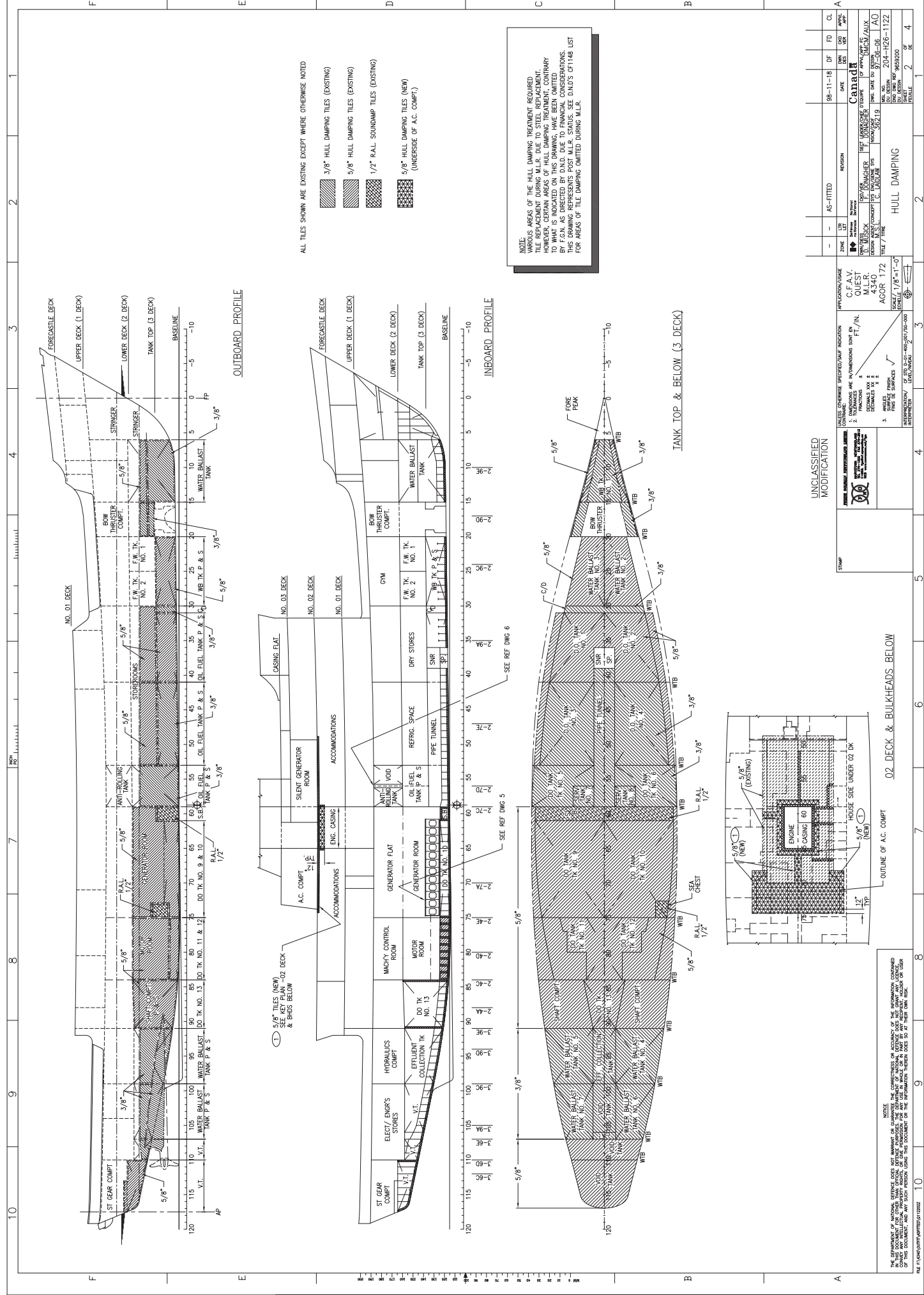
Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

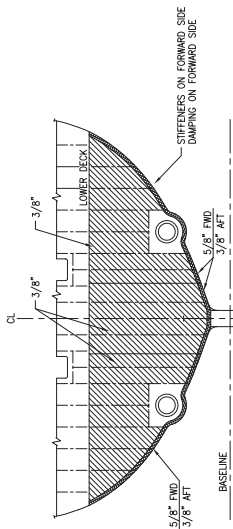
Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work

Additional information
for the former CFAV QUEST:
9659200 - Hull Damping



NOTE:
VARIOUS AREAS OF THE HULL DAMPING TREATMENT REQUIRED TO BE APPLIED TO THE HULL DAMPING TREATMENT. HOWEVER, CERTAIN AREAS OF HULL DAMPING TREATMENT TO WHAT IS INDICATED ON THIS DRAWING, HAVE BEEN OMITTED BY F.G.M. AS DIRECTED BY D.A.D. DUE TO FINANCIAL CONSIDERATIONS. THIS DRAWING REPRESENTS POST M.L.R. STATUS. SEE DND'S CF1148 LIST FOR AREAS OF HULL DAMPING OMITTED DURING M.L.R.

<div>UNCLASSIFIED MODIFICATION</div>										<div>02 DECK & BULKHEADS BELOW</div>									
<div></div>										<div><p>NOTE</p><p>THE RELIABILITY OF NATIONAL DEFENSE DATA MAY VARY. THE ACCURACY OF THE INFORMATION CONTAINED IN THIS DOCUMENT IS NOT GUARANTEED. THE INFORMATION IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE NATIONAL DEFENSE INTELLIGENCE AGENCY. THE INFORMATION IS NOT TO BE RELEASED TO THE PUBLIC OR TO ANY OTHER AGENCY WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE NATIONAL DEFENSE INTELLIGENCE AGENCY. THE INFORMATION IS NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE NATIONAL DEFENSE INTELLIGENCE AGENCY.</p></div>									
FILE 11-14000/UNCLASSIFIED/0112002										FILE 11-14000/UNCLASSIFIED/0112002									



Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

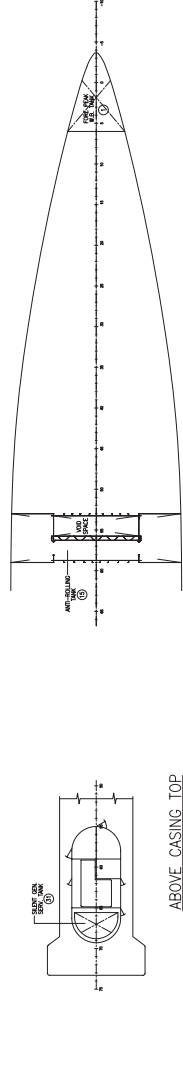
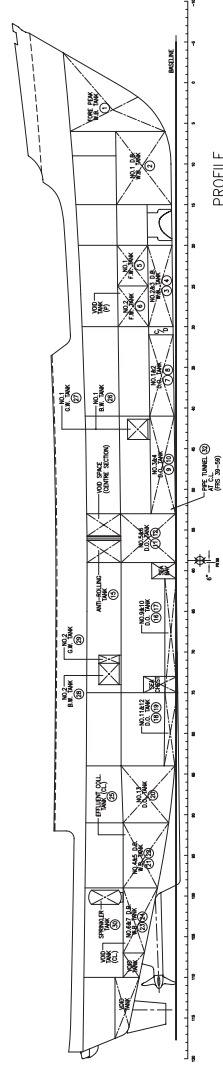
Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

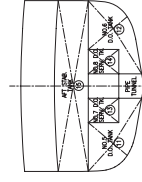
Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work

Additional information
for the former CFAV QUEST:
9659214 - Tank Plan & Capacities

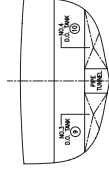
TANK NO.	TANK DESCRIPTION	FRAMES	CONTENTS	DENSITY	VOLUME	WEIGHT	LOG FROM TANK	VOG	TOG FROM TANK	F.S.M.
TANK 1										
1	FORE PEAK WATER BALLAST	6-FWD	W.B.	34.45	6843	131.14	20.61	0.00	0.00	34.1
2	N.O.1 D.B. WATER BALLAST	6-15	W.B.	34.45	7986	36.62	94.68	9.97	0.00	46.9
3	N.O.2 D.B. WATER BALLAST (S)	20-30	W.B.	34.45	4010	18.39	66.54	4.57	3.306	33.7
4	N.O.3 D.B. WATER BALLAST (P)	20-30	W.B.	34.45	4010	18.39	66.54	4.57	3.306	33.7
5	N.O.1 FRESH WATER	20-25	F.W.	35.31	4381	18.60	72.68	10.94	4.898	33.0
6	N.O.2 FRESH WATER	25-30	F.W.	35.31	5519	24.60	62.97	10.76	6.156	59.9
7	N.O.3 FRESH WATER	30-35	F.W.	35.31	5519	24.60	62.97	10.76	6.156	59.9
8	N.O.4 DIESEL OIL (S)	41-53	W.B.	41.30/34.45	5118	19.58/23.47	44.71	3.41	5.315	78.4
9	N.O.5 DIESEL OIL (S)	41-53	W.B.	41.30/34.45	7453	28.51/34.18	22.89	4.13	8.606	112.7
10	N.O.6 DIESEL OIL (S)	41-53	W.B.	41.30/34.45	7453	28.51/34.18	22.89	4.13	8.606	112.7
11	N.O.5 DIESEL OIL (P)	53-59	D.O.	W.B.	41.30/34.45	12087	46.24/55.43	5.85	7.76	93.3
12	N.O.6 DIESEL OIL (P)	53-59	D.O.	W.B.	41.30/34.45	11817	46.21/54.19	5.78	7.65	80.0
13	N.O.7 DIESEL OIL SERVICE (S)	58-59	D.O.	41.30	1626	6.15	2.50	9.76	6.009	2.5
14	N.O.8 DIESEL OIL SERVICE (S)	58-59	D.O.	41.30	1626	6.15	2.50	9.76	6.009	2.5
15	N.O.9 DIESEL OIL SERVICE (P)	53-59	W.B.	41.30	1626	6.15	2.50	9.76	6.009	2.5
16	N.O.10 DIESEL OIL (P)	53-59	W.B.	35.31	6858	30.31	44.66	14.53	0.00	187.3
17	N.O.9 DIESEL OIL (P)	61-75	W.B.	41.30/34.45	5616	21.48/27.75	18.36	2.17	6.189	115.3
18	N.O.10 DIESEL OIL (P)	75-84	W.B.	41.30/34.45	5616	21.48/27.75	18.36	2.17	6.189	115.3
19	N.O.11 DIESEL OIL (P)	75-84	W.B.	41.30/34.45	5616	21.48/27.75	18.36	2.17	6.189	115.3
20	N.O.12 DIESEL OIL (S)	75-84	W.B.	41.30/34.45	5616	21.48/27.75	18.36	2.17	6.189	115.3
21	N.O.13 DIESEL OIL (S)	84-91	D.O.	W.B.	41.30/34.45	9129	34.54/41.41	56.86	7.36	0.00
22	N.O.4 D.B. WATER BALLAST (S)	91-99	W.B.	34.45	7044	32.30	71.75	9.63	7.889	80.3
23	N.O.5 D.B. WATER BALLAST (S)	91-99	W.B.	34.45	7044	32.30	71.75	9.63	7.889	80.3
24	N.O.6 D.B. WATER BALLAST (S)	91-99	W.B.	34.45	7044	32.30	71.75	9.63	7.889	80.3
25	N.O.7 D.B. WATER BALLAST (P)	99-107	W.B.	34.45	3462	15.88	97.86	0.18	6.615	37.2
26	EFFLUENT COLLECTION	91-99	EFF.	34.45	5556	25.48	72.10	8.10	0.00	8.0
27	N.O.1 BLACK WATER (P)	41-44	G.W.	34.45	1246	5.71	32.25	9.42	8.509	6.1
28	N.O.2 BLACK WATER (P)	41-44	G.W.	35.88	467	2.09	32.25	9.42	14.009	0.3
29	N.O.2 GREY WATER (S)	70-75	G.W.	35.31	228	1.02	27.10	16.68	17.756	0.6
30	N.O.3 GREY WATER (S)	70-75	G.W.	35.31	228	1.02	27.10	16.68	17.756	0.6
31	N.O.4 GREY WATER (S)	70-75	G.W.	35.31	228	1.02	27.10	16.68	17.756	0.6
32	SEWAGE TANK	99-107	W.B.	35.31	520	0.89	62.06	15.50	0.009	0.2
33	SEWAGE TANK	99-107	W.B.	35.31	520	0.89	62.06	15.50	0.009	0.2
34	SEWAGE TANK	99-107	W.B.	35.31	520	0.89	62.06	15.50	0.009	0.2
35	SEWAGE TANK	99-107	W.B.	35.31	520	0.89	62.06	15.50	0.009	0.2
36	SEWAGE TANK	99-107	W.B.	35.31	520	0.89	62.06	15.50	0.009	0.2



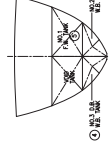
ABOVE CASING TOP



FRAME 58
LOOKING FWD



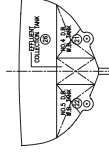
FRAME 47
LOOKING FWD



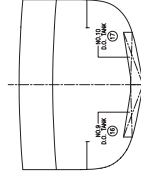
FRAME 24
LOOKING FWD



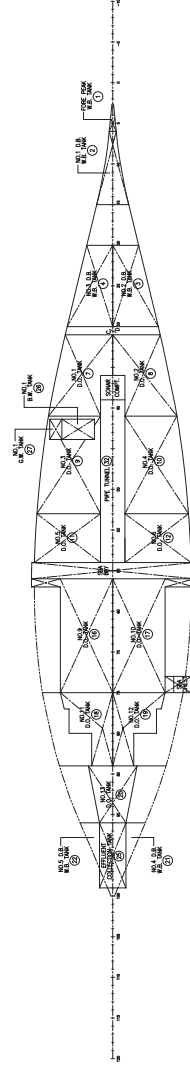
BELOW LOWER DECK (2 DECK)



FRAME 94
LOOKING FWD



FRAME 70
LOOKING FWD



BELOW TANK TOP (3 DECK)

[illegible]

NOTICE

THE DEPARTMENT OF NATIONAL DEFENCE DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR ACCURACY OF THE INFORMATION CONTAINED IN THIS DOCUMENT FOR OTHER THAN OFFICIAL DEFENCE PURPOSES. THE DEPARTMENT OF NATIONAL DEFENCE DOES NOT GRANT ANY LICENCE, CONVEY ANY INTELLECTUAL PROPERTY RIGHTS, OR GIVE PERMISSION FOR ANY USE IN WHOLE OR IN PART BY ANY RECIPIENT, HOLDER OR USER OF THIS DOCUMENT, AND ANY SUCH PERSON USING THIS DOCUMENT OF THE INFORMATION THEREIN DOES SO AT THEIR OWN RISK.

FILE: F:\340\OUTFIT\AS_FITTED\04100012

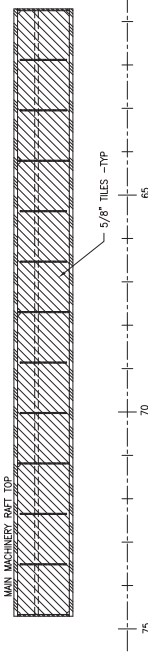
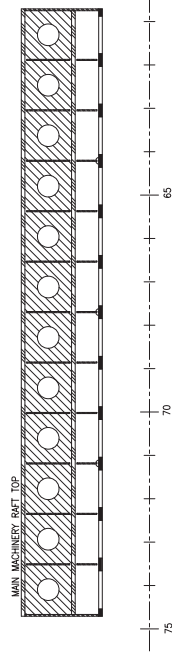
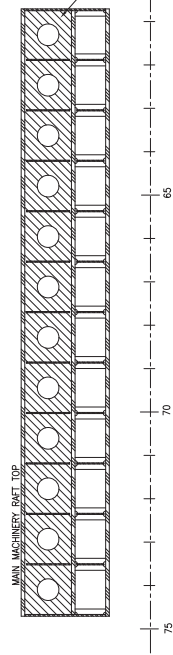
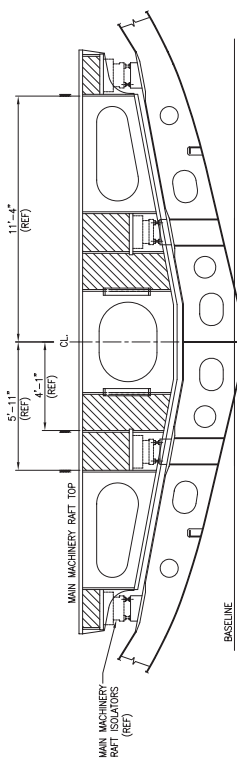
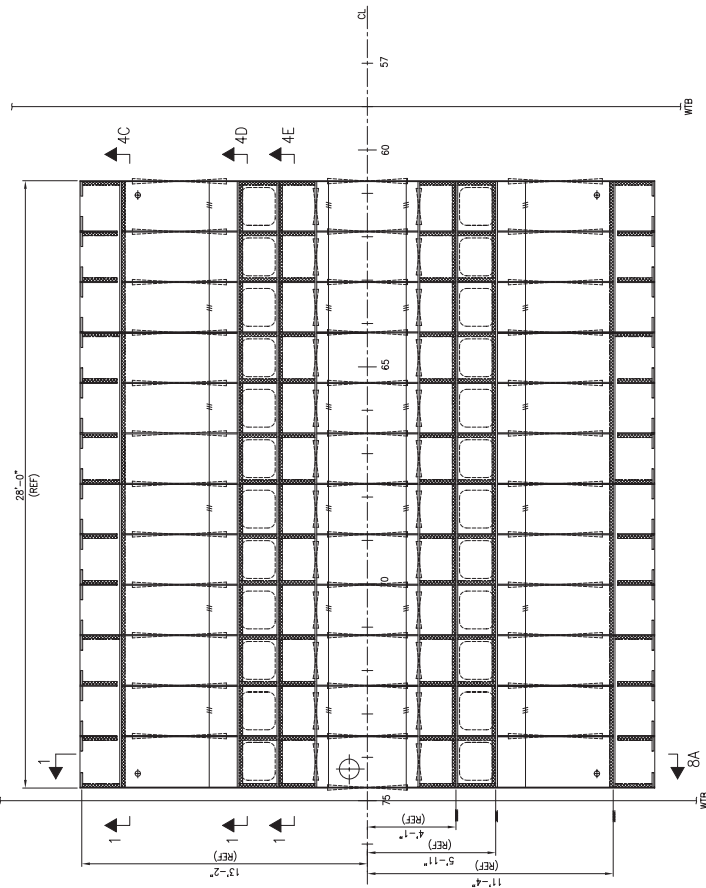
Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work

Additional information
for the former CFAV QUEST:
9659234 - Damping Tiles on Main Machinery Raft





GENERAL NOTES

THIS DRAWING REFLECTS EXISTING DAMPING OF RAFT AND THEREFORE HAS NO NEW TILES OR MATERIAL LIST SHOWN. IF ANY TILES ARE FOUND TO REQUIRE REPAIRS OR REPLACEMENT, THEN IT SHALL BE CARRIED OUT AS DESCRIBED ON REF DWG 2 GENERAL NOTES.

