



National Defence

Défense nationale

National Defence Headquarters
Ottawa, Ontario
K1A 0K2

Quartier général de la Défense nationale
Ottawa (Ontario)
K1A 0K2

REQUEST FOR PROPOSAL DEMANDE DE PROPOSITION

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
Québec
K1A 0S5

Proposal To: National Defence Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods and services listed herein and on any attached sheets at the price(s) set out therefore.

Proposition à : Défense nationale Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens et services énumérés ici et sur toute feuille ci-annexée, au(x) prix indiqué(s).

Title/Titre LABORATORY ANALYSIS OF FLUID SAMPLES FROM MARINE EQUIPMENT	Solicitation No – N° de l'invitation W8482-178564/A
Date of Solicitation – Date de l'invitation 16 Sept 2016	
Address Enquiries to – Adresser toutes questions à Leelynn Park Email : Leelynn.Park@forces.gc.ca	
Telephone No. – N° de téléphone 819-939-3811	FAX No – N° de fax
Destination DEPARTMENT OF NATIONAL DEFENCE ATTN DGMEPM - DMARP 101 COLONEL BY DR. OTTAWA, Ontario K1A0K2 Canada	

Instructions:

Municipal taxes are not applicable. Unless otherwise specified herein all prices quoted must include all applicable Canadian customs duties, GST/HST, excise taxes and are to be delivered Delivery Duty Paid including all delivery charges to destination(s) as indicated. The amount of the Goods and Services Tax/Harmonized Sales Tax is to be shown as a separate item.

Instructions: Les taxes municipales ne s'appliquent pas. Sauf indication contraire, les prix indiqués doivent comprendre les droits de douane canadiens, la TPS/TVH et la taxe d'accise. Les biens doivent être livrés « rendu droits acquittés », tous frais de livraison compris, à la ou aux destinations indiquées. Le montant de la taxe sur les produits et services/taxe de vente harmonisée doit être indiqué séparément.

Solicitation Closes – L'invitation prend fin

At – à :
14 :00 hrs, EDT

On - le :
27 Oct 2016

Delivery required - Livraison exigée See Herein	Delivery offered - Livraison proposée
Vendor Name and Address - Raison sociale et adresse du fournisseur	
Name and title of person authorized to sign on behalf of vendor (type or print) - Nom et titre de la personne autorisée à signer au nom du fournisseur (caractère d'imprimerie)	
Name/Nom _____	Title/Titre _____
Signature _____	Date _____

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PART 1 - GENERAL INFORMATION

1.1 Security Requirements

There are no security requirements associated with this contract

1.2 Statement of Requirement

The Department of National Defence (DND) has a requirement for production scale laboratory services on a per sample basis for the analysis of fluid samples taken from Canadian naval equipment. The analyses are required as part of the Canadian Armed Forces (CAF) Navy Oil and Coolant Condition Analysis Program (OCCAP). In addition to the costs for the analysis of samples, the Contractor must provide suitable packaging materials and ship these on an "as and when requested" basis. The contractor must analyze the samples according to the standard protocol defined by OCCAP. All laboratory facilities, personnel, instrumentation, and consumable supplies must be provided by the Contractor.

The samples that will be analyzed can be separated into four categories based on the type of fluid and the normal test regime for each. Additionally, for some types of sample there are additional 'special' tests, which may be requested by DND, or may be required if certain results are found in the routine tests. The number of samples is estimated to vary between 300 to 700 per month, or 3600 to 8400 per year. The samples are of the following types:

- a) Diesel Engine Lubricant Samples (approximately 20%)
- b) Non-Diesel Equipment Lubricant Samples (approximately 40%)
- c) Hydraulic Fluid Samples (approximately 14%)
- d) Diesel coolant Samples (approximately 26%)
- e) Special Tests

1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.4 Trade Agreements

"The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), the Canada-Chile Free Trade Agreement (CCFTA), the Agreement on Internal Trade (AIT), the Canada-Peru Free Trade Agreement (CPFTA), the Canada-Columbia Free Trade Agreement (CCoIFTA), and the Canada-Panama Free Trade Agreement (CPanFTA).