5/8" DAMPING TILES (EXISTING)

REFERENCE DRAWINGS

REF. NO.	DWG. NO.	DESCRIPTION
1.	(201-H02-4000)	GENERAL ARRANGEMENT
2.	(204-H26-1122)	HULL DAMPING
3.	(201-H26-0015)	WORK METHODS RAFT
3.	AGOR 172-H-26-20015	COMPARTMENT TREATMENT

UNCLASSIFIED MODIFICATION	 MARTINITY LIMITED SUPPLY LIMITED 100-100-100-100-100-100 100-100-100-100-100-100	APPLICATION/SCALE C.F.A. QUEST FT./IN. M.L.R. 4340 AGOR 172 AGOR 172-1		APPLICATION/SCALE C.F.A. QUEST FT./IN. M.L.R. 4340 AGOR 172 AGOR 172-1	
		UNLESS OTHERWISE SPECIFIED NAME INSTRUCTIONS 1. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED 2. TOLERANCES DIMENSIONS X DIMENSIONS Y DIMENSIONS Z		UNLESS OTHERWISE SPECIFIED NAME INSTRUCTIONS 1. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED 2. TOLERANCES DIMENSIONS X DIMENSIONS Y DIMENSIONS Z	
UNCLASSIFIED MODIFICATION	 DCL	INSPECTION/TESTING INSPECTION/TESTING INSPECTION/TESTING INSPECTION/TESTING		INSPECTION/TESTING INSPECTION/TESTING INSPECTION/TESTING INSPECTION/TESTING	
		INSPECTION/TESTING INSPECTION/TESTING INSPECTION/TESTING INSPECTION/TESTING		INSPECTION/TESTING INSPECTION/TESTING INSPECTION/TESTING INSPECTION/TESTING	

NOTICE

THE DEPARTMENT OF NATIONAL DEFENCE DOES NOT WARRANT THE CORRECTNESS OR ACCURACY OF THE INFORMATION CONTAINED IN THIS DOCUMENT FOR OTHER THAN OFFICIAL DEFENCE PURPOSES. THE DEPARTMENT OF NATIONAL DEFENCE DOES NOT GRANT ANY LICENSE, CONVEY ANY INTELLECTUAL PROPERTY RIGHTS, OR GIVE PERMISSION FOR ANY USE IN WHOLE OR IN PART BY ANY RECIPIENT, HOLDER OR USER OF THIS DOCUMENT, AND ANY SUCH PERSON USING THIS DOCUMENT OR THE INFORMATION THEREIN DOES SO AT THEIR OWN RISK.

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

**Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work**

**Additional information
for the former CFAV QUEST:**
Estimated Liquid Loads for the former CFAV QUEST

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Estimated Liquid Load and HAZMAT remaining on the former CFAV QUEST

The following are estimates as of March 29, 2017:

- Acetylene Bottle (Flight Deck) to be removed prior to Contract Award
- Oxygen Bottle (x2)(Flight Deck) to be removed prior to Contract Award
- Overpac (Yellow) (Flight Deck) Oily Rags 95 gal capacity
- Overpac (Red) (Flight Deck) Varsol/Water 10 gal
- #1 and #2 LP Air Comp 5 liters of oil in each
- Cat Emerg Diesel (silent gen compt) 30 liters oil, 50 Liters coolant
- Two Batteries for Cat Emerg Diesel
- Batteries for IMCS, required to de-fuel
- Acid and Storage Corrosive Cabinet 70 liters of Hydrofloric Acid Solution
- One MCR Hazmat Cabinet is still full of small items such as spray lubricants
- 20 Liters of hydraulic fluid

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work

Additional information
for the former CFAV QUEST:
Valve Plan for the former CFAV QUEST

Shell Valves List

by: Les Catral & Colin Tancock
date: 01-Mar-17

No.	Description	System	Name	Size	Type	Frame	Location	Comment
1	Fwd Hydraulic Cooling Supply	Fwd Hydraulic Piping System	FH-1	2"	Gate Valve	15+200mm	Bow Thruster Compt. - fwd stbd side	Hull mounted
2	Fwd Hydraulic Cooling Discharge	Fwd Hydraulic Piping System	FH-4	1 1/2"	SDNR	10	Rope Store - Fwd Stbd Side	Side shell mounted
3	Bow Thruster Housing Cavity Vent			1 1/2"		10	Bow Thruster Compt. - fwd port side	Hull mounted
4	Fwd Sewage Plant	Scupper & Sewage Disposal System	SD-99	4"	Storm Valve	51+300mm	General Store - stbd side	Side shell mounted
5	Port Main Engine Supply	SW & FW Cooling System	SW-1	5"	Butterfly	60	Sea Bay fwd of acoustic enclosure - mid ship	Hull mounted, extended spindle
6	Port Main Engine Discharge	SW & FW Cooling System	SW-17	5"	Butterfly	73+175mm	Sea Chest lower generator room - aft stbd side	Hull mounted
7	Port Main Engine Recirc	SW & FW Cooling System	SW-23	5"	Butterfly	60	Sea Bay fwd of acoustic enclosure behind waste oil tank - port side	Hull mounted
8	Stbd Main Engine Supply	SW & FW Cooling System	SW-2	5"	Butterfly	60	Sea Bay fwd of acoustic enclosure - mid ship	Hull mounted, extended spindle
9	Stbd Main Engine Discharge	SW & FW Cooling System	SW-18	5"	Butterfly	73+175mm	Sea Chest lower generator room - aft stbd side	Hull mounted
10	Stbd Main Engine Recirc	SW & FW Cooling System	SW-24	5"	Butterfly	60	Sea Bay fwd of acoustic enclosure behind waste oil tank - stbd side	Hull mounted
11	Fwd Service Generator Supply	SW & FW Cooling System	SW-3	2 1/2"	Butterfly	59+450mm	Sea bay fwd of acoustic enclosure - port side	Hull mounted, extended spindle
12	Fwd Service Generator Discharge	SW & FW Cooling System	SW-19	2 1/2"	Butterfly	73+450mm	Sea Chest lower generator room - aft stbd side	Hull mounted
13	Aft Service Generator Supply	SW & FW Cooling System	SW-4	2 1/2"	Butterfly	60+50mm	Sea bay fwd of acoustic enclosure - stbd side	Hull mounted, extended spindle
14	Aft Service Generator Discharge	SW & FW Cooling System	SW-20	2 1/2"	Butterfly	74+75mm	Sea Chest lower generator room - aft stbd side	Hull mounted
15	Fwd Bilge & Ballast Pump Supply	Bilge and Ballast System	BB-108	3 1/2"	Angle SDNR	60	Sea bay fwd of acoustic enclosure - port side	Hull mounted, extended spindle
16	Fwd Bilge & Ballast Pump Discharge	Bilge and Ballast System	BB-110	3 1/2"	SDNR	61	Lower generator room between domestic fresh water - fwd stbd side	Side shell mounted
17	Fwd Fire Pump Supply	Firemain and Sprinkler System	FM-1	2 1/2"	Screw Lift	60-75mm	Sea bay fwd of acoustic enclosure - port side	Hull mounted, extended spindle
18	Aft Fire Pump Supply	Firemain and Sprinkler System	FM-3	2 1/2"	Screw Lift	82	Propulsion motor room - aft stbd side	Hull mounted
19	Oily Water Separator Discharge	Bilge and Ballast System	BB-98	2 1/2"	SDNR	61	Lower generator room between domestic fresh water & sanitary sea water pressure tanks - fwd stbd side	Side shell mounted
20	RODP Sea Water Pump Suction	Sanitary & Domestic Cold Water Mist System	RU-100	1 1/2"	Gate Valve	70	Sea bay fwd of acoustic enclosure - stbd side	Hull mounted, extended spindle
21	RODP Sea Water Pump Discharge	Sanitary & Domestic Cold Water Mist System	DF-163	1/2"	Gate Valve	73	Sea Chest lower generator room - aft stbd side	Hull mounted
22	Sanitary Seawater Feed Pump Supply	Sanitary & Domestic Cold Water Mist System	SN-1	1 1/2"	Gate Valve	60	Sea bay fwd of acoustic enclosure - stbd side	Hull mounted, extended spindle
23	Propulsion Motor Sea Water pump Supply	SW & FW Cooling System	SW-5	4"	Butterfly	60	Sea bay fwd of acoustic enclosure - stbd side	Hull mounted
24	Propulsion Motor Sea Water pump Discharge	SW & FW Cooling System	SW-21	3"	Butterfly	74	Sea Chest lower generator room - aft stbd side	Hull mounted
25	Steering Gear Hydraulic Oil Cooler / Propulsion Air cooler Discharge	SW & FW Cooling System	SW-22 / 25	1 1/2"	Butterfly	74	Sea Chest lower generator room - aft stbd side	Hull mounted
26	Air Conditioning Sea Water Pump Supply	AC unit Sea Water Cooling System	AC-1	4"	Butterfly	60	Sea bay fwd of acoustic enclosure - stbd side	Hull mounted
27	Air Conditioning Sea Water Pump Discharge	AC unit Sea Water Cooling System	AC-4	4"	Butterfly	74	Sea Chest lower generator room - aft stbd side	Hull mounted
28	Sea Bay Vent Port	Air and Sounding System	VS1	3"	Butterfly	60	Sea bay fwd of acoustic enclosure behind waste oil tank - port side	Hull mounted
29	Sea Bay Vent Stbd	Air and Sounding System	VS1	3"	Butterfly	60	Sea bay fwd of acoustic enclosure behind domestic fresh water pressure tank - stbd side	Hull mounted
30	Aft Sea Chest	Air and Sounding System	VS1	3"	Butterfly	74	Sea Chest lower generator room - aft stbd side	Hull mounted
31	Aft Sewage Plant discharge	Scupper & Sewage Disposal System	SD-99A	4"	Storm Valve	72+300mm	Lower generator room - aft stbd side	Side shell mounted
32	Aft Bilge & Ballast Pump Supply	Bilge and Ballast System	BB-109	3 1/2"	Angle SDNR	83+300mm	Propulsion motor room - aft port side	Hull mounted
33	Aft Bilge & Ballast Pump Discharge	Bilge and Ballast System	BB-112	3 1/2"	SDNR	83	Propulsion motor room - aft stbd side	Side shell mounted
34	Aft Fire Pump Supply	Firemain and Sprinkler System	FM-3	2 1/2"	Angle SDNR	83	Propulsion motor room - aft stbd side	Hull mounted
35	Aft Hydraulic Unit Supply	Aft Hydraulic Piping System	AC-34	3"	Gate Valve	93	Aft hydraulic room - fwd mid-ship	Deck level mounted
36	Aft Hydraulic Unit Discharge	Aft Hydraulic Piping System	AC-40	2"	Gate Valve	94	Aft hydraulic room - fwd stbd side	Side shell mounted

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work

Additional information
for the former HMCS PRESERVER:
Estimated Liquid Loads for the former HMCS PRESERVER

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

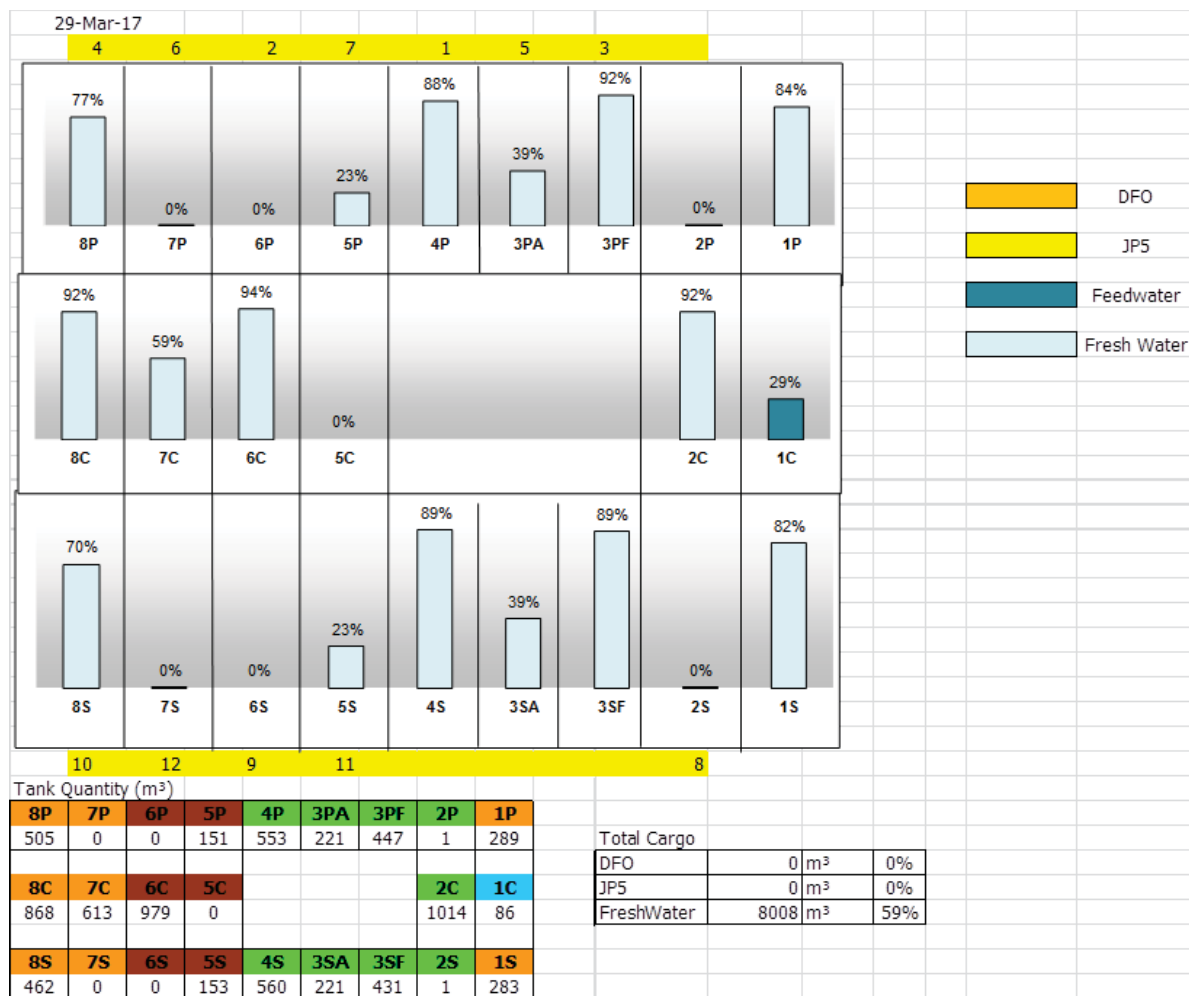
Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Appendix 1 to Annex "A" – Statement of Work

Estimated Liquid Loads for the former HMCS PRESERVER

Estimated FFO cargo system for the former HMCS PRESERVER as of March 29, 2017:



Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Snapshot of the Engine Room/Boiler Room DFO system containing approx. 139.1m³ on the former HMCS PRESERVER as of March 29, 2017:

Distillate Fuel	@ 100 %	Brls. Rem	% Rem						
Port Bunker	3340	171.0	5.1%	Total Fuel Wt (Short Tons)					
Stbd Bunker	3340	640.0	19.2%	Port	25.1	Stbd	103.5	Dif.	-78.4
Port Settling	1251	0.0	0.0%						
Stbd Settling	1251	0.0	0.0%	Received From Bunkering:		0.0	BBLS/	0.0	cuM
Total (BBLS)	9182	811.0	8.8%	Expended Since Last Report		0.0	BBLS/	0.0	cuM
Diesel Fuel	@ 100 %	Brls. Rem	% Rem	Expended Since Last Report		0.0	BBLS/	0.0	cuM
Port ER DB Tk	317	0.0	0.0%	Total Fuel					
Stbd ER DB Tk	317	64.0	20.2%		875.0	BBLS	9.0%	139.1	cuM
Total (BBLS)	634	64.0	10.1%						

Estimated additional tank information for the former HMCS PRESERVER as at April 7, 2017:

Fore Peak Tank: 129LT Capacity – 0Lt

Water Ballast Tank Fr.38-50: 339LT Capacity – 0LT

#3 Double Bottom Water Ballast Tank Fr.69-75: 374LT Capacity – 373.79LT 100% Saltwater

#4 Double Bottom Water Ballast Tank Fr.75-78: 210LT Capacity – 210.15LT 100% Saltwater

Aft Peak Tank: 368LT Capacity – 93.94LT 25.5% Saltwater

Boiler Room Double Bottom Fr.93-97 (Port): 69.47LT Capacity – 0LT

Boiler Room Double Bottom Fr.93-97 (Stbd): 70.29LT Capacity – 0LT

#5 FFO DB CL 203.46LT 100% Fresh Water

#6 FFO DB CL 193.01LT 100% Fresh Water

#7 FFO DB CL 195.54LT 100% Fresh Water

#8 FFO DB CL 193.03Lt 100% Fresh Water

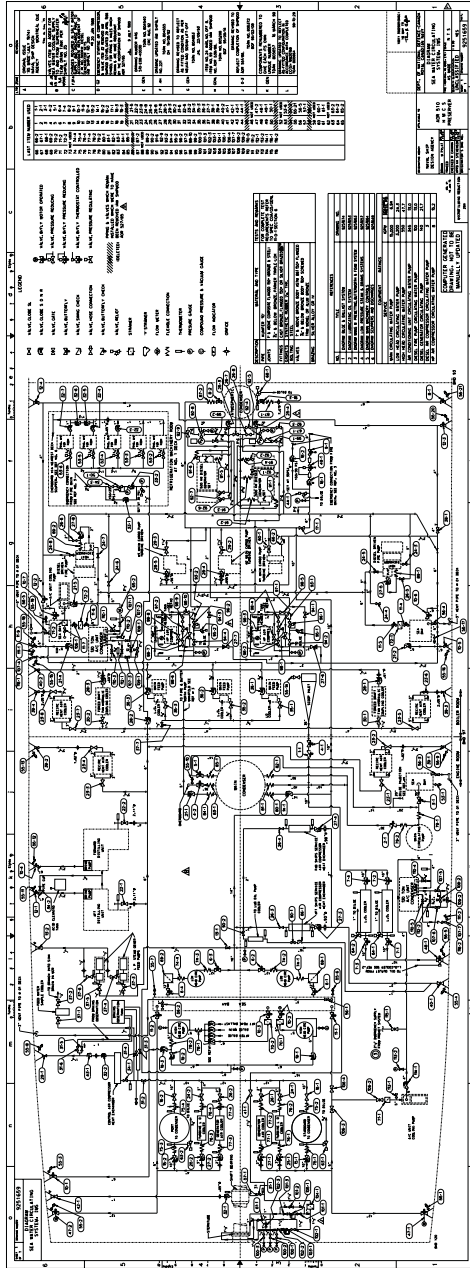
Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work