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2016-04-04), Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation, with the following modifications:

- a. Subsection 05, Submission of Bids – subsection 4 is amended as follows:
Delete: 60 days
Insert: 90 days
- b. Section 20, Further Information is deleted in its entirety.

2.1.1 SACC Manual Clauses

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC will not be accepted.

2.3 Former Public Servant

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the *Financial Administration Act*, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

-
- a. an individual;
 - b. an individual who has incorporated;
 - c. a partnership made of former public servants; or
 - d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the [Public Service Superannuation Act](#) (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the [Supplementary Retirement Benefits Act](#), R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the [Canadian Forces Superannuation Act](#), R.S., 1985, c. C-17, the [Defence Services Pension Continuation Act](#), 1970, c. D-3, the [Royal Canadian Mounted Police Pension Continuation Act](#), 1970, c. R-10, and the [Royal Canadian Mounted Police Superannuation Act](#), R.S., 1985, c. R-11, the [Members of Parliament Retiring Allowances Act](#), R.S. 1985, c. M-5, and that portion of pension payable to the [Canada Pension Plan Act](#), R.S., 1985, c. C-8.

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes** () **No** ()

If so, the Bidder must provide the following information, for all FPSs in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with [Contracting Policy Notice: 2012-2](#) and the [Guidelines on the Proactive Disclosure of Contracts](#).

Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes** () **No** ()

If so, the Bidder must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;

- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

2.4 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

2.5 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that Bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (three (3) hard copies) and one (1) soft copies on DVD or USB Key;

Section II: Financial Bid (two (2) hard copies) and one (1) soft copies on DVD or USB key; and

Section III: Certifications (one (1) hard copy)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that Bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, Bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the work.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Applicable Taxes must be shown separately.

3.1.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex "B" Electronic Payment Instruments, to identify which ones are accepted.

If Annex "B" Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.1.2 Exchange Rate Fluctuation

C3011T 2013-11-06, Exchange Rate Fluctuation

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

Except where expressly provided otherwise, the experience described in the bid must be the experience of the Bidder itself (which includes the experience of any companies that formed the Bidder by way of a merger but does not include any experience acquired through a purchase of assets or an assignment of contract). The experience of the bidder's affiliates (i.e. parent, subsidiary or sister corporations), subcontractors, joint venture or suppliers will not be considered.

4.1.1.1 Mandatory Technical Criteria

EVALUATION CRITERIA	
MANDATORY CRITERIA REQUIREMENTS	MET/NOT MET
MT1. The Bidder must participate in the Canadian Co-operative Used Lubricant Exchange [administered by Alberta Innovates Technology Futures], or equivalent laboratory exchange program during the period of the Contract.	

<p>MT2. The work must be supervised by persons with a minimum of one (1) year supervisory experience with a recognized degree or diploma in a field of chemistry from a recognized Canadian university or college, or the equivalent as established by a recognized Canadian academic credentials assessment service*, if obtained outside Canada.</p> <p>*The list of recognized organizations can be found under the Canadian Information Centre for International Credentials website, at the following internet link: http://www.cicic.ca/2/home.canada.</p> <p>The Bidder's proposed resources must meet the minimum Mandatory Education and Experience Requirements. Where the post-secondary degree, diploma, or certificate was successfully completed and obtained outside of Canada, Canada reserves the right to request a Canadian equivalency document issued by recognized academic credentials assessment organization showing the academic level obtained.</p> <p>It is incumbent upon the bidder proposing a resource with an "equivalent" degree or variable qualification to adequately demonstrate that the other field or qualification is equivalent to the one stipulated above. Bidders must submit a formal question to the Contracting Authority cited herein, at least fifteen (15) calendar days prior to the bid solicitation closing date, if the bidder intends to propose such a resource in order to obtain a ruling on the equivalency prior to bid closing.</p>	
<p>MT3. The Bidder must define the location(s) where the laboratory testing would normally be conducted. Any availability of testing facilities at foreign ports should be noted in the proposal. The Bidder must give a minimum 60-day prior written notice of any change of laboratory facilities.</p>	
<p>MT4. The Bidder must have back-up test instrumentation, or must have procedures in place to conduct analyses at an alternate site in case of instrumentation failure. The Bidder must include details of the back-up test capabilities.</p>	
<p>MT5. The Bidder must provide a list of the instruments (make, model and year of manufacture and purchase), which will be used to meet the analysis requirements. Information on the level of automation (e.g. Availability and size of auto samplers) proposed for each test must be included in the offer. During the course of the Contract, the Bidder must provide the Technical Authority in DND with calibration data for equipment used to analyze DND samples.</p>	
<p>MT6. The Bidder must have a minimum of two (2) years experience in used oil analysis.</p>	
<p>MT7. The Bidder must provide proof of their ISO 9001 Certification</p>	
<p>MT8. The Bidder must provide proof of any certifications requested in the point rated requirements.</p>	

4.1.1.2 Point Rated Technical Criteria

Proposals will be evaluated and scored in accordance with specific evaluation criteria as detailed in this section. The rating is performed on a scale of **260 points**.

POINT RATED REQUIREMENTS – TECHNICAL APPROACH			SCORE	
Point Rated Technical Criteria	Assessment criteria	Points Available	MAX	ACHIEVED
RT1 Previous experience in fluid analysis	Minimum of two (2) years experience in fluid analysis. Proof required.	Five (5) points per year for each year above two (2) years to a maximum of five (5) additional years of experience. Maximum of 25 points.	25	
RT2 Past participation in used oil correlation program.	Minimum of two (2) years experience in used oil correlation program. Proof required.	Five (5) points per year for each year above two (2) years to a maximum of four (4) additional years of participation to a correlation program within the last ten (10) years, plus up to twenty (20) points depending on level of performance. Performance will be determined based on comparison of bidder's six (6) most recent results against exchange averages. Maximum of forty (40) points	40	
RT3 Other quality programs	ISO 17025 Certification Proof required.	Ten (10) points for each ISO 17025 certified test. Maximum of forty (40) points. Certified tests must be relevant to this requirement.	40	
RT4 Shipping	Detailed shipping plan.	Maximum of twenty (20) points.	20	
RT5 Packaging	Detailed sample packaging plan	Maximum of twenty (20) Points	20	
RT6 Qualification of supervisory personnel.	Minimum of two (2) years of specific training and experience in the analysis of used machinery-fluids. Proof required.	Two (2) points for each additional year of specific training and for each year of experience above two (2) years, in the analysis of used machinery fluids. Maximum of twenty (20) points	20	
RT7 Data Retrieval Procedures	Clear and secure data retrieval procedures	Maximum of ten (10) Points	10	

RT8 Instrumentation.	Appropriate instrumentation for inductively coupled plasma (ICP) tests	Five (5) points for instrument less than five years old; five (5) points for auto sampler. Maximum of ten (10) Points	10	
RT9 Instrumentation.	Appropriate instrumentation for Gas Chromatography (GC) tests for percentage fuel dilution.	Five (5) points for instrument less than five years old; fifteen (15) points for auto sampler. Maximum of twenty (20) Points	20	
RT10 Instrumentation.	Appropriate instrumentation for Kinematic viscosity tests.	Five (5) points for equipment less than five years old; plus five (5) points for automated kinematic viscosity equipment. Maximum of ten (10) Points	10	
RT11 Instrumentation.	Appropriate instrumentation for Particle Counter tests.	Five (5) points for equipment less than five years old. Maximum of five (5) Points	5	
RT12 Reliability	Reliable back up to guard against delays due to instrument failure. Duplicate instrumentation or back-up laboratory	Description of back up instruments and their locations to be provided. Points awarded based on backup instrument meeting the analytical requirements for ICP, GC, viscosity, particle count, age and degree of automation. Maximum of twenty (20) Points	20	
RT13 Multiple testing locations including cooperative agreements with international test facilities	Access to international test facilities to support HMC Ships when deployed.	Five (5) points per test facility location. Maximum of twenty (20) Points	20	
		MAXIMUM POINT AVAILABLE	260	

4.1.2 Financial Evaluation

SACC Manual Clause [A0222T](#) (2014-06-26), Evaluation of Price Canadian/Foreign Bidders

1. The price of the bid will be evaluated as follows:
 - a. Canadian-based bidders must submit firm prices, Canadian customs duties and excise taxes included, and Applicable Taxes excluded.
 - b. foreign-based bidders must submit firm prices, Canadian customs duties, excise taxes and Applicable Taxes excluded. Canadian customs duties and excise taxes payable by Canada will be added, for evaluation purposes only, to the prices submitted by foreign-based bidders.