Additional information
for the former HMCS PRESERVER:
Sea Water Circulating System Drawing for the former HMCS PRESERVER



Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work

Additional information
for the former HMCS PRESERVER:
Bilge and Ballast System Drawing for the former HMCS PRESERVER

REMAIN SERVED BY THE FOLLOWING PUMPS:-

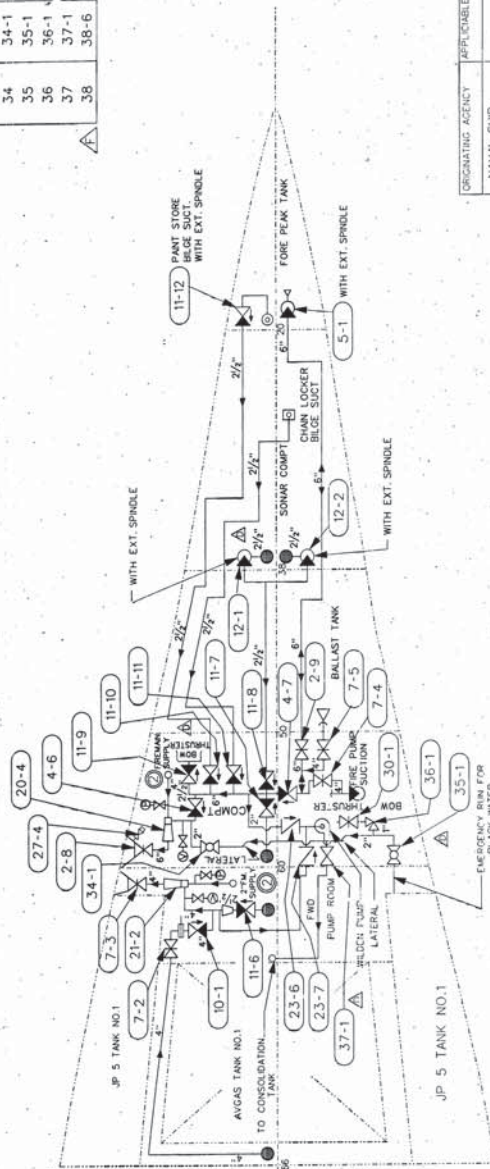
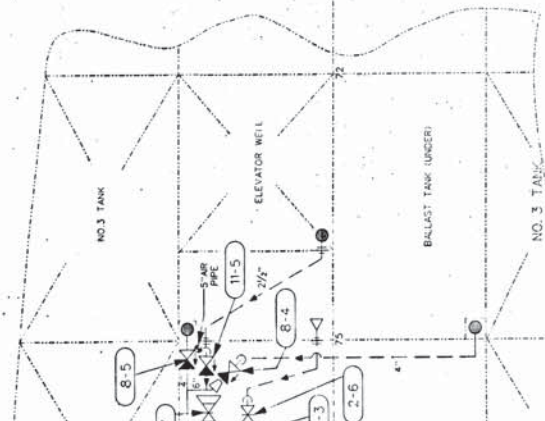
OVERBOARD DISCHARGE



REFERENCES	
NO.	TITLE
1	CARGO OIL SYSTEM DIAGRAM
2	DIAGRAM-MAIN SEAWATER-PREHEATING BUTTERWORTH & FOAM SYSTEM
3	DIAGRAM-CIRCULATING AND COOLING WATER SYSTEM

251663

EQUIPMENT RATINGS		
SERVICE	GPM	PRESSURE
EDUCTOR-STEERING	200	125 PSI
EDUCTOR-ENGINE ROOM	400	125 PSI
EDUCTOR-BOILER ROOM	400	125 PSI
EDUCTOR-CARGO HOLD	400	125 PSI
EDUCTOR-AT PUMP ROOM	400	125 PSI
EDUCTOR-FORWARD BALLAST TANKS	400	125 PSI
EDUCTOR-AVGAS COFFERDAM	80	125 PSI
AUXILIARY BILGE PUMP (2 OFF)	80	
SUMP PUMP	40	



PLAN VIEW-TANK TOP

LAST TIME NUMBER ISSUED	1	1-1
2	2-9	2
3	3-3	3
4	4-7	4
5	5-1	5
6	6-2	6
7	7-5	7
8	8-5	8
9	9-5	9
10	10-1	10
11	11-12	11
12	12-2	12
13	13-1	13
14	14-4	14
15	15-3	15
16	16-2	16
17	17	17
18	18-2	18
19	19-1	19
20	20-5	20
21	21-2	21
22	22-3	22
23	23-7	23
24	24-4	24
25	25-2	25
26	26-2	26
27	27-4	27
28	28-1	28
29	29-1	29
30	30-1	30
31	31-1	31
32	32-1	32
33	33-1	33
34	34-1	34
35	35-1	35
36	36-1	36
37	37-1	37
38	38-6	38

ORIGINATING AGENCY	APPLICABLE TO
NAVAL SHIP DESIGN AGENCY	AOR 510 H.M.C.S. PRESERVER
DRAWN: J * INALD 15SEP 73	
TRACED	
CHECKED BY MAXWELL 1 APR 76	
APPROVED BY [Signature] 16 SEP 76	
ORIGINATOR'S DWG NO.	

COMPUTER GENERATED
DRAWING, NOT TO BE
MANUALLY UPDATED

DATE

CELESTIAL

DATE 18 MAY 73

THE UNIVERSITY OF CHICAGO

OFFICE - CANADA

U.S. NAVY

RAM

LAST SYSTEM

SCALE

NONE
15.8V

YES

9251674

0

—

20F2

100

© 2000 Blackwell Science Ltd, *Journal of Internal Medicine* 247: 101–108

FRAME 2 OF 2

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work

Additional information
for the former HMCS PRESERVER:

Estimated on-load weights and locations for the former HMCS PRESERVER

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

**Estimated on-load weights and locations
for the former HMCS PRESERVER
as of March 29, 2017**

Hangar 205,381 Lbs
Main Magazine 2 Deck 58,100 Lbs
Main Magazine 3 Deck 54,424 Lbs
Main Magazine 4 Deck 98,494 Lbs

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

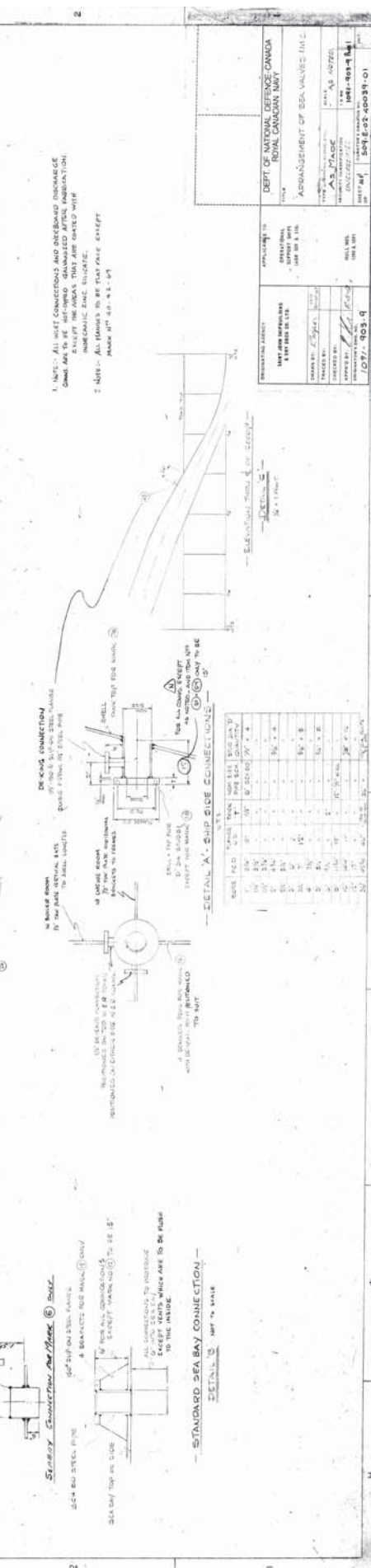
Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work

Additional information
for the former HMCS PRESERVER:
Valve Plan for the former HMCS PRESERVER

NAVY 1 5015-02-40039-01
 TITLE
 ARRANGEMENT OF SEA VALVES I.M.S.



SEA BAY CONNECTIONS				REVISION	
NO.	DATE	DESCRIPTION	BY	CHKD.	APP'D.
1	1971-01-15	INITIAL DESIGN	J. H. B.		
2	1971-02-10	REVISED FOR VALVE SIZES	J. H. B.		
3	1971-03-05	REVISED FOR VALVE SIZES	J. H. B.		
4	1971-04-10	REVISED FOR VALVE SIZES	J. H. B.		
5	1971-05-15	REVISED FOR VALVE SIZES	J. H. B.		
6	1971-06-20	REVISED FOR VALVE SIZES	J. H. B.		
7	1971-07-25	REVISED FOR VALVE SIZES	J. H. B.		
8	1971-08-30	REVISED FOR VALVE SIZES	J. H. B.		
9	1971-09-10	REVISED FOR VALVE SIZES	J. H. B.		
10	1971-10-15	REVISED FOR VALVE SIZES	J. H. B.		
11	1971-11-20	REVISED FOR VALVE SIZES	J. H. B.		
12	1971-12-25	REVISED FOR VALVE SIZES	J. H. B.		
13	1972-01-30	REVISED FOR VALVE SIZES	J. H. B.		
14	1972-02-10	REVISED FOR VALVE SIZES	J. H. B.		
15	1972-03-15	REVISED FOR VALVE SIZES	J. H. B.		
16	1972-04-20	REVISED FOR VALVE SIZES	J. H. B.		
17	1972-05-25	REVISED FOR VALVE SIZES	J. H. B.		
18	1972-06-30	REVISED FOR VALVE SIZES	J. H. B.		
19	1972-07-10	REVISED FOR VALVE SIZES	J. H. B.		
20	1972-08-15	REVISED FOR VALVE SIZES	J. H. B.		
21	1972-09-20	REVISED FOR VALVE SIZES	J. H. B.		
22	1972-10-25	REVISED FOR VALVE SIZES	J. H. B.		
23	1972-11-30	REVISED FOR VALVE SIZES	J. H. B.		
24	1972-12-10	REVISED FOR VALVE SIZES	J. H. B.		
25	1973-01-15	REVISED FOR VALVE SIZES	J. H. B.		
26	1973-02-20	REVISED FOR VALVE SIZES	J. H. B.		
27	1973-03-25	REVISED FOR VALVE SIZES	J. H. B.		
28	1973-04-30	REVISED FOR VALVE SIZES	J. H. B.		
29	1973-05-10	REVISED FOR VALVE SIZES	J. H. B.		
30	1973-06-15	REVISED FOR VALVE SIZES	J. H. B.		
31	1973-07-20	REVISED FOR VALVE SIZES	J. H. B.		
32	1973-08-25	REVISED FOR VALVE SIZES	J. H. B.		
33	1973-09-30	REVISED FOR VALVE SIZES	J. H. B.		
34	1973-10-10	REVISED FOR VALVE SIZES	J. H. B.		
35	1973-11-15	REVISED FOR VALVE SIZES	J. H. B.		
36	1973-12-20	REVISED FOR VALVE SIZES	J. H. B.		
37	1974-01-25	REVISED FOR VALVE SIZES	J. H. B.		
38	1974-02-28	REVISED FOR VALVE SIZES	J. H. B.		
39	1974-03-10	REVISED FOR VALVE SIZES	J. H. B.		
40	1974-04-15	REVISED FOR VALVE SIZES	J. H. B.		
41	1974-05-20	REVISED FOR VALVE SIZES	J. H. B.		
42	1974-06-25	REVISED FOR VALVE SIZES	J. H. B.		
43	1974-07-30	REVISED FOR VALVE SIZES	J. H. B.		
44	1974-08-10	REVISED FOR VALVE SIZES	J. H. B.		
45	1974-09-15	REVISED FOR VALVE SIZES	J. H. B.		
46	1974-10-20	REVISED FOR VALVE SIZES	J. H. B.		
47	1974-11-25	REVISED FOR VALVE SIZES	J. H. B.		
48	1974-12-30	REVISED FOR VALVE SIZES	J. H. B.		
49	1975-01-10	REVISED FOR VALVE SIZES	J. H. B.		
50	1975-02-15	REVISED FOR VALVE SIZES	J. H. B.		
51	1975-03-20	REVISED FOR VALVE SIZES	J. H. B.		
52	1975-04-25	REVISED FOR VALVE SIZES	J. H. B.		
53	1975-05-30	REVISED FOR VALVE SIZES	J. H. B.		
54	1975-06-10	REVISED FOR VALVE SIZES	J. H. B.		
55	1975-07-15	REVISED FOR VALVE SIZES	J. H. B.		
56	1975-08-20	REVISED FOR VALVE SIZES	J. H. B.		
57	1975-09-25	REVISED FOR VALVE SIZES	J. H. B.		
58	1975-10-30	REVISED FOR VALVE SIZES	J. H. B.		
59	1975-11-10	REVISED FOR VALVE SIZES	J. H. B.		
60	1975-12-15	REVISED FOR VALVE SIZES	J. H. B.		
61	1976-01-20	REVISED FOR VALVE SIZES	J. H. B.		
62	1976-02-25	REVISED FOR VALVE SIZES	J. H. B.		
63	1976-03-30	REVISED FOR VALVE SIZES	J. H. B.		
64	1976-04-10	REVISED FOR VALVE SIZES	J. H. B.		
65	1976-05-15	REVISED FOR VALVE SIZES	J. H. B.		
66	1976-06-20	REVISED FOR VALVE SIZES	J. H. B.		
67	1976-07-25	REVISED FOR VALVE SIZES	J. H. B.		
68	1976-08-30	REVISED FOR VALVE SIZES	J. H. B.		
69	1976-09-10	REVISED FOR VALVE SIZES	J. H. B.		
70	1976-10-15	REVISED FOR VALVE SIZES	J. H. B.		
71	1976-11-20	REVISED FOR VALVE SIZES	J. H. B.		
72	1976-12-25	REVISED FOR VALVE SIZES	J. H. B.		
73	1977-01-30	REVISED FOR VALVE SIZES	J. H. B.		
74	1977-02-10	REVISED FOR VALVE SIZES	J. H. B.		
75	1977-03-15	REVISED FOR VALVE SIZES	J. H. B.		
76	1977-04-20	REVISED FOR VALVE SIZES	J. H. B.		
77	1977-05-25	REVISED FOR VALVE SIZES	J. H. B.		
78	1977-06-30	REVISED FOR VALVE SIZES	J. H. B.		
79	1977-07-10	REVISED FOR VALVE SIZES	J. H. B.		
80	1977-08-15	REVISED FOR VALVE SIZES	J. H. B.		
81	1977-09-20	REVISED FOR VALVE SIZES	J. H. B.		
82	1977-10-25	REVISED FOR VALVE SIZES	J. H. B.		
83	1977-11-30	REVISED FOR VALVE SIZES	J. H. B.		
84	1977-12-10	REVISED FOR VALVE SIZES	J. H. B.		
85	1978-01-15	REVISED FOR VALVE SIZES	J. H. B.		
86	1978-02-20	REVISED FOR VALVE SIZES	J. H. B.		
87	1978-03-25	REVISED FOR VALVE SIZES	J. H. B.		
88	1978-04-30	REVISED FOR VALVE SIZES	J. H. B.		
89	1978-05-10	REVISED FOR VALVE SIZES	J. H. B.		
90	1978-06-15	REVISED FOR VALVE SIZES	J. H. B.		
91	1978-07-20	REVISED FOR VALVE SIZES	J. H. B.		
92	1978-08-25	REVISED FOR VALVE SIZES	J. H. B.		
93	1978-09-30	REVISED FOR VALVE SIZES	J. H. B.		
94	1978-10-10	REVISED FOR VALVE SIZES	J. H. B.		
95	1978-11-15	REVISED FOR VALVE SIZES	J. H. B.		
96	1978-12-20	REVISED FOR VALVE SIZES	J. H. B.		
97	1979-01-25	REVISED FOR VALVE SIZES	J. H. B.		
98	1979-02-28	REVISED FOR VALVE SIZES	J. H. B.		
99	1979-03-10	REVISED FOR VALVE SIZES	J. H. B.		
100	1979-04-15	REVISED FOR VALVE SIZES	J. H. B.		



Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

**Appendix 1 to Annex "A" – Statement of Work
Reference Documents and Critical Documentation, Reports
that form part of this Statement of Work**

**Additional information
for the former HMCS PRESERVER:**

Environmental Assessment of HMCS PRESERVER FINAL REPORT

**Environmental Assessment
of
HMCS PRESERVER
FINAL REPORT**

Task Number: IRO(D)-294

REPORT NUMBER: RPT-IRO294-02-01

24 Mar 2015

Prepared for

ISSC (IRO) PM

Department of National Defence

by

Fleetway Inc.



NOTICE

This documentation has been reviewed by the technical authority and does not contain controlled goods. Disclosure notices and handling instructions originally received with the document shall continue to apply.

AVIS

Cette documentation a été révisée par l'autorité technique et ne contient pas de marchandises contrôlées. Les avis de divulgation et les instructions de manutention reçues originalement doivent continuer de s'appliquer.