2. Unless the bid solicitation specifically requires bids to be submitted in Canadian currency, bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.
3. Although Canada reserves the right to award the Contract either on an FOB plant or FOB destination, Canada requests that bidders provide prices FOB their plant or shipping point and FOB destination. Bids will be assessed on an FOB destination basis.
4. For the purpose of the bid solicitation, bidders with an address in Canada are considered Canadian-based bidders and bidders with an address outside of Canada are considered foreign-based bidders.

4.1.2.1 Total Price for Evaluation

Based on estimated maximum number of samples, for evaluation purposes only.

Required Test	Estimated Quantity of tests	Cost per test Initial Contract Period	Option Period 1	Option Period 2
		1 Dec 2016 to 30 Nov 2017	1 Dec 2017 to 30 Nov 2019	1 Dec 2019 to 30 Nov 2021
Mandatory Diesel engine lubricant	880			
Mandatory non-diesel lubricants	2075			
Mandatory hydraulic fluid	700			
Mandatory nitrite inhibitor	540			
Mandatory organic acid inhibitor	325			
Mandatory glycol	375			
Water (Karl Fischer)	1200			
Total Base Number	530			
Viscosity at 40 or 100 degrees C.	130			
Elemental analyses for hydraulic fluid	540			
Flash point	10			
Per cent sediment	450			
Pentane insoluble	450			
Total Acid Number	170			
FTIF infrared test tickets	5			
Total tests, estimated at	8400			
Sample bottles cost per bottle	5000			
Management fees, if applicable				
Estimated Shipping cost , for evaluation purposes based on: 50 shipments from each coast containing 24 samples each				
Total Cost				

4.2 Basis of Selection

4.2.1 SACC Manual Clause A0027T (2015-07-16). Basis of Selection - Highest Combined Rating of Technical Merit and Price

1. To be declared responsive, a bid must:
 - a. comply with all the requirements of the bid solicitation; and
 - b. meet all mandatory criteria; and

- c. obtain the required minimum of 150 points overall for the technical evaluation criteria which are subject to point rating.
The rating is performed on a scale of 260 points.
2. Bids not meeting (a) or (b) or (c) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 60% for the technical merit and 40% for the price.
4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 60%.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 40%.
6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 60/40 ratio of technical merit and price, respectively. The total available points equals 260 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating of Technical Merit (60%) and Price (40%)				
Bidder		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		221/260	171/260	177/260
Bid Evaluated Price		\$55,000.00	\$50,000.00	\$45,000.00
Calculations	Technical Merit Score	$221/260 \times 60 = 51$	$171/260 \times 60 = 39.46$	$177/260 \times 60 = 40.85$
	Pricing Score	$45/55 \times 40 = 32.73$	$50/55 \times 40 = 36$	$45/45 \times 40 = 40$
Combined Rating		83.73	75.46	80.85
Overall Rating		1 st	3 rd	2 nd

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the *Ineligibility and Suspension Policy* (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide with its bid the required documentation, as applicable, to be given further consideration in the procurement process.

5.1.2 Additional Certifications Required with the Bid

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the *Ineligibility and Suspension Policy* (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the *Employment and Social Development Canada (ESDC) - Labour's* website (http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

5.2.3 Additional Certifications Precedent to Contract Award

5.2.3.1 Education and Experience

SACC Manual clause A3010T (2010-08-16) Education and Experience

PART 6 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

6.1 Security Requirements

6.1.1 There is no security requirement applicable to the Contract.

6.2 Statement of Requirement

The Contractor must provide the items detailed under the "Requirement" at Annex "A"

6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

2010C (2016-04-04), General Conditions - Services (Medium Complexity) apply to and form part of the Contract, with the following modifications:

a. Definition of Minister is modified as follows:

"Canada", "Crown", "Her Majesty" or "the Government" means Her Majesty the Queen in right of Canada as represented by the Minister of National Defence and any other person duly authorized to act on behalf of that minister or, if applicable, an appropriate minister to whom the Minister of National Defence has delegated his or her powers, duties or functions and any other person duly authorized to act on behalf of that minister.