Requested by:	Mr. M. Stege, ISSC(IRO) PM	Dated:	27 Jun 12
Prepared by:	R.J. Skinner, P.Eng	Dated:	16 Mar 15
Reviewed by:	S.Brake, P.Eng	Dated:	24 Mar 15

"© HER MAJESTY THE QUEEN IN THE RIGHT OF CANADA 2015"



UNCLASSIFIED

Halifax Ottawa Victoria St. John's
www.fleetway.ca

Revision -

REPORT REVISION

REV	DATE	SECTION	PAGE	AUTHORITY	DESCRIPTION
-		All	N/A	M. Soper	Final Report

Does not contain controlled goods

UNCLASSIFIED

Halifax Ottawa Victoria St. John's
www.fleetway.caRevision -
Page 2

TABLE OF CONTENTS

1.0	PROJECT IDENTIFICATION & VESSEL REGISTRATION.....	5
2.0	ASSESSMENT SUMMARY - ENVIRONMENTAL EFFECTS, CONCLUSIONS AND RECOMMENDATIONS.....	6
2.1	EXECUTIVE SUMMARY.....	6
2.2	EA DETERMINATION.....	6
2.3	FOLLOW-UP.....	6
2.4	GLOSSARY & DEFINITIONS	6
3.0	PART III RECOMMENDATIONS AND SIGN - OFF	8
4.0	PART IV DETAILED ASSESSMENT OF ENVIRONMENTAL EFFECTS.....	8
4.1	PROJECT DESCRIPTION AND SCOPE	8
4.2	REFERENCES	10
4.3	CONSULTATION AND SITE VISITS	10
4.4	ENVIRONMENTAL EFFECTS - VESSEL SURVEY, SAMPLING AND ANALYSIS RESULTS	11
4.5	HAZMAT / SOC - SPECIFIC ASSESSMENT OF EFFECTS.....	12
4.5.1	Arsenic	12
4.5.2	Asbestos.....	14
4.5.3	Compressed gases.....	16
4.5.4	General petroleum, Oil and lubricants	18
4.5.5	Ionizing radiation sources (radioisotopes)	20
4.5.6	Metals	21
4.5.7	Organochlorines & carbamates	25
4.5.8	Ozone depleting substances	26
4.5.9	Oxidizing and reducing agents	27
4.5.10	Polycyclic aromatic hydrocarbons (PAHs).....	29
4.5.11	Polychlorinated biphenyls.....	30
4.5.12	Surfactants	32
4.5.13	Pyrotechnics	33

Does not contain controlled goods

4.5.14	Volatile organic compounds (VOCs)	34
4.6	DISCUSSION OF EFFECTS AND MITIGATION	35
4.6.1	General	35
4.6.2	PCBs	35
4.7	CUMULATIVE EFFECTS	35
4.7.1	General	35
4.7.2	PCBs	35
4.8	ACCIDENTS AND MALFUNCTIONS	36
4.9	EFFECTS OF THE ENVIRONMENT ON THE PROJECT	36
4.10	FOLLOW-UP PROGRAM	36
4.11	CONCLUSIONS	37
4.12	RECOMMENDATIONS	37
	ANNEX A - RELATIONSHIP MATRIX: HAZMAT/SOC & VALUED ECOSYSTEM COMPONENTS	38
	ANNEX B - CERTIFICATES OF ANALYSIS, ALS ENVIRONMENTAL	39

Does not contain controlled goods

Environmental Assessment - HMCS PRESERVER**1.0 PROJECT IDENTIFICATION & VESSEL REGISTRATION**

1.1 Project Title: Environmental Assessment - HMCS PRESERVER
1.2 Project Schedule: 14 Jul 2012 - 28 Mar 2015
1.3 Project Location: Halifax, NS
1.4 Originating Directorate: DGMEPM/ISSC(IRO) PM
1.5 EA Start Date: 14 Jul 2012
1.6 Project Summary: Project Type - "Other (non-CEAA)" Project Trigger - "Proponent"
1.7 OPI's EA / Project File Ref #: W8482-4500952056
1.8 Other Responsible Federal Authorities: N/A
1.9 Federal Environmental Assessment Coordinator: N/A
1.10 Contacts: Project OPI - Mr. M. Stege, ISSC(IRO) PM Ship Disposal / Dismantling DMEPM MWVA 5-5 LSTL , 4th Floor National Defence Ottawa, Canada K1A 0K2 (819) 939-3499 Fleetway Inc. OPI (EA) - Mr. R.J. Skinner, EP, P.Eng Suite 250-825 Broughton St. Victoria, BC V8W 1E5 (250)-480-3344
1.11 Public Notification: N/A

Does not contain controlled goods

2.0 ASSESSMENT SUMMARY - ENVIRONMENTAL EFFECTS, CONCLUSIONS AND RECOMMENDATIONS

2.1 EXECUTIVE SUMMARY

Under ISSC (IRO) task IRO - 294, an environmental assessment (EA) was conducted in HMCS PRESERVER in support of DND's intent to decommission, divest and dispose of the ship in 2016. The EA was conducted in three phases: 1. a review of existing, relevant documentation and on-site survey, 2., on-site sampling of compartments, systems, equipment, cabling and cable transits for specific HAZMATs and substances of concern (SOCs), and 3., laboratory analysis and preparation of the assessment report. Phase 1 was conducted July-Aug 2012. Phase 2 was conducted between Aug 2014 and Oct 2014. Phase 3 started in Oct 2014 and concluded 27 Mar 2015. Sampling for specific HAZMATs included: asbestos, lead and other metals in paints and claddings, PCBs in cables, paints and insulation. The project is considered substantially complete. Follow-on sampling and analysis for arsenic, asbestos, metals in paint and PCBs as well as tributyl and triphenyltin is required for a complete assessment of the significance of these materials in general and recommendations for mitigation, removal and/remediation of PCBs in particular.

As of the date of preparation of this report, sampling for certain HAZMAT, particularly PCBs, asbestos, tributyl and triphenyltin was either incomplete or not considered. As a result the sampling and analysis database is not considered complete. If further sampling for these or other HAZMATs is requested by DND, the database will be updated and the data transferred to the master MEL data base once the results of laboratory analysis have been obtained from ALS. If further sampling is not requested, the data 'in-hand' as of the date of preparation of this report will be considered final and transferred as-is to the master MEL data base.

2.2 EA DETERMINATION

PCBs were detected in samples in concentrations exceeding levels specified in applicable federal regulations. This results in a determination that the disposal of HMCS PRESERVER represents a significant risk to the VECs identified in this report. Further testing for arsenic, metals in paint, PCBs, tributyl and triphenyltin is recommended following the ship's decommissioning.

2.3 FOLLOW-UP

Section 4.10 of this report details the recommended follow-up program with respect to the disposal of HMCS PRESERVER.

2.4 GLOSSARY & DEFINITIONS

Applicable laws and regulations. For the purposes of this report, the term *Applicable laws and regulations* includes all DND, international, federal, provincial and municipal laws, regulations, bylaws, codes and/ or guidelines applicable to the specific circumstance (e.g. handling, removal, transport, storage or disposal) of a particular HAZMAT or substance of concern.

Bioaccumulation. A general term describing a process by which chemicals are taken up by an organism either directly from exposure to a contaminated medium or by consumption of food

Does not contain controlled goods

containing the chemical (US EPA). In essence, a substance that bioaccumulates will generally be found in higher concentrations in a predator than in a prey organism. In the context of the food chain, humans are considered predatory organisms.

Bioconcentration. A process leading to a higher concentration of a substance in an organism than in environmental media to which it is exposed (WHO-1979). In essence particular organs and tissues in some organisms will tend to concentrate a given substance. For example, a lipophilic (fat loving) substance e.g. hexane will tend to accumulate and therefore concentrate in the fatty tissues in exposed animals and humans. Both bioaccumulation and bioconcentration are important considerations in assessing the toxicity of a substance to humans or other species.

Carcinogen. A cancer causing substance or agent. ^{note 1}

Contaminant. A biological, chemical, physical or radiological substance, normally not found in the environment which, in sufficient concentration, can adversely affect living organisms through its presence in air, water, soil, or food. ^{note 1}

Mutagen. An agent including a chemical, energy source, or radioactive element that can induce or increase the frequency of mutation in an organism. ^{note 1}

Persistent Organic Pollutant (POP). Toxic chemicals that adversely affect human health and the environment because they can be transported by air and water currents.

Physical Disposal Phase: For the purposes of this report, physical disposal is the phase in PRESERVER's disposal process where the physical handling, dismantling, deconstruction, removal, transport and storage of equipment, materials and structures occur. It is assumed that this phase will be conducted by a competent, qualified contractor (disposal facility or shipyard) that is compliant with applicable Canadian laws, regulations and permits as well as any applicable international accords.

Pollutant. A substance or energy introduced into the environment that has undesired effects, or adversely affects the usefulness of a resource. A pollutant may cause acute or chronic damage to living organisms (including humans) by changing the growth rate, interference with normal biological functions (see: mutagen, carcinogen, teratogen), or by interfering with human amenities, comfort, health, or property values. Pollutants can be classified by: 1.) origin (natural or synthetic), 2.) their effect on an organ, specie, or an entire ecosystem, 3.) their mobility, persistence or toxicity, and 4.) ease or difficulty of removal. ^{note 1}

Teratogen. An agent such as a virus, drug or radiation that causes malformation of an embryo or fetus. ^{note 1}

Toxicant. A man-made (synthetic substance) that presents a risk of death, disease, injury, or birth defects in living organisms through absorption, adsorption, ingestion, inhalation, or by altering the organism's environment. A **Toxin**, on the other hand, is produced in nature by a living animal or plant. ^{note 1}

Note 1: Glossary Source: *The Free Dictionary* at <http://www.thefreedictionary.com>

Does not contain controlled goods

UNCLASSIFIED

Halifax Ottawa Victoria St. John's
www.fleetway.ca

Revision -
Page 7

3.0 PART III RECOMMENDATIONS AND SIGN - OFF

3.1 EA Report prepared by:

R.J. Skinner, P.Eng, EP, 16 March, 2013

3.2 EA Report reviewed by;

S. Brake, P.Eng, Project Manager, March, 2013

3.3 EA Report accepted and approved by;

M. Stege, ISSC(IRO) PM Date:

4.0 PART IV DETAILED ASSESSMENT OF ENVIRONMENTAL EFFECTS

4.1 PROJECT DESCRIPTION AND SCOPE

Boundaries

HMCS PRESERVER (AOR 510) is currently operational and is based out of CFB Halifax, Halifax, Nova Scotia. As of the report date, the ship is planned for de-commissioning sometime in 2016. For the purposes of this assessment, it is presumed, that disposal activities will fall into the following broad phases:

- Pre-decommissioning phase: general de-storing and de-ammunitioning.
- Decommissioning & divestiture from the list of Crown assets.
- Pre-disposal phase: removal de-fuelling/watering and removal of remaining ITAR and controlled goods. It is suggested this phase should include a docking where a follow-on environmental survey and sampling activity could occur to assess areas of the ship not accessible during the operational phase, and
- Physical disposal phase: physical removal, dismantling, deconstruction and scrapping of the structure, materials, systems and equipment. It is assumed that physical disposal will be undertaken by a suitably qualified disposal facility / commercial shipyard.

It is also assumed that ex-HMCS PRESERVER will remain on DND property until the transfer of ownership to the disposal facility / commercial shipyard has been completed. The information contained in this report is applicable to the vessel regardless of its location.

Does not contain controlled goods

UNCLASSIFIED

Halifax Ottawa Victoria St. John's
www.fleetway.ca

Revision -
Page 8

Vessel Disposition

Following divestiture and sale to the disposal facility, the disposal facility will be responsible for respecting all federal, provincial and municipal environmental statutes, laws, policies and regulations governing the scrapping of vessels in Canada.

Valued Ecosystem Components

16 valued ecosystem components (VECs) were considered for the disposal of HMCS PRESERVER:

- Atmosphere
- Marine Surface Waters ^{Note 2}
- Ground Water
- Soils
- Terrain
- Noise
- Terrestrial Biota
- Terrestrial habitats
- Marine Biota
- Marine Habitats
- Heritage / Historical
- Recreation / Aesthetic
- Human Health & Safety
- Economy
- Services
- Land Use

Note 2: Marine surface waters include fresh water lakes and river systems as well as their biota and habitats.

The potential for an environmental effect on one VEC may have related, secondary effects on other areas. This EA is focused on the readily apparent, immediate and primary effects on each VEC. The significance of each HAZMAT / SOC and the affected VEC, related to the disposal of HMCS PRESERVER has been determined by evaluating the following factors:

- The extent to which the HAZMAT/SOC is present in PRESERVER and level of contamination known or suspected at individual sites. (i.e. How widespread is the HAZMAT/SOC and at what level(s)?)
- Environmental availability (i.e. How likely is the HAZMAT/SOC to affect one or more VECs without mitigation through the typical disposal activities?)
- Probability of occurrence. A qualitative assessment of the likelihood the HAZMAT / SOC will affect one or more VECs if appropriate mitigation is possible and undertaken prior to or during disposal.

The environmental significance of each HAZMAT / SOC is summarized in section 4.4 as follows:

HAZMAT / SOC Significance	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely		
Significant or Likely		
Unknown		

Annex A depicts the relationship between the hazardous materials and substances of concern (SOC) and the VECs listed above.

Does not contain controlled goods

UNCLASSIFIED	Halifax Ottawa Victoria St. John's www.fleetway.ca	Revision - Page 9
--------------	---	----------------------

4.2 REFERENCES

The following legislation, policies, guidelines and regulations were used in support of the Environmental Assessment of HMCS PRESERVER:

- A. Canadian Environmental Assessment Act (CEAA)
- B. Canadian Environmental Protection Act (CEPA)
- C. Fisheries Act (FA)
- D. Transportation of Dangerous Goods Act (TDGA)
- E. Hazardous Products Act
- F. Canada Labour Code and Canada Occupational Health and Safety Regulations
- G. Canadian Council of Ministers of the Environment (CCME) Guideline for the Management of Polychlorinated Biphenyls (PCB) wastes
- H. Nova Scotia OHS Act - Guideline for Maintenance Operations involving Asbestos
- I. Nova Scotia Environment Act - Asbestos Waste Management Regulations
- J. DGE Directive, DAOD 4003-0 Environmental Protection and Stewardship
- K. DGE Directives DAOD 4003-1 Hazardous Materials Management
- L. DGE Directive DAOD 4003-2 Environmental Assessment
- M. DGMEPM Divisional Instructions 01/2001-TEC
- N. HMCS PRESERVER Ship Hazardous Material Portfolio (SHMP) V3.8.5_07 Aug 2009
- O. PROTECTEUR Class Asbestos Report Rev0.0_Aug 2005
- P. DGMEPM NON-Obsolete PCB-Containing Items_13 Mar 2009
- Q. ISSC W8482-049989/001MC
- R. Fleetway Work Instruction: Eng-WI-540288-001 (11 May 2012)
- S. Fleetway Work Instruction Eng-WI-540294-001 (22 Aug 2012)
- T. Fleetway Risk Management Plan - Environmental Assessments (22 Aug 2012)

4.3 CONSULTATION AND SITE VISITS

The environmental assessment of HMCS PRESERVER was conducted in three phases:

Phase 1 Preliminary Site Inspection & Environmental Survey.

A preliminary site inspection was conducted by the Fleetway Task Lead and the ISSC(IRO) PM in April 2012. Meetings with the ship's command team were held at this time to confirm availability of the ship, accessibility of compartments and any special requirements for the EA. The Environmental Survey was conducted during two periods: 03 Apr - 08 May 2012, and 14 Jul - 07 Sep 2012. During the survey, PRESERVER's Ship's Hazardous Materials Portfolio (SHMP, Aug 2009) and the PROTECTEUR Class asbestos survey results (Aug 2005) were used to identify candidate compartments, systems and equipment for physical sampling and laboratory analysis.

Phase 2. On Site Sampling.

On site work to collect the material samples identified in Phase 1, was conducted from 15 Aug Jan - 24 Sep 2014. Samples were collected in accordance with the applicable occupational health and safety guideline references. Samples were shipped in batches from the ship's location (Halifax, NS) to *ALS Environmental* laboratories in Burnaby, BC for processing and analysis. Analysis results were compiled by ALS and delivered to the Task Lead in Victoria BC

Does not contain controlled goods

for review and assessment. Samples were collected, packaged and shipped in accordance with chain-of-custody protocols established by ALS Environmental.

Phase 3. Review of Analysis Results and EA Report.

Analysis results were reviewed by the Task lead between Oct 2014 and Mar 2015. This report presents the summary of the analytical results. HAZMAT and Substances of Concern (SOCs) identified during Phase 1 as well as sampling data and the analytical results for each sample are contained within the EA section of the PRESERVER, SQL data base which was developed under a separate Fleetway task.

4.4 ENVIRONMENTAL EFFECTS - VESSEL SURVEY, SAMPLING AND ANALYSIS RESULTS

Following review of the survey data gathered during phase 1, it was determined through consultation with ISSS(IRO) PM, that the presences of following HAZMAT required confirmation through sampling and laboratory analysis:

- Asbestos, Bulk (e.g. floor tiling, pipe insulation, etc.)
- Metals in Paint, Swab (e.g. distributed piping systems)
- Lead in Paint, Swab (e.g. decks and bulkheads)
- PCBs in Paint, Swab (e.g. paint in the proximity of equipment known or suspected to contain PCBs.)
- PCBs in insulation, Bulk (e.g. insulating materials and coatings in the vicinity of equipment known or suspected to contain PCBs)
- PCBs in Cabling, Swab (e.g. cables connected to equipment known or suspected to contain PCBs.)

In addition to the confirmatory sampling noted above, the presence of the remaining HAZMAT/SOC identified in annex A in was established through the existing reference records (SHMP, etc.). The following sections detail the potential environmental effects of the HAZMAT / SOC listed at annex A.

Does not contain controlled goods

UNCLASSIFIED

Halifax Ottawa Victoria St. John's
www.fleetway.caRevision -
Page 11

4.5 HAZMAT / SOC - SPECIFIC ASSESSMENT OF EFFECTS

The following sections summarize the assessment of effects for each specific HAZMAT / SOC.

4.5.1 ARSENIC

Valued Ecosystem Components:

Marine Surface Waters
Ground Water
Atmosphere
Soils

Terrestrial Biota & Habitats
Marine Biota & Habitats
Human Health & Safety

Effect(s):

Arsenic was used as an anti-fouling additive to marine hull coatings until as late as the 1960s. Its use was discontinued by industry in favour of the tin-based additives including tributyltin and triphenyltin which have since been replaced by copper and zinc-based systems.

Arsenic is one of the most toxic elements in nature. Marine and terrestrial animals, including humans may be exposed to arsenic through food, water and air. Exposure may also occur through skin contact with soil or water that contains arsenic. Exposure to inorganic arsenic can cause various health effects, such as irritation of the stomach and intestines, decreased production of red and white blood cells, skin changes and lung irritation. It is suggested that the uptake of significant amounts of inorganic arsenic can intensify the chances of cancer development, especially the chances of development of skin cancer, lung cancer, liver cancer and lymphatic cancer.

A very high exposure to inorganic arsenic can cause infertility and miscarriages with women, and it can cause skin disturbances, declined resistance to infections, heart disruptions and brain damage with both men and women. Finally, inorganic arsenic can damage DNA.

Survey Results:

Due to operational consideration, the U/W hull and tank interiors could not be directly surveyed or sampled. Although it is unlikely the current U/W and tank interior coatings in the ship contain significant concentrations of arsenic, this should be confirmed with specific sampling and analysis once these surfaces are accessible following decommissioning.

Mitigation Measures:

Materials containing arsenic (e.g. anti-fouling coatings) should either be removed or sequestered and rendered non bio-available so as to minimize or eliminate the risk of arsenic release into the environment.

Significance:

Subject to confirmatory survey and sampling of the U/W hull and tank interiors, Arsenic is not likely significant provided effective mitigation measures are followed.

Significance: Arsenic	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Does not contain controlled goods

Monitoring:

Disposal of arsenic must be conducted in accordance with applicable laws and regulations. The disposal contractor / shipyard should be made aware that some anti-fouling coatings and paint systems may contain arsenic although this cannot be confirmed without further sampling and analysis.

Does not contain controlled goods

4.5.2 ASBESTOS

Valued Ecosystem Components:

Human Health & Safety

Effect(s):

Asbestos is a mineral used for primarily for thermal insulation, fireproofing and acoustic absorption purposes. Common forms of asbestos found in materials used in HMC Ships may include: *Actinolite*, *Amosite*, *Anthophyllite*, *Chrysotile*, *Crocidolite*, and *Tremolite*. Asbestos that is entrained into other materials such as tiling, paints does not normally present a hazard to the environment or human health. However, when these materials are damaged or disturbed through activities that would be common during disposal (sawing, drilling, breaking, etc.) asbestos fibres can be released into the atmosphere where they can be inhaled. Inhalation of asbestos fibres is a known cause of certain lung cancers including mesothelioma.

Survey Results:

With reference to the SHMP and PROTECTEUR Class Asbestos survey (Ref O.), asbestos is a common constituent in: fittings, gaskets, valves and a variety of machinery components in the ship. As neither reference specifically indicates the presence of asbestos in floor tiling or pipe insulation, samples of these materials were taken and submitted for laboratory analysis.

45 samples were taken to identify possible asbestos or asbestos contamination of compartment insulation. 110 samples were taken to identify possible asbestos or asbestos contamination of piping system insulation. These were sent to the ALS Laboratory in Burnaby, BC for analysis. Samples were shipped, prepared and analysed in accordance with the ALS reference information following each Certificate of Analysis at Annex B.

Three samples returned positive results for chrysotile asbestos in concentrations ranging from 0.1% to 0.5% These were located in the floor tiling presently located in Air Maintenance Coordinators Office (AMCO). 21 samples returned positive results for mica at <1%. All other samples returned no significant results.

Mitigation Measures:

Materials containing asbestos (e.g. gaskets, fittings, valves etc.) should either be removed or sequestered so as to minimize or eliminate the risk of asbestos release into the environment and/or human exposure. The presence of asbestos in AMCO should not be considered exceptional. Further sampling and analysis should be conducted especially of floor tiling of the other office and maintenance spaces in the hangar area.

Does not contain controlled goods

Significance:

Asbestos is assumed to be present in gaskets, fittings and valves, etc. by virtue of notations in the SHMP and Asbestos survey documents. Survey and analysis has also confirmed the presence of asbestos fibres in the floor tiling in AMCO. The possibility remains that there are materials that are not identified in the reference documentation and that have not been sampled in the ship that do contain significant levels of asbestos. Asbestos is not considered significant with appropriate and effective mitigation measures are implemented prior to and maintained during the disposal phase.

Significance: Asbestos	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Monitoring:

Disposal of asbestos must be conducted in accordance with applicable laws and regulations. The disposal contractor / shipyard should be made aware of materials and equipment in the ship that are known to contain asbestos and that these materials and equipment must be handled and disposed of in accordance with all applicable laws and regulations. The disposal contractor / shipyard should also be made aware that the ship may also contain latent materials and equipment containing asbestos beyond that listed in the SHMP and Asbestos survey and that further confirmatory testing in accordance with applicable laws and regulations may be warranted prior to removal, deconstruction or disposal of these items.

Does not contain controlled goods

4.5.3 COMPRESSED GASES

Valued Ecosystem Components:

Atmosphere

Human Health & Safety

Effect(s):

Compressed gases pose a variety of risks to the environment and human health and safety. The environmental effects of HALON and halo-carbon derivatives will be discussed in more detail in section 4.5.8. The remaining gases pose the following risks to human health and safety:

- Rupture or catastrophic failure of pressure vessels
- Fire hazard (acetylene, Oxygen), and
- Toxic effects (acetylene, carbon dioxide, carbon monoxide, anaesthetics)

Survey Results:

The presence of compressed gases in the ship was confirmed through visual survey without resort to any confirmatory sampling. The ship possesses a variety of compressed gases in fixed and portable high-pressure (HP) cylinders. These include:

- Compressed air (breathing apparatus, equipment and machinery)
- Helium & nitrogen (meteorological and drying)
- Argon, oxygen & acetylene (welding)
- Medical oxygen and anaesthetics (sickbay & dental surgery)
- Carbon dioxide (fire extinguishing)
- HALON and halo-carbon derivatives (fire extinguishing & refrigerants)

Mitigation Measures:

Where practical, all portable compressed cylinders should be removed from the ship and returned to the CFSS or disposed of in accordance with applicable DND and overarching regulations. Fixed compressed air cylinders and systems deemed impractical for removal prior to disposal should be safely drained and rendered permanently incapable of pressurization. Mitigation measures applicable to HALON and halo-carbon systems will be discussed in section 4.5.8

Significance:

Compressed gases are not likely to be significant if appropriate and effective mitigation measures are implemented prior to and maintained during the disposal phase.

Significance: Compressed Gases	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Does not contain controlled goods

Monitoring:

The removal, transportation, storage and removal of all portable compressed gas cylinders must be conducted in accordance with applicable laws and regulations. The disposal contractor / shipyard should be made aware of the presence of any remaining compressed gases on board the vessel at the beginning of the disposal phase. It is recommended that DND either prepare internally or secure a qualified contractor to prepare suitable specifications for the draining and rendering inoperable, fitted compressed air systems in the ship either prior to, or during the physical disposal phase.

Does not contain controlled goods

4.5.4 GENERAL PETROLEUM, OIL AND LUBRICANTS

Valued Ecosystem Components:

Marine Surface Waters
Ground Water
Soils
Terrestrial Biota
Terrestrial Habitats

Marine Biota
Marine Habitats
Recreational / Aesthetic
Human Health & Safety
Land Use

Effect(s):

In general, the majority of the materials in this category are natural or synthetic petroleum by-products typically mixed with other organic and/or inorganic compounds. Most POL materials are to some extent, harmful to humans and the environment as contaminants, pollutants and/or toxicants.

Survey Results:

The SHMP lists of the types of POL that are normally found in the the ship. During the survey, a variety of POL in consumable containers were noted. In addition, the ship has a number fitted tanks, located throughout the vessel, most of which were at least partially filled with fuel or lubricating oils. Specific surveys and sampling of POL was not conducted during this assessment. The possible presence of POL was noted in a variety of locations present as a residue of an apparent spill or maintenance activity particularly on the RAS Machinery deck and in the vicinity of all four fueling positions.

Due to her operational status, the ship was also found to have significant fluid accumulation in the vessel's bilges and various save-alls. The contents of these are likely contaminated with fuel oil, POL and/or other potential HAZMAT

Mitigation Measures:

Where practical, all consumable POL should be removed from the ship and returned to the CFSS or disposed of in accordance with applicable DND and overarching regulations. Fixed tanks and other systems containing POL (e.g. fuel and lubricating oil tanks, etc.) deemed impractical for removal prior to disposal should be safely drained and rendered permanently incapable of containing fluids. Bilges and save-alls should be emptied, flushed and the surfaces cleaned in accordance with applicable DND regulations prior to disposal. Removed liquids from bilges and save-alls must be stored, transported and disposed of in accordance with applicable laws and regulations.

Does not contain controlled goods

Significance:

General POLs are not likely to be significant if appropriate and effective mitigation measures are implemented prior to and maintained during the disposal phase.

Significance: General POL	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Monitoring:

The removal, transportation, storage and removal of all general POL must be conducted in accordance with applicable laws and regulations. The disposal contractor / shipyard should be made aware of the presence of any POL in consumable containers on board the vessel at the beginning of the disposal phase. It is recommended that DND either prepare internally or secure a qualified contractor to prepare suitable specifications for the draining and rendering inoperable, fitted tanks and systems in the ship either prior to, or during the physical disposal phase. Removal fluids, flushing and cleaning of bilges and save-alls should be conducted prior to the physical disposal phase.

Does not contain controlled goods

4.5.5 IONIZING RADIATION SOURCES (RADIOISOTOPES)

Valued Ecosystem Components:

Atmosphere	Marine Biota
Marine Surface Waters	Marine Habitats
Ground Water	Recreation / Aesthetic
Soils	Human Health & Safety
Terrestrial Biota	Land Use
Terrestrial Habitats	

Effect(s):

Ionizing radiation sources (radioisotopes) spontaneously emit radiation in specific forms including: neutrons, protons, α , and β - particles, x-rays and γ -rays. All of these forms of radiation are capable of ionizing other materials (i.e. producing radioactive ions) rendering them radioactive in turn. Ionizing radiation sources, in sufficient quantity and level of radioactivity present a serious environmental and human health hazard.

Survey Results:

PRESERVER's SHMP lists the following radioisotopes:

- Americium-241 (smoke detectors)
- Cobalt-60 (TACAN)
- Nickel-63 (RAID-S)
- Tritium-3 (LIROD, Laser Ceilometer, optical sights)

A radiation survey of the ship was not conducted during this assessment. With the exception of the ship's smoke detectors that contain microgram quantities of americium, the remaining radioisotopes are contained within shielding inside equipment. It is not known whether a previous radiation survey of the ship was conducted or whether a Radiation Compliance Certificate was issued.

Mitigation Measures:

It is recommended that all the radio-isotope containing equipment except for the ship's smoke detectors be removed from the ship and returned to the CFSS prior to physical disposal phase. The smoke detectors must be removed, transported, stored and disposed of in accordance with applicable laws and regulations. It is suggested that this be undertaken prior to the physical disposal phase as soon as they are no longer required for ship's safety purposes.

Significance:

Ionizing radiation sources are not likely significant if appropriate and effective mitigation measures are implemented prior to and maintained during the disposal phase.

Significance: Ionizing Radiation	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Monitoring: Any radioactive material must be removed, transported and disposed of in accordance with applicable laws and regulations. The disposal contractor / shipyard should be made aware of the presence of any radioactive materials prior to the physical disposal phase

Does not contain controlled goods

4.5.6 METALS

Valued Ecosystem Components:

Marine Surface Waters	Terrestrial Habitats
Ground Water	Marine Biota
Soils	Marine Habitats
Terrestrial Biota	Human Health & Safety

Effect(s):

Beryllium (Be) is an alkali-earth metal. It can be alloyed with copper as a hardening agent. Beryllium Oxide is also used as an insulator in high -power transistors and RF transmitters. Beryllium and its compounds are generally toxic and are particularly hazardous to humans if inhaled in dust form.

Cadmium (Cd), a metal, is commonly used in corrosion resistant coatings on steel hardware. Cadmium is a primary component in nickel cadmium ('NiCd') batteries. Cadmium is also found in a variety of materials used in brazing and welding processes. Cadmium vapour, emitted from burning or welding cadmium-coated metals, is toxic and hazardous to humans if inhaled.

Chromium (Cr) in metallic form is used to plate steel and brass for corrosion resistance and aesthetic purposes. Metallic chromium (Chrome) is not generally considered to be a significant environmental or human health hazard. Inorganic chromium occurs in two common valences Cr(III) and Cr(VI). Chromates consisting of the Cr(VI) ion are used in the manufacture of zinc chromate which is used as an additive in primers for metal paints. Cr(VI) is highly toxic to humans and most marine biota and bioaccumulates through the food chain.

Copper (Cu), in its metallic state, is ubiquitous in ships in the form of electrical conductors. Copper and copper alloys are also used extensively in piping systems. Metallic copper and copper alloys are not generally considered toxic to the environment or humans unless ingested or inhaled in dust form. Inorganic copper (cupric or cuprous) salts and organic copper compounds (e.g. copper thiocyanates) are still used in ablative anti-fouling coatings in U/W hull paint systems. the preference for copper dissolved in marine environments to bind to silts and mud has resulted in some evidence for bioaccumulation of copper in certain shellfish and other aquatic organisms. Copper's use as an anti-fouling ablative is facing stricter regulation in an number of jurisdictions including some U.S. states.

Lead (Pb) is a soft, dense metal. In metallic form, Lead is most commonly found in ships as ballast, ammunition, diving weights and some radiation shielding applications. Metallic lead is also used in lead-acid batteries and for various soldering purposes. Inorganic lead salts are used as corrosion inhibitors in a variety of paint systems (primers and top-coats). Lead is used for radiation shielding in some CRT displays. Lead is a known neuro-toxin in humans and is toxic to humans when absorbed through the skin, ingested or inhaled in vapour form. Lead is also toxic to a variety of marine organisms and bioaccumulates through the food chain.

Mercury (Hg) is liquid metal at room temperature. In this form it is used in thermometers and related temperature and pressure sensing instruments and transducers. Mercury in vapour form is present in florescent light bulbs. Mercury is also used in some battery applications. Inorganic mercuric salts and organic mercury compounds were used in some anti-fouling

Does not contain controlled goods

applications but its use appears to have been discontinued around 1950. Mercury is toxic to humans and many other organisms. There is some evidence that the material used in poured, EMI-type transits in some HMC ships contains trace amounts of mercury to facilitate grounding of the cables penetrating the transit. This mercury is likely in the form of a metallic amalgam. Mercury is highly toxic to humans. Organic (Methyl) Mercury is particularly toxic. It was the cause of 'Minimata Disease' in Japan as an example. Mercury is also toxic to most other life forms and bioaccumulates through most food chains.

Tin (Sn), in Inorganic and organic compounds (e.g. tributyl- and triphenyl-tin) was used extensively in ablative, anti-fouling coatings of the U/W hulls in ships until the 1960's. Organic tin compounds including TBT and TPT was discontinued by industry for environmental reasons. Inorganic and organic tin compounds are toxic and can bioaccumulate in marine organisms and humans who ingest contaminated species e.g. shellfish. Metallic tin is used in solders but is not generally considered to pose a significant environmental or human health risk in this form unless ingested or inhaled.

Zinc (Zn) in metallic form is a commonly used as a sacrificial material for the protection of ship's hulls, condensers and pump casings, etc. due to its position on the galvanic scale. Inorganic and organic zinc compounds are also used extensively in various paint systems as primers and anti-fouling additives. Zinc, particularly inorganic zinc compounds, are toxic to a variety of marine organisms and can bioaccumulate through the food chain.

Survey Results:

Confirmatory testing was not conducted when sufficient evidence existed in the ship's SHMP and/or other sources that positively indicated the presence of the following metals in specific applications in the ship:

- Beryllium (e.g. Beryllium Oxide - Radars, antennas and similar equipment.)
- Cadmium (e.g. NiCd batteries, plated fasteners, welding rods)
- Chromium (e.g. various plating applications, zinc chromate paint primers)
- Copper (e.g. wiring, piping systems, anti-fouling paints.)
- Lead (e.g. ammunition, diving weights, shielding)
- Mercury (e.g. thermometers, instruments, fluorescent bulbs, batteries)
- Tin (e.g. solder, anti-fouling paints)
- Zinc (e.g. sacrificial anodes, zinc chromate paint primers.)

Confirmatory testing was conducted when lack of information or uncertainty indicated the potential presence of the following metals in certain applications in the ship:

Lead in Paint

149 paint samples were taken in the ship. These were sent to the ALS Laboratory in Burnaby, BC for analysis. Samples were shipped, prepared and analysed in accordance with the ALS reference information following each Certificate of Analysis at Annex B. The analysis results are as follows:

Category 1 (<1,000 mg/Kg). 55 Samples (37%)
Average: 375.4.2 mg/Kg

Does not contain controlled goods

Max: 901 mg/Kg

Min: 6.9 mg/Kg

Category 2 (1,000 - 10,000 mg/Kg). 60 Samples (40%)

Average: 4343.5 mg/Kg)

Max 8800 mg/Kg

Min 1010 mg/Kg

Category 3 (>10,000 mg/Kg). 34 Samples (23%)

Average: 16,202.9 mg/Kg

Max: 34,400 mg/Kg

Min: 10,200 mg/Kg

Summary

The highest concentrations of lead were found in samples from the ship's interior compartments with lower concentrations more typically associated with the exterior hull or superstructure. This is most likely due to lead-based primers used during the ship's construction. Whereas the exterior hull and superstructure is frequently ground or sandblasted to bare steel or aluminium prior to re-painting, this is not as frequent a practice within the ship's interior.

Mitigation Measures:

It is not practical to remove lead from painted surfaces prior to disposal. During the disposal phase, the disposal facility /shipyard should institute all necessary containment measures and utilize equipment and processes required by applicable laws and regulations to prevent the release lead into the environment and reduce the risk of human exposure.

Significance:**Lead in Paint**

The disposal facility / shipyard should be made aware that significant that lead-bearing paints can be found throughout the ship with lead concentrations as high as 34,000 mg/Kg. Grinding, scaling, or burning operations during the physical disposal phase will release lead particles and/or vapour into the atmosphere. Lead in paints is not considered significant if appropriate and effective mitigation measures are implemented prior to and maintained during the physical disposal phase.

Significance: Lead in Paint	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Metals (Cd, Cr Cu, Pb, Sn and Zn in piping system coatings)

59 samples of the paints and coatings used to clad various distributed piping systems were taken (e.g. Fuel Oil Service System, FW Systems, etc.). These were sent to the ALS Laboratory in Burnaby, BC for analysis. Samples were shipped, prepared and analysed in accordance with the ALS reference information following each Certificate of Analysis at Annex B. Trace amounts

Does not contain controlled goods

of most of the metals of interest were found in almost every sample analysed. However, the levels detected were order 10 ug to 100 ug which is not considered significant. With effective mitigation metals in the paints and coatings used to protect piping systems are not considered significant. Because of the nature of the sampling and analysis methods used in this study only absolute quantities of metals in samples were calculated. In order to determine concentrations bulk sampling and analysis would be required.

Significance: Metals (Cd, Cr, Cu, Pb, Sn & Zn in piping system coatings)	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Metals (copper, tin and chromium-based anti-fouling paints)

Review of the SHMP indicates, paints and primers that contain zinc chromate, organic tin or copper additives are likely present in the ship as part of ablative anti-fouling coatings or the coatings of internal fuel or seawater ballast tanks. Further sampling for these metals is warranted following de-commissioning when these surfaces are accessible. A risk and significance determination should be made based on analysis of samples from these areas.

Monitoring:

The removal, transport, storage and disposal of equipment containing hazardous metals must be conducted in accordance with all applicable laws. The hull, superstructure and materials coated with paint systems containing hazardous metals must be handled in accordance with applicable laws. The residues from grinding or stripping operations must also be handled, transported and disposed of in accordance with all applicable laws. Once tank interiors and the U/W hull sections are accessible further testing is suggested for the presence of Cu, Cr, TBT or TPT-based paints. The disposal contractor/shipyard should be made aware of the presence of any hazardous metals prior to the physical disposal phase.

Does not contain controlled goods

UNCLASSIFIED	Halifax Ottawa Victoria St. John's www.fleetway.ca	Revision - Page 24
--------------	---	-----------------------

4.5.7 ORGANOCHLORINES & CARBAMATES

Valued Ecosystem Components:

Marine Surface Waters
Ground Water
Soils
Terrestrial Biota

Terrestrial Habitats
Marine Biota
Marine Habitats
Human Health & Safety

Effect(s):

Organochlorines and carbamates were in common use as pesticides (e.g. DDT) in North America until the late 1960's - early 70's when their use was discontinued through various forms of legislation. Both substances are highly toxic to variety of terrestrial and aquatic species. DDT in particular is known to cause egg-shell thinning in birds. It's toxicity to humans is more controversial. Many organochlorines including DDT are POPs.

Survey Results:

While it is entirely possible organochlorine or carbamate-based pesticides were used in the ship early in its operational lifetime, no evidence of either substance was found during this assessment.

Mitigation Measures: While the probability that organochlorine or carbamate-based pesticides are present in the ship is very low, it is possible some material may be encountered when the ship is de-stored. During this phase of the ship's disposal, careful watch should be taken for any substance containing organochlorines or carbamates (particularly DDT).

Significance:

With appropriate mitigation measures in effect, organochlorines and carbamates are not considered significant.

Significance: Organochlorines and carbamates	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Monitoring: Careful surveillance for any organochlorine or carbamate-based pesticide should be maintained during the de-storing phase of the ship's disposal. Any actual or suspect material must be handled, removed, transported and disposed of in accordance with applicable laws and regulations. The disposal contractor / shipyard should be made aware of the presence of any organochlorines or carbamates prior to the physical disposal phase.

Does not contain controlled goods

4.5.8 OZONE DEPLETING SUBSTANCES

Valued Ecosystem Components:

Atmosphere

Effect(s):

CFCs and HCFCs are ozone depleting substances and green house gases. Many of the specific formulations including some in the ship have been regulated out manufacture and have been phased out of commercial and industrial use. HFCs have been used as substitutes for most CFC applications. HFCs are not ozone depleting substances but are green house gases.

Survey Results:

Review of the SHMP and the results of the physical survey conducted on board determined that CFCs and HCFCs are contained in various ship's systems. Specific sampling for ODS was not conducted during this assessment. The following CFCs and HCFCs are presently contained in ship's systems in PRESERVER:

- HALON 1301 (HCFC - monobromotrifluoromethane, fixed fire suppression systems, various locations)
- Refrigerant R-12 (CFC - dichlorodifluoromethane, water coolers, pop machines, domestic refrigerators)
- Refrigerant R-22 (HCFC - chlorofluoromethane, domestic dehumidifiers, juice dispensers)
- Refrigerant R-134A (HFC - tetrafluoroethane, main refrigeration system, main A/C chiller units, pop machines, ice machines, domestic refrigerators)

Mitigation Measures:

Removal of ODS and other refrigerants should commence prior to or at the outset of the physical disposal phase.

Significance: With proper mitigation measures, Ozone Depleting Substances and non-ODS refrigerants (R-134A) are not considered significant.

Significance: Ozone Depleting Substances	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Monitoring:

HCFCs are ozone depleting substances and green house gases and must be handled, stored, transported and disposed of in accordance with applicable laws and regulations. HFCs are green houses gases and should also be recovered, transported and stored in accordance with applicable laws and regulations. The disposal contractor / shipyard should be made aware of the presence of any ODS prior to the physical disposal phase.

Does not contain controlled goods

4.5.9 OXIDIZING AND REDUCING AGENTS

Valued Ecosystem Components:

Ground Water
Soils
Terrestrial Biota

Marine Biota
Human Health & Safety

Effect(s): Oxidizing and reducing agents are a broad range of chemicals that include some acids and alkalis. Chemicals in this category are typically highly reactive and can produce noxious or toxic fumes when in contact with air, water, metals or other chemicals. Burns or and other health hazards may also result from exposure to oxidizing or reducing agents or their reaction by-products. Due to their chemical properties (e.g. reactivity, pH, etc.), they are often detrimental to marine and terrestrial biota and habitats and can persist in soils. While generally considered HAZMAT, specific laws and regulations will apply to each chemical based on its composition, environmental and human health/safety-related effects as well as the quantity involved in some cases.

Survey Results:

The following chemicals, grouped under the category oxidizing and reducing agents, were either observed during the vessel survey, or noted in the ship's SHMP:

- Potassium superoxide, (MSA Chemox canisters. various locations. These are being phased out of service but it is not known if they will be entirely removed from the ship prior to decommissioning.)
- Sodium chlorate, (EEBDs, various locations)
- Sulphuric Acid, (Lead acid batteries, various locations)
- Sodium hypochlorite, (Bleach solution, VLS system)
- Sodium metabisulphate, (ROD units)
- Citric acid, (Hydromem - OWS)

Mitigation Measures:

The chemicals noted in the survey results are packed in consumable containers, disposable cartridges or within sealed batteries. It is recommended that these materials be removed from the ship and returned to the CFSS for reuse or disposal.

Significance:

With appropriate mitigation measures in place, oxidizing, reducing agents and related chemicals are not considered significant.

Significance: Oxidizing & Reducing Agents	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Does not contain controlled goods

Monitoring:

Removal of oxidizing and reducing agents and related chemicals from the ship should commence as soon as practical and before the physical disposal phase. Removal, transport, disposal and disposal of oxidizing and reducing agents and related chemicals must be conducted in accordance with applicable laws and regulations. The disposal contractor / shipyard should be made aware of the presence of any oxidizing or reducing agents prior to the physical disposal phase.

Does not contain controlled goods

4.5.10 POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

Valued Ecosystem Components

Atmosphere
Terrestrial Biota
Marine Biota

Human Health & Safety
Land Use

Effect(s):

PAHs include a large list of chemicals both manufactured and as by-products from industrial processes and combustion. The acute toxicity of PAHs is not well understood. Chronic exposure to humans has been documented to include adverse: pulmonary, gastrointestinal, renal and dermatological effects in humans. Many PAHs are mutagenic and carcinogenic. Adverse effects from human exposure to contaminated soils has also been documented. The environmental effect of PAHs on marine and terrestrial biota is somewhat less certain.

Survey Results:

Specific sampling for PAHs was not conducted during this assessment. Review of the SHMP and on-site survey results indicate the presence of at least three sources of PAHs in the ship: Naphthalene (in the form of 'cookies' used in urinals as deodorants), Coal Tar (listed in the SHMP as a base coating in some interior paint systems.) and waste lubricating oils from internal combustion engines.

Mitigation Measures:

Mitigation of naphthalene effects is best accomplished by removal and disposal of all naphthalene from lockers and storerooms prior to the physical disposal phase. The coal tar-base coatings in painted structures have been largely mitigated by over-layering with various finish coats. The disposal facility / shipyard should institute appropriate precautions prior to stripping, scaling, grinding or burning structural materials treated with coal tar base coats. Bulk coal tar should be removed from the ship and returned to the CFSS for disposal. Any waste oils removed from internal combustion engines prior to or during the physical disposal phase.

Significance:

With appropriate mitigation measures in place PAHs are not considered significant.

Significance: PAHs	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Monitoring:

Removal of PAHs from the ship should be conducted in accordance with the proposed mitigation measures. Removal, transport, disposal and disposal of PAHs must be conducted in accordance with applicable laws. The disposal contractor / shipyard should be made aware of the presence of any PAHs prior to the physical disposal phase.

Does not contain controlled goods

4.5.11 POLYCHLORINATED BIPHENYLS

Valued Ecosystem Components:

Ground Water	Marine Biota
Soils	Marine Habitats
Terrestrial Biota	Human Health & Safety
Terrestrial Habitats	Land Use

Effect(s):

PCBs were produced in the US and Canada until 1977. They were commonly used in transformers and capacitors as dielectrics. Other commercial applications included: hydraulic fluids, dyes, adhesives, and as a plasticizer in paints. They were also used in older fluorescent lights, refrigerators and television sets. PCBs are known carcinogens in both humans and animal species. PCBs also cause adverse effects on human and animal: immune, reproductive, neurological and endocrine systems. PCBs are persistent contaminants since they do not break down readily. Many PCBs are POPs and can bioaccumulate and/or bioconcentrate. They are particularly harmful to marine species as they tend to concentrate in rivers, lakes and estuaries from contaminated run-off.

Survey Results:

Specific survey and sampling in the ship included suspected PCB-contaminated cables and the deck coatings immediately below equipment identified as having components that contain PCBs. These sites consisted primarily of transformer banks and other electronic equipment. Survey and sampling of equipment interiors including cables in close proximity to PCB components (e.g. internal transformers, capacitors etc.) could not be conducted due to the ship's operational status.

PCBs in Paint

324 paint samples (swabs) were taken in the ship. Samples were typically taken from the deck material underneath transformers, power panels, etc. These were sent to the ALS Laboratory in Burnaby, BC for analysis. Samples were shipped, prepared and analysed in accordance with the ALS reference information following each Certificate of Analysis at Annex B. 308 samples (95%) analysed negative (i.e. PCB concentrations were $<0.20 \mu\text{g}$, the test detection limit.) 15 Samples (5%) had trace amounts of PCBs ($>0.20 \mu\text{g}$ $<10.0 \mu\text{g}$). In this group PCB congeners 1242, 1250, 1254, 1260 and 1262 were detected. All of these congeners are typical of insulating and dielectric oils used in RCN prior to 1977. The majority of these samples were taken in the TACAN Equipment Room and CCR Annex. One sample (0.3%) taken from the CCR annex had a significant concentration of PCB 1262 ($16.0 \mu\text{g}$). Because of the nature of the sampling and analysis methods, concentrations of PCBs could not be calculated, only absolute quantities. Further, bulk sampling and analysis would be required to determine if any of these locations have PCB contamination in excess of the federal limit of 50 mg/Kg.

PCBs in Cables

101 cable insulation samples (swabs from cable cladding) were taken in the ship. Samples were taken from the cable cladding as close as practical to the equipment chassis. These were sent to the ALS Laboratory in Burnaby, BC for analysis. Samples were shipped, prepared and analysed in accordance with the ALS reference information following each Certificate of Analysis at Annex B. 96 samples (95%) analysed negative (i.e. PCB concentrations were <0.20

Does not contain controlled goods

µg, the test detection limit.) 5 Samples (5%) had trace amounts of PCB 1262 (>0.20 µg <10.0 µg). This congener, AROCLOR™ is typical of insulating and dielectric oils used in RCN prior to 1977. These samples were all taken from cabling located in the 400 Cycle compartment. Because of the nature of the sampling and analysis methods, concentrations of PCBs could not be calculated, only absolute quantities. Further, bulk sampling and analysis would be required to determine if any of these locations have PCB contamination in excess of the federal limit of 50 mg/Kg.

PCBs in Insulation

78 paint samples (bulk) were taken in the ship. Samples were typically taken from shell and bulkhead insulating material. These were sent to the ALS Laboratory in Burnaby, BC for analysis. Samples were shipped, prepared and analysed in accordance with the ALS reference information following each Certificate of Analysis at Annex B. 63 samples (81%) analysed negative (i.e. PCB concentrations below the test detection limit.) 8 Samples (10%) had low concentrations of PCB 1254 (<10.0 mg/Kg). This congener is typical of insulating and dielectric oils used in RCN prior to 1977. These samples were taken in the Dispersal Area, GTG compartment, FF workshop, SWHC and No. 6 Stores. Three samples (4%) taken from the 400 Cycle compartment, Dispersal Area and Probe Shop had significant concentrations of PCBs 1254 and 1262 (>10.0 mg/Kg <50 mg/Kg). Four samples (5%) taken from the Dispersal Area, Probe Shop and Air RU Stores had high concentrations of PCB 1254 (>50 mg/Kg) exceeding the federal limit for PCB contamination. The highest detected concentration (255 mg/Kg) was found in the Probe Shop.

Mitigation Measures:

Compartments with PCB concentrations exceeding 50 mg/Kg should be quarantined to prevent further risk of environmental release or human exposure. Compartments with high concentrations of PCBs (>10.0 mg/Kg <50 mg/Kg) should also be considered for quarantine and immediate re-sampling. A competent HAZMAT specialist should be consulted for preferred methods to remove, sequester and/or remediate PCBs from contaminated compartments. Swab and bulk sampling for PCBs in the ship should also be continued.

Significance:

PCB contamination in the ship is significant. In at least three areas of the ship, measured PCB concentrations exceed limits specified in the CEPA and PCB Waste Export Regulations (1996). These and related federal and provincial regulations concern the handling, remediation, transport, export and disposal of materials contaminated with PCBs.

Significance: PCBs	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely		
Significant or Likely	X	X
Unknown		

Monitoring:

Further sampling and analysis as indicated above and consultation with a competent HAZMAT specialist is recommended to better determine appropriate monitoring measures.

Does not contain controlled goods

4.5.12 SURFACTANTS

Valued Ecosystem Components:

Marine Surface Waters
Ground Water
Marine Biota

Marine Habitats
Human Health & Safety

Effect(s):

Surfactants are chemicals or substances that reduce the surface tension of water. This effect is typically by design as it increases the effectiveness of soaps and detergents. Surfactants by themselves have generally low acute toxicity in humans. However, if ingested, they can reduce the permeability of protective mucous membranes and therefore facilitate the uptake of other toxicants or contaminants. Marine organisms that depend upon surface tension for mobility or reproduction are also adversely affected by habitat contamination by surfactants.

Survey Results:

No specific sampling or analysis for surfactants was conducted. The SHMP lists a variety of soaps and detergents in consumable containers. The exact types and quantities were not noted as both are variable in an operational ship. Aqueous Film Forming Foam (AFFF) is stored in the ship in both portable containers and fixed tanks. The AFFF (surfactant) concentration in these containers ranges from 3-7% by volume.

Mitigation Measures:

Surfactants are not generally considered HAZMAT in low volumes. However, large numbers of portable containers and fixed tanks contain enough surfactant concentration to cause serious environmental damage, particularly to marine habitats, if spilled. All consumable cleaning products and portable AFFF containers should be removed and returned to the CFSS following decommissioning as soon as safely practicable. Fitted AFFF tanks should be drained, cleaned and the contents disposed of in accordance with the applicable rules. Fitted tanks should be rendered permanently incapable of containing fluid prior to the physical disposal phase.

Significance:

With appropriate mitigation measures in place, surfactants are not considered significant

Significance: Surfactants	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Monitoring:

Removal of surfactants from the ship should be conducted in accordance with the proposed mitigation measures. Removal, transport, disposal and disposal of surfactants must be conducted in accordance with the applicable laws and regulations. The contractor/shipyard should be made aware of the presence of any surfactants prior to the physical disposal phase.

Does not contain controlled goods

4.5.13 PYROTECHNICS

Valued Ecosystem Components:

Terrestrial Habitats
Terrestrial Biota
Marine Biota

Human Health & Safety
Land Use

Effect(s):

Pyrotechnics includes marine signal flares, explosive and smoke simulators, detonators, explosives, ammunition, missile and rocket motors and warheads as well as torpedo warheads, etc. For the purposes of this assessment, OTTO fuel II, a liquid torpedo propellant is included in this category. The chemicals and substances that are used in pyrotechnics vary widely in composition. The significance of their impact on valued ecosystem components is therefore difficult to assess reliably. Apart from their combustible and/or explosive characteristics, some (e.g. cordite, mercury fulminate, etc.) are either toxic or produce toxic by-products when ignited.

Survey Results:

Specific survey and sampling of pyrotechnics was not conducted during this assessment. The SHMP provides a comprehensive list of materials in this category and includes but is not limited to:

- Flares, smoke signals, smoke pots, thunderflashes (Bridge and bridge wings, Pyro Locker)
- Small arms ammunition, location markers, blasting fuses, marine sound signals (Small Arms Magazine)
- Electric and non-electric detonators (Det Locker)
- 100mm Chaff Rockets (Shield II RU Locker)
- Mk 46 Torpedoes, DM 211 Depth Charges (Torpedo magazine)
- 57mm, 76mm ammunition (ammunition magazines)

Mitigation Measures:

All pyrotechnics and ammunition will presumably be removed from the ship during de-ammunitioning and returned to CFAD for storage and further disposition.

Significance:

With appropriate mitigation in place, pyrotechnics are not considered significant.

Significance: Pyrotechnics	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		

Monitoring:

The handling, removal, transport, storage and disposal of pyrotechnics and ammunition must be conducted in accordance with all applicable laws, rules and regulations. The disposal contractor should be made aware of the presence of any pyrotechnics (including ammunition) prior to the physical disposal phase.

Does not contain controlled goods

4.5.14 VOLATILE ORGANIC COMPOUNDS (VOCs)

Valued Ecosystem Components:		
Atmosphere	Human Health & Safety	Ground Water
Effect(s): VOCs include a large number of organic chemical compounds. They are emitted from certain solids and liquids. The toxicity of VOCs in humans includes both acute and chronic adverse effects. Examples include: paints, lacquers, strippers, adhesives, photographic materials, building materials, office equipment, household furnishings and some pesticides. Adverse effects in humans include: eye and respiratory tract irritation, central nervous system disorders and cancers. Some VOCs are known to cause cancer in animals.		
Survey Results: Specific survey and sampling of VOCs in the ship was not conducted. Many of the primers, paints, varnishes and lacquers used in the ship contain VOCs. In particular review of the SHMP and on-site survey results indicated the presence of the following VOCs in consumable containers: <ul style="list-style-type: none"> ➤ vinyl chloride ➤ mineral spirits ➤ gasoline ➤ petroleum spirits ➤ xylene ➤ epoxy, urethane, polyurethane, vinyl, acrylic and alkyd-based paints and primers 		
Mitigation Measures: The VOCs entrained in various paints tend to off gas. Over time, these chemicals are released to the environment and therefore should present a decreasing risk to humans of direct exposure over time. VOC laden materials, paints, thinners, primers, solvents, etc in portable containers present a greater risk and should be removed and returned to the CFSS for further disposition in accordance with applicable laws, rules and regulations.		
Significance: The significance of VOCs entrained in paint systems is considered negligible to moderate depending on the age of the paint system. Generally speaking, fresh coatings present a higher environmental / human health & safety risk than older, legacy coatings. VOCs in consumable containers (paints, primers, solvents, etc.) are not considered significant with appropriate and effective mitigation measures in place.		
Significance: VOCs	Operational Vessel	Vessel Disposal & Scrapping
Negligible or Not Likely	X	X
Significant or Likely		
Unknown		
Monitoring: Removal of VOCs from the ship should be conducted in accordance with the proposed mitigation measures. Removal, transport, disposal and disposal of VOCs must be conducted in accordance with applicable laws and regulations. The disposal contractor / shipyard should be made aware of the presence of any VOCs prior to the physical disposal phase.		

Does not contain controlled goods

4.6 DISCUSSION OF EFFECTS AND MITIGATION

4.6.1 GENERAL

None of the HAZMAT / SOC's assessed in the ship, with the exception of PCBs, are considered significant with respect to disposal of the vessel assuming proper mitigation measures are followed. The most effective mitigation involves removal of equipment containing HAZMAT / SOC's as soon as possible following de-commissioning and return to the CFSS or CFAD as appropriate. Other materials should be removed and disposed off in accordance with applicable laws and regulations at the beginning of the physical disposal phase. Mitigation of metals and VOCs entrained in paint systems will need to be carefully considered by the disposal contractor / shipyard during the physical disposal phase. It is assumed that most painted steel and aluminium structure will ultimately be scrapped for future smelting. Therefore, mitigation of these HAZMATs may only be required for the protection of VECs during deconstruction operations. Effective mitigation measures for PCBs cannot be fully determined without further sampling and analysis following PRESERVER's decommissioning when the target systems and compartments are accessible.

4.6.2 PCBs

Compartments and areas of the ship where sample results indicate the presence of high levels of PCB contamination require special consideration. Compartments where reported levels of PCBs exceed federal regulatory limits should be immediately quarantined to prevent or reduce the risk of environmental contamination and human exposure. A competent HAZMAT expert should be consulted to determine appropriate measures and procedures to remove, remediate and/or sequester PCBs in these areas. Further testing and analysis for PCB contamination of paint surfaces, insulation and cabling is warranted.

4.7 CUMULATIVE EFFECTS

4.7.1 GENERAL

It is assumed that the bulk of the ship's materials collectively will be recycled in smelting operations and that the majority of HAZMATs / SOC's in portable forms will be recycled or re-used by the applicable CFSS, CFAD inventory management processes. That said, some materials will require landfill or other forms of destruction that will add incrementally to the national waste storage burden as well as GHG output. These contributions are not likely to be significant in comparison to other medium to large-scale material disposals e.g. older municipal office buildings, etc. Some deconstruction activities will inevitably result in minor consequential releases of some HAZMATs to the environment e.g. during the physical disposal phase, the cutting of a steel structure coated with a lead-based primer will result in some atmospheric release of lead. However, consequential releases are very unlikely to exceed applicable national, provincial or municipal limits or standards as long as appropriate and effective mitigation measures are implemented.

4.7.2 PCBs

Due to the presence of high concentrations of PCBs in the ship, the ship is deemed at this time to have a significant overall impact on the important VECs, the cumulative effects of disposal of the entire class (two ships) as well as other obsolete Canadian warships pose a significant potential risk to important VECs.

Does not contain controlled goods

4.8 ACCIDENTS AND MALFUNCTIONS

Following decommissioning, the activities associated with preparation of the ship for disposal (de-fuelling, de-ammunitioning, etc.) involve a small but not insignificant risk of accident (e.g. spill, injury, fire, etc.) It is acknowledged that DND and the RCN have robust processes in place for these operations. DND and the RCN also have an excellent environmental, health and safety track record to date. The risk of an accident or malfunction during these operations will therefore substantially mitigated by DND's and the RCN's ownership and husbandry of this phase of the disposal.

The risk of accidents or malfunctions leading to fugitive release of HAZMATs, spills, injury or death during the physical disposal phase is considered to be largely dependent upon the competence and experience of the disposal contractor / shipyard. In order to mitigate this risk, DND should vet potential contractors/shipyards against the following broad criteria:

- Possession of current, valid licenses and permits relevant to the handling, removal, transport and storage of all known and suspected HAZMATs and SOC's under all applicable laws and regulations.
- A satisfactory track record with respect to any civil or criminal charges, fines, infraction notices, stop work orders, or observations made by any authority with jurisdiction.
- Satisfactory objective quality evidence of any remediation or clean up activity undertaken voluntarily or as directed by an authority with jurisdiction.
- A robust environmental management system that includes relevant internal and external audit programmes.
- Current and relevant experience with the disposal activities and requirements associated with warship disposal.

4.9 EFFECTS OF THE ENVIRONMENT ON THE PROJECT

Apart from natural disasters (hurricanes, earthquakes, etc.), the environment and climate are not likely to have a significant effect on the project.

4.10 FOLLOW-UP PROGRAM

In view of the comments made under significance, mitigation and monitoring with respect to arsenic, asbestos, metals in paints, and PCBs, follow-up sampling and analysis is recommended. The majority of this sampling is best accomplished following de-commissioning and after the ship has been de-stored, -fuelled and -ammunitioned. Equipment and spaces must also be made safe and accessible for survey purposes. In view of the requirement for sampling of the U/W hull, the ship should be docked for this purpose.

In addition to the HAZMATs / SOC's surveyed and assessed, three additional materials should be considered by DND for attention prior to or during the physical disposal phase and/or specific survey, sampling and analysis. These materials were not listed in the SHMP:

Does not contain controlled goods

- Raw sewage (Black water tanks, pumps and systems)
- Perfluorooctane sulfonate (PFOS).
- Industrial grime and organic accumulations in ventilation trunking.
- Toxic Mold and mildew in carpets and upholstery

4.11 CONCLUSIONS

With the exception of requirements for additional survey and sampling noted previously and specific concerns related to PCBs, the disposal of HMCS PRESERVER is not deemed a significant risk for adverse effects to the listed VECs if appropriate and effective mitigation measures (detailed throughout section 4.5) are implemented and maintained prior to and during the physical disposal phase.

4.12 RECOMMENDATIONS

Four recommendations are germane to this assessment:

1. Compartments where reported levels of PCBs exceed federal regulatory limits should be immediately quarantined to prevent or reduce the risk of environmental contamination and human exposure. A competent HAZMAT expert should be consulted to determine appropriate measures and procedures to remove, remediate and/or sequester PCBs in these areas. Further testing and analysis for PCB contamination of paint surfaces, insulation and cabling is warranted.
2. Further survey and sampling for arsenic, asbestos, metals, PCBs, tributyl and triphenyltin should be conducted following de-commissioning once all areas, compartments, equipment and systems can be safely accessed. In view of the requirement for sampling of the U/W hull a docking is recommended.
3. DND create or engage a competent contractor to create a suitable list of detailed criteria and / or assist with DNDs selection of the disposal facility / shipyard.
4. DND consider a supplemental assessment in PRESERVER of raw sewage, PFOS and industrial grime and dust accumulations in ventilation trunking and the presence of toxic molds or mildews in carpeting and upholstery. DND should also consider the addition of these materials in future disposal environmental assessments. This assessment should be conducted during and would be applicable to the remaining operational life of the ship.

Does not contain controlled goods

ANNEX A - RELATIONSHIP MATRIX: HAZMAT/SOC & VALUED ECOSYSTEM COMPONENTS

Final Disposal - HMCS PRESERVER	Valued Ecosystem Components																
	Legend: (Blank) No Appreciable Effect (E) Potential Effect (U) Unknown Effect																
	PHYSICAL						BIOLOGICAL				SOCIAL						
Arsenic - Inorganic (e.g. anti-fouling coatings) Asbestos (e.g. thermal insulation materials) Compressed gases (e.g. acetylene) General Petroleum, Oil and Lubricants (POL) Ionizing radiation sources (radioisotopes) Metals including: Be, Cd, Cu, Cr, Hg, Pb, etc. Organochlories (e.g. pesticides) Ozone Depleting Substances (e.g. HCFCs) Oxidizing and reducing agents Polycyclic Aromatic Hydrocarbons (PAHs) Polychlorinated Biphenyls (PCBs) Surfactants Pyrotechnics (e.g. marine flares) Volatile Organic Compounds (VOCs)	Atmosphere	Marine Surface Waters	Ground Water	Soils	Terrain	Noise	Terrestrial Biota	Terrestrial Habitats	Marine Biota	Marine Habitats	Heritage / Historical	Recreation / Aesthetic	Human Health & Safety	Economy	Services	Land Use	
		E	E	E			E	E	E	E			E				
													E				
	E												E				
		E	E	E			E	E	E	E		E	E			E	
	E	E	E	E			E	E	E	E		E	E			E	
		E	E	E			E	E	E	E							
	U	E	E	E			E	E	E	E			E				
	E			E			E	U	E	U				E			
			E	E				E	U	E	U			E			E
		U	U	E	E			E	E	E	E			E			E
		E	E	E				U	U	E	E			E			
			U	U				E	U	E	U			E			E
		E	U	E	U			U	U	U	U			E			

Does not contain controlled goods

ANNEX B - CERTIFICATES OF ANALYSIS, ALS ENVIRONMENTAL

Lab Work Order No.	Sample Type(s)	Report Date
L1515882	PCBs in Paint (PRE-PCB-PAINT-xxx)	22 Sep 2014
L1515894	PCBs in Paint (PRE-PCB-PAINT-xxx)	25 Sep 2014
L1522523	Asbestos in Systems (PRE-ASB-SYS-xxx)	02 Oct 2014
L1515905	PCBs in Paint (PRE-PCB-PAINT-xxx)	07 Oct 2014
L1515906	Metals in Paint (PRE-MET-xxx) PCBs in Paint (PRE-PCB-PAINT-xxx)	08 Oct 2014
L1516565	PCBs in Paint (PRE-PCB-PAINT-xxx) PCBs in Cabling (PRE-PCB-CBL-xxx)	16 Oct 2014
L1522532	Asbestos in Systems (PRE-ASB-SYS-xxx)	17 Oct 2014
L1522550	Asbestos in Systems (PRE-ASB-SYS-xxx)	31 Oct 2014
L1516580	PCBs in Paint (PRE-PCB-PAINT-xxx)	31 Oct 2014
L1522572	Asbestos (PRE-ASB-xxx) Lead in Paint (PRE-Pb-xxx)	03 Nov 2014
L1516616	PCBs in Insulation (PRE-PCB-Insu-xxx)	17 Nov 2014

Does not contain controlled goods

UNCLASSIFIED

Halifax Ottawa Victoria St. John's
www.fleetway.caRevision –
Page 39

FM-T5-5.1.4b Rev_18Aug2014

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
001
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

**Appendice 1 a Annexe "H" - Procès-verbaux
de la conférence du soumissionnaire**

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

**Conférence des soumissionnaires
Aliénation des anciens NCSN PRESERVER et NAFC QUEST
Invitation W8482-171396/A**

Une conférence des soumissionnaires pour l'aliénation des anciens NCSN PRESERVER et NAFC QUEST, invitation n° W8482-171396/A, s'est tenue à la BFC Halifax – Arsenal Halifax le 27 mars 2017 à 8 h 30, heure locale.

Les entreprises suivantes et leurs représentants étaient présents :

Nom de l'entreprise	Représentant
R. J. MacIsaac Construction Ltd.	Darren John Luke Webster
R. J. MacIsaac Construction Ltd.	Ronald Mark MacIsaac
Chantier Davie Canada Inc.	Andrzej Marasinski
Marine Recycling Corporation	Jordan Elliott
Marine Recycling Corporation	Mark DiBartolomeo
Marine Recycling Corporation	Richard Diplock
Capital Demolition & Environmental Services Inc.	Colton Roma
Canadian Maritime Engineering Ltd.	Raymond Gallant
Canadian Maritime Engineering Ltd.	Dean Mitchell
Canadian Maritime Engineering Ltd.	Johannes de Rozari
Sanexen Environmental Services Inc.	Mario Leathead
Heddle Marine Services Inc.	Mike Reid
Heddle Marine Services Inc.	Dennis Thorne

La conférence s'est déroulée selon l'ordre du jour.

1. Mot d'ouverture

L'autorité contractante (AC) pour l'aliénation des anciens NCSN PRESERVER et NAFC QUEST, Russ Passmore, souhaite la bienvenue à tous les participants à la conférence et chacun se présente. L'objet de la conférence est d'examiner tous les documents publiés à ce jour concernant l'aliénation des anciens NCSN PRESERVER et NAFC QUEST et de discuter des enjeux contractuels et techniques liés au projet. Le présent document résume les enjeux abordés et les discussions qui ont eu lieu durant la conférence des soumissionnaires.

2. Documentation transmise aux soumissionnaires

La documentation suivante est distribuée aux soumissionnaires :

- n° de la demande de propositions (DP) pour l'aliénation des anciens NCSN PRESERVER et NAFC QUEST, invitation W8482-171396/A, datée du 14 avril 2017, 114 pages;
- version papier de la présentation PowerPoint de la conférence des soumissionnaires et de la visite du site;
- annexe « A » Énoncé des travaux – Des documents de référence sont remis à un représentant de chaque entreprise sur une clé USB. Chaque représentant signe une déclaration confirmant qu'il a bien reçu la clé USB. Celle-ci ne contient pas d'information relative à des marchandises contrôlées. Les soumissionnaires sont informés que des versions papier des documents de référence relatifs à l'ANNEXE « A » Énoncé des travaux sont également à leur disposition tout au long de la semaine.

3. Rappel concernant le processus d'approvisionnement

L'AC explique aux participants le processus d'approvisionnement par DP et leur donne des renseignements supplémentaires à cet égard.

- Le présent processus d'approvisionnement est une DP concurrentielle telle qu'elle est publiée sur achatsetventes.gc.ca.
- À l'heure et à la date de clôture, la DP comprend l'ensemble des questions et réponses, des explications, le procès-verbal de la conférence des soumissionnaires et toutes les modifications apportées à la demande de soumissions au cours de la période de soumission.
- La période de la demande de soumissions est le seul moment où les soumissionnaires peuvent demander à l'AC de Travaux publics et Services gouvernementaux Canada (TPSGC) des explications ou des changements à la DP. Seule l'AC de TPSGC peut modifier la DP en apportant des modifications à la demande de soumissions.

4. Examen de la DP

L'AC examine la DP et met en évidence certains aspects de la demande de soumissions qui sont particulièrement importants pour ce projet. Une copie de la présentation PowerPoint est jointe au procès-verbal de la conférence des soumissionnaires.

Principaux points examinés :

- Document 2003 (2016-04-04) Instructions uniformisées – Biens ou services – Exigences concurrentielles relatives aux dispositions d'intégrité et aux exigences de la soumission;
- Modalités de la soumission;
- Préparation de la soumission;
- Examen détaillé de tous les critères d'évaluation;
- Méthode de sélection;
- Modalités du contrat subséquent;
- Sécurité;
- Attribution du contrat et communications;
- Communications tout au long du processus de soumission.

L'AC rappelle aux soumissionnaires l'importance de répondre de façon détaillée aux critères obligatoires. L'AC rappelle aux soumissionnaires que l'équipe d'évaluation n'est pas en mesure de faire des hypothèses ou des interprétations lors de l'évaluation des soumissions; seule l'information fournie dans les soumissions sera évaluée. Tous les critères doivent être remplis pour que la soumission soit conforme. Le but de la

conférence des soumissionnaires est de garantir que tous les soumissionnaires comprennent l'invitation et présentent une soumission conforme.

5. Processus de questions et réponses

L'AC examine le processus de questions et réponses. Toutes les questions soulevées durant la conférence des soumissionnaires et les visites du site seront consignées et intégrées à la demande de soumissions par l'intermédiaire d'une modification de la demande de soumissions. Conformément à la DP, les soumissionnaires peuvent uniquement poser des questions par l'entremise de l'AC. Toutes les questions et les réponses qui ne respectent pas ce processus ne sont pas officielles et ne figureront pas dans la demande de soumissions ni dans le contrat subséquent.

7. Énoncé des travaux

M. Michael Stege, responsable du projet d'aliénation des anciens NCSN PRESERVER et NAFC QUEST, invitation W8482-171396/A, présente une vision générale du projet et de son intention.

8. Évaluation environnementale

Le responsable du projet expose le but de l'évaluation environnementale en ce qui concerne les navires. Les évaluations environnementales effectuées pour le navire par Fleetway pour le compte du CANADA ont été examinées par M. Rob Quaia. On précise aux soumissionnaires que le pouvoir de dépenser pour les anciens NCSN PRESERVER et NAFC QUEST doit être utilisé uniquement comme un guide et ne constitue pas une liste exhaustive des types ou des quantités de matières dangereuses à bord. On considère les navires « tels quels et sur place ». Les soumissionnaires peuvent recueillir tous les échantillons supplémentaires qu'ils jugent nécessaires au cours de la visite du site, de sorte à préparer plus précisément leur soumission.

9. Liste principale d'équipement

Le chargé de projet expose le but de la liste principale d'équipement. La liste principale d'équipement de l'ancien NCSN PRESERVER est prête et conservée par Fleetway pour le compte du CANADA. M. Rick Sideroff de Fleetway présente et détaille la liste principale d'équipement de la base de données de l'ancien NCSN PRESERVER afin d'aider les soumissionnaires à bien comprendre le processus de démilitarisation des marchandises contrôlées.

10. Représentant de l'assurance de la qualité du ministère de la Défense nationale

Le chargé de projet présente le Capc Chris Young, gestionnaire de l'assurance qualité du RAQDN. Le Capc Young détaille le processus par lequel le RAQDN approuvera la démilitarisation des marchandises contrôlées dans les installations du soumissionnaire retenu.

11. Suite de l'examen de l'énoncé des travaux

Le chargé de projet reprend la présentation détaillée des besoins. Il rappelle aux soumissionnaires qu'ils doivent communiquer leur plan d'aliénation dans leur soumission et répondre à tous les critères d'évaluation obligatoires sans exception. Si un soumissionnaire ne comprend pas certains aspects d'un critère obligatoire dans le cadre de la présente soumission, il doit poser des questions le plus rapidement possible.

Solicitation No. - N° de l'invitation
W8482-171396
Client Ref. No. - N° de réf. du client
W8482-171396

Amd. No. - N° de la modif.
File No. - N° du dossier
W8482-171396

Buyer ID - Id de l'acheteur
010ism
CCC No./N° CCC - FMS No./N° VME

Le chargé de projet souligne qu'il existe peut-être encore des équipements à retirer des anciens NCSN PRESERVER et NAFC QUEST. Tout ce qui est dans les navires, à l'exception des éléments désignés pour être retirés, deviendra la propriété de l'entrepreneur, conformément aux modalités du contrat.

Le chargé de projet rappelle à nouveau aux soumissionnaires qu'ils doivent répondre en détail à chaque critère obligatoire de la soumission.

12. Examen du calendrier et conclusion

L'AC examine le calendrier de la semaine et fait remarquer que ce calendrier est flexible. Le CANADA fera tout son possible pour répondre positivement aux demandes de changement de calendrier, pour devancer ou repousser des échéances, à condition que tous les soumissionnaires soient d'accord.

On rappelle encore une fois aux soumissionnaires l'existence du processus de questions et réponses. On les informe que les procès-verbaux de la conférence des soumissionnaires et des visites du site seront distribués à tous les soumissionnaires.

Clôture de la conférence des soumissionnaires

L'AC déclare la clôture de la conférence des soumissionnaires à 11 h 45.



Conférence des soumissionnaires Élimination des Navires Ancien NCSM PRESERVER et NAFC QUEST (W8482-171396/A)

Du 27 au 31 mars 2017
Base des Forces canadiennes Halifax – Arsenal maritime d'Halifax
Halifax, Nouvelle-Écosse



Travaux publics et
Services gouvernementaux
Canada

Public Works and
Government Services
Canada

Canada

Préambule

Comme il est mentionné dans la demande de propositions, la conférence des soumissionnaires et la ou les visite(s) des lieux sont obligatoires. Les soumissionnaires qui n'assistent pas la conférence des soumissionnaires et à la ou aux visite(s) des lieux seront jugés non conformes.

Les discussions qui ont eu lieu aujourd'hui ne seront pas prises en considération dans la demande de propositions, et elles ne doivent pas non plus être interprétées comme des négociations.

Les représentants de Travaux publics et Services gouvernementaux Canada (TPSGC) répondront aux questions posées dans la journée au mieux de leurs capacités. Les réponses à toutes les questions seront présentées au moyen du processus officiel de demande de renseignements et seront intégrées officiellement dans une modification à la demande de soumissions que tous les soumissionnaires pourront consulter sur le site Achatsetventes.gc.ca.

Le compte rendu de la réunion sera transmis à tous les soumissionnaires potentiels ayant assisté à la conférence des soumissionnaires et à la ou aux visite(s) des lieux. Ce compte rendu sera transmis suffisamment à l'avance pour permettre aux soumissionnaires de préparer et de déposer leur soumission avant la date de clôture prévue.

Ordre du jour

- 1) Points administratifs
- 2) Membres de l'équipe
- 3) Examen du dossier d'appel d'offres
 - Demande de propositions
 - Énoncé des travaux
- 4) Exigences relatives à la visite des lieux
- 5) Questions

Points administratifs

- 1) Toilettes
- 2) Sorties de secours
- 3) Pauses-santé

Membres de l'équipe – Canada

Ministère de la Défense nationale

- Responsable du projet : Michael Stege
- Responsable des achats: Gisele Russell

Représentant de l'assurance de la qualité de la Défense nationale (RAQDN)

- Gestionnaire de l'assurance de la qualité: Chris Young

Travaux publics et Services gouvernementaux Canada

- Autorité contractante : Russ Passmore

Objectif du projet

- 1) Veiller à ce que le processus d'approvisionnement visé par cette exigence soit réalisé d'une manière équitable, ouverte et transparente.
- 2) Veiller à ce que le navire soit éliminé conformément aux exigences et aux normes réglementaires applicables indiquées dans l'énoncé des travaux.
- 3) Mettre hors service le navire de façon à offrir le meilleur rapport qualité-prix pour le CANADA.

Conférence des soumissionnaires – Pourquoi?

- 1) Examen des principales sections de la demande de propositions
 - Instructions pour la préparation des soumissions
 - Critères d'évaluation
 - Modalités importantes
 - Énoncé des travaux et documents techniques
- 2) Visites du navire (à quoi s'attendre)
- 3) Réponses aux questions

Visite des lieux – Pourquoi?

Offrir aux soumissionnaires potentiels l'occasion de :

- 1) Observer le navire et de constater la portée des travaux nécessaires;
- 2) Prendre note des questions du CANADA concernant les travaux;
- 3) Discuter, avec le CANADA, des points qui pourraient ne pas être précisément abordés dans l'énoncé des travaux.

Examen de la demande de propositions



PARTIE 1 - RENSEIGNEMENTS GÉNÉRAUX

Sommaire

Le ministère de la Défense nationale (MDN) doit aliéner, par démantèlement, l'ancien Navire canadien de Sa Majesté (NCSM) *PRESERVER*, pétrolier ravitailleur d'escadre (AOR) de la classe *Protecteur* et l'ancien navire auxiliaire des Forces canadiennes (NAFC) *QUEST*, navire auxiliaire de servitude (recherche océanographique) du Département de la Défense des États-Unis (MDN). L'entrepreneur devra préparer les navires destinés au transfert, transférer chacun d'eux aux sites approuvés, démilitariser les marchandises contrôlées, restituer tout matériel de musée puis démolir (démonter et aliéner ou recycler) les navires de manière efficace et respectueuse de l'environnement et conformément aux lois canadiennes et aux modalités du contrat.

REMARQUE : le démantèlement de navire est le processus consistant à détruire systématiquement toute l'infrastructure d'un navire désuet en le démontant et en aliénant ou recyclant toutes les pièces et matières dangereuses dont il est composé.

PARTIE 2 - INSTRUCTIONS À L'INTENTION DES SOUSSIONNAIRES

Instructions, clauses et conditions uniformisées

Document 2003 (2016-04-04), Instructions uniformisées – Biens ou services – Besoins concurrentiels

Le paragraphe 5.4 du document 2003, Instructions uniformisées – Biens ou services – Besoins concurrentiels, est modifié comme suit :

Supprimer : 60 jours

Insérer : 120 jours



Présentation des soumissions

Les soumissions doivent être présentées uniquement au Module de réception des soumissions de TPSGC au plus tard à la date, à l'heure et à l'endroit indiqués à la page 1 de la demande de soumissions.

Demandes de renseignements – en période de soumission

Toutes les demandes de renseignements doivent être présentées par écrit à l'autorité contractante au moins 10 jours civils avant la date de clôture des soumissions. Les demandes de renseignements reçues après ce délai pourraient demeurer sans réponse.

Période des travaux – NCSM PRESERVER

Les travaux sur l'ancien NCSM *PRESERVER* doivent se dérouler comme suit :

Début : date de l'attribution du contrat.

Fin : 18 MOIS après la date du retrait de l'installation du CANADA.
L'entrepreneur doit retirer l'ANCIEN *PRESERVER* de la jetée à l'ARSENAL de HALIFAX au plus tard 45 jours civils après l'attribution du contrat.

En présentant une soumission, le soumissionnaire confirme qu'il a suffisamment de matériel et de ressources humaines affectées ou disponibles et que la période de travail ci-dessus permettra de terminer les travaux prévus.

Période des travaux – NAFC QUEST

Les travaux sur l'ancien NAFC *QUEST* doivent se dérouler comme suit:

Début : L'ancien *QUEST* sera mis à la disposition de l'entrepreneur le :
1ER SEPTEMBRE 2017.

Fin : 18 mois après la date du retrait de l'installation du CANADA.

L'entrepreneur doit retirer l'ancien navire de la jetée à l'ARSENAL de HALIFAX au plus tard 45 jours civils après qu'il a été mis à sa disposition.

REMARQUE : le CANADA autorisera que soient exécutés à la BFC HALIFAX seulement les travaux requis pour préparer le navire en vue d'un certificat de remorquage, selon les exigences de l'évaluateur de l'assureur de l'entrepreneur.

PARTIE 3 – PRÉPARATION DES SOUSSIONS

Préparation des soumissions – Format suggéré

- 1) Traiter et présenter les sujets dans l'ordre des critères d'évaluation, sous les mêmes rubriques. Pour éviter les recoupements, les soumissionnaires peuvent faire référence aux différentes sections de leur soumission en précisant le paragraphe et le numéro de page où le sujet visé est déjà traité.
- 2) Lier les volumes de façon logique.

Critères d'évaluation obligatoires

- 1) Examen des critères d'évaluation obligatoires
- 2) Annexe J – Liste de vérification des produits livrables
 - À titre indicatif seulement.

PARTIE 4 – PROCÉDURES D'ÉVALUATION ET MÉTHODE DE SÉLECTION

Méthode de sélection

Pour être jugée recevable, une soumission doit satisfaire à toutes les exigences de la demande de soumissions et à tous les critères d'évaluation, y compris les critères d'évaluation techniques, de gestion et financiers.

La soumission recevable ayant le prix évalué le plus bas sera recommandée pour l'attribution d'un contrat.

PARTIE 5 – ATTESTATIONS ET AUTRES RENSEIGNEMENTS

Attestations exigées avec la soumission

Les soumissionnaires **DOIVENT** joindre à leur soumission les attestations suivantes dûment remplies.

5.1.1 Dispositions relatives à l'intégrité – Déclaration de condamnation à une infraction

Conformément à la *Politique d'inadmissibilité et de suspension* (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-fra.html>), le soumissionnaire doit joindre à sa soumission les documents exigés, selon le cas, afin que son offre ne soit pas rejetée du processus d'approvisionnement.

Se reporter à l'**Annexe K – Formulaire de déclaration**

Attestations préalables à l'attribution du contrat et renseignements supplémentaires

- 1) Dispositions relatives à l'intégrité – Documents exigés
- 2) Programme de contrats fédéraux pour l'équité en matière d'emploi – Attestation de soumission

PARTIE 6 – EXIGENCES RELATIVES À LA SÉCURITÉ, EXIGENCES FINANCIÈRES ET AUTRES EXIGENCES

Garantie d'exécution

Le soumissionnaire doit prouver dans sa proposition qu'il sera en mesure de donner la garantie financière contractuelle.

Lettre provenant d'une institution financière ou de caution



Exigences en matière d'assurances

Le soumissionnaire doit fournir une lettre d'un courtier ou d'une compagnie d'assurances autorisé à faire affaire au Canada stipulant que le soumissionnaire, s'il obtient un contrat à la suite de la demande de soumissions, peut être assuré conformément aux exigences en matière d'assurance décrites à l'**Annexe D, Exigences en matière d'assurances**.

Indemnisation des accidents du travail – lettre d’attestation

Une lettre ou un certificat délivré par la Commission des accidents du travail applicable attestant que son compte est en règle.

Convention collective valide

Lorsque le soumissionnaire est lié par une convention collective ou par un autre instrument adéquat à ses travailleurs syndiqués, la convention collective ou l'instrument doit être valide pour la durée de la période proposée de tout contrat subséquent. La preuve documentaire de la convention collective ou de l'instrument doit être fournie au plus tard à la date de clôture des soumissions.

PARTIE 7 - CLAUSES DU CONTRAT SUBSÉQUENT

Conditions générales

Incorporé par renvoi :

Le document 2030 (2016-04-04), Conditions générales – besoins plus complexes de biens, s'applique au contrat et en fait partie intégrante.



Conditions générales supplémentaires

Incorporée par renvoi :

La clause 1028, 2010-08-16, Construction de navires – prix ferme s’applique au contrat et en fait partie intégrante, **ainsi que les modifications qui s’y rapportent.**



Exigences en matière de sécurité

- 1) Pendant toute la durée du contrat, l'entrepreneur doit détenir une attestation de **vérification d'organisation désignée** valide.
- 2) L'entrepreneur doit être inscrit au Programme des marchandises contrôlées.
- 3) Les employés de l'entrepreneur devant avoir accès à des établissements de travail dont l'accès est réglementé doivent **TOUS détenir une COTE DE FIABILITÉ valide**.
- 4) Les contrats de sous-traitance qui comportent des exigences relatives à la sécurité **NE DOIVENT PAS être attribués sans l'autorisation écrite préalable** de la Direction de la sécurité industrielle canadienne ou de TPSGC.
- 5) L'entrepreneur doit se conformer aux dispositions des documents suivants :
 - a) Liste de vérification relative à la sécurité et guide de sécurité (le cas échéant), qui figure à l'Annexe C.
 - b) Manuel de la sécurité industrielle (dernière version).

Période des travaux – Maritime

Les travaux doivent débuter et être achevés comme suit pour l'ancien NCSM *IROQUOIS* :

Début : à la date d'attribution du contrat

Fin : 18 mois suivant l'attribution du contrat

L'entrepreneur doit retirer l'ancien NCSM *IROQUOIS* de la jetée d'HALIFAX au plus tard 45 jours civils après l'attribution du contrat.

Le CANADA autorisera que soient exécutés au poste d'accostage actuel du navire seulement les travaux requis pour préparer le navire en vue de l'obtention d'un certificat de remorquage, selon les exigences de l'évaluateur de l'assureur de l'entrepreneur.

Protection de l'environnement

L'entrepreneur doit exécuter les travaux en conformité avec les lois et règlements municipaux, provinciaux et fédéraux applicables en matière d'environnement, et les normes de l'industrie.

L'entrepreneur doit avoir des procédures et des processus détaillés pour répertorier, enlever, entreposer, transporter et éliminer tous les polluants et matières dangereuses éventuels et en faire le suivi.

Toutes les activités d'élimination des déchets doivent faire l'objet d'un suivi; des certificats doivent être fournis.

L'entrepreneur doit fournir des preuves de conformité aux lois et règlements municipaux, provinciaux et fédéraux en matière d'environnement à l'autorité contractante à la demande de cette dernière.

L'entrepreneur doit disposer de procédures ou de plans d'intervention en cas d'urgence environnementale.

Rebuts et déchets

Malgré toute autre disposition du contrat, les rebuts et déchets découlant du contrat, autres que les pièces recensées, appartiendront à l'entrepreneur comme faisant partie du prix contractuel.

Déchets dangereux

L'entrepreneur reconnaît que le Canada a fourni **suffisamment de renseignements** concernant l'emplacement et la quantité approximative de déchets dangereux tels que l'amiante, le plomb, les BPC, la silice ou d'autres produits dangereux ou substances toxiques.

Le prix comprend tous les coûts associés à l'enlèvement, à la manutention, à l'entreposage, à l'élimination de matières dangereuses comme l'amiante, le plomb, les BPC, la silice et les autres matières dangereuses ou substances toxiques se trouvant à bord du navire, ou au travail effectué à proximité de telles matières dangereuses. Le prix comprend aussi les coûts liés à l'obligation de se conformer aux lois et aux règlements qui s'appliquent à l'enlèvement, à la manutention, à l'élimination ou à l'entreposage de matières dangereuses ou de substances toxiques.

La date d'achèvement des travaux tient compte du fait que l'enlèvement, la manutention, l'entreposage, l'élimination de matières dangereuses comme l'amiante, le plomb, les BPC, la silice et les autres matières dangereuses ou substances toxiques, ou le travail effectué à proximité de telles matières dangereuses pourraient être visés par la nécessité de se conformer aux lois ou aux règlements applicables et que cela ne constituera pas un retard excusable.

Élimination de déchets dangereux

L'entrepreneur doit éliminer tous les déchets dangereux enlevés ou découverts sur les lieux durant l'exécution des travaux conformément à toutes les lois applicables.

Représentant de l'assurance de la qualité (RAQ)

Le RAQ du MDN agira à titre de représentant du CANADA sur place pendant le déroulement des travaux.

Le RAQ du MDN signera à titre de témoin de la démilitarisation de marchandises contrôlées.

Assurance de la qualité (AQ) – Inspection et acceptation

L'entrepreneur est entièrement responsable et atteste que les travaux ont été réalisés et achevés, de même que l'AQ lorsque les documents sont présentés aux fins d'approbation.

L'approbation finale par le Canada signifie que celui-ci reconnaît que l'entrepreneur a garanti que les travaux ont été effectués conformément au devis ou aux exigences et en conformité avec les modalités du contrat, et que le Canada accepte de payer l'entrepreneur pour les travaux réalisés.

Travaux rejetés

Chaque fois que des travaux sont rejetés pour un motif donné, aucun paiement ne doit être versé concernant ces travaux. Toutes les rectifications exigées par le responsable technique ou le RAQ doivent être apportées par l'entrepreneur, et ce, sans frais pour le Canada.

L'acceptation des travaux par le responsable du projet ou le RAQ ne dégage pas l'entrepreneur de ses responsabilités en matière d'AQ liées à l'ensemble des travaux visés par le contrat.

Assurance

Conformément à l'Annexe D.

Il incombe aux entrepreneurs de déterminer si une assurance supplémentaire est nécessaire.

Contrat – Communications

Le soumissionnaire retenu est invité à coordonner les annonces avec le Canada.

Comptes rendus

Les soumissionnaires peuvent demander un compte rendu des résultats du processus de demande de soumissions. Ils doivent en faire la demande à l'autorité contractante dans les quinze (15) jours ouvrables qui suivent la réception des résultats du processus de demande de soumissions.

Questions



Examen de l'énoncé des travaux



Énoncé des travaux



Évaluation environnementale

Liste maîtresse d'équipement

Visites des lieux – Généralités

Seules les réponses qui ont été données dans le cadre du processus officiel doivent être considérées comme des réponses officielles. Toutes les réponses qui ont été données à un autre moment ne sont considérées d'aucune façon comme officielles ou exécutoires.

Les questions posées lors des visites seront traitées comme des demandes de renseignements; les réponses seront données au moyen d'une modification de la demande de propositions.

Il sera possible de se réunir de nouveau à la fin de la journée; les soumissionnaires pourront alors poser des questions au CANADA concernant la visite des lieux effectuée.

Les visiteurs doivent fournir leur propre équipement de sécurité.

Questions

Toutes les demandes de renseignements doivent être présentées par écrit à l'autorité contractante au moins dix jours civils avant la date de clôture des soumissions. Les demandes de renseignements reçues après ce délai pourraient demeurer sans réponse.

Veillez présenter les demandes de renseignements de la façon suivante : rédigez une question par paragraphe et surlignez la question.

On répondra aux demandes de renseignements dans le cadre du processus officiel de modification de demande de soumissions.