6.4 Term of Contract

6.4.1 Period of the Contract

The period of the Contract is from 1 December 2016 to 30 November 2017 inclusive.

6.4.2 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to two (2) additional two (2) year periods under the same conditions. The Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise this option at any time by sending a written notice to the Contractor at least 30 calendar days before the expiry date of the Contract. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

6.4.3 Delivery Points

Delivery of the requirement will be made to delivery point(s) specified at Annex "A" of the Contract.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Leelynn Park
Title: D Mar P 3-3-9
Department of National Defence
Directorate Maritime Procurement 3-3-9
101 Colonel By Drive, Ottawa, On K1A 0K2

Telephone: 819-939-3811
E-mail address: leelynn.park@forces.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

6.5.2 Technical Authority

The Technical Authority for the Contract is:

The name and contact information is to be provided in the resulting contract.

Name: _____
Title: _____
Department of National Defence
101 Colonel By Drive, Ottawa, On K1A 0K2

Telephone: ____ ____ _____
Facsimile: ____ ____ _____
E-mail address: _____

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.3 Contractor's Representative

The name and contact information is to be provided in the resulting contract.

6.6 Proactive Disclosure of Contracts with Former Public Servants

By providing information on its status, with respect to being a former public servant in receipt of a [Public Service Superannuation Act](#) (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive

disclosure reports, in accordance with [Contracting Policy Notice: 2012-2](#) of the Treasury Board Secretariat of Canada.

6.7 Payment

6.7.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm unit prices in accordance with the pricing schedule below. Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

[Pricing schedule to be provided in the resulting contract.](#)

6.7.2 Limitation of Expenditure

1. Canada's total liability to the Contractor under the Contract must not exceed \$ _____ ([the Contracting Authority will provide the amount at contract award](#)). Customs duties are included and Applicable Taxes are extra.
2. No increase in the total liability of Canada or in the price of the Work resulting from any design changes, modifications or interpretations of the Work, will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been approved, in writing, by the Contracting Authority before their incorporation into the Work. The Contractor must not perform any work or provide any service that would result in Canada's total liability being exceeded before obtaining the written approval of the Contracting Authority. The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:
 - a. when it is 75 percent committed, or
 - b. four (4) months before the contract expiry date, or
 - c. as soon as the Contractor considers that the contract funds provided are inadequate for the completion of the Work, whichever comes first.
3. If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.

6.7.3 Monthly Payment

Canada will pay the Contractor on a monthly basis for work performed during the month covered by the invoice in accordance with the payment provisions of the Contract if:

- a. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all such documents have been verified by Canada;

- c. the Work performed has been accepted by Canada.

6.7.4 SACC Manual Clauses

C0100C (2010-01-11) Discretionary Audit – Commercial Goods and /or Services

6.7.5 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):
To be updated at contract award.

- a. Direct Deposit (Domestic and International);
- b. Electronic Data Interchange (EDI);
- c. Wire Transfer (International Only);

6.8 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

Each invoice must be supported by:

- a. a copy of the release document and any other documents as specified in the Contract;
 - b. copy of the invoices, receipts, vouchers for all direct expenses; and
 - c. a copy of the monthly summary report.
2. Invoices must be distributed as follows:
 - a. The original must be forwarded to the address shown on page 1 of the Contract for certification and payment.

6.9 Certifications and Additional Information

6.9.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

6.10 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____. (*Insert the name of the province or territory as specified by the Bidder in its bid, if applicable*)

6.11 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the general conditions 2010C (2016-04-04), General Conditions - Services (Medium Complexity);
- (c) Annex A, Statement of Requirement;
- (d) the Contractor's bid dated _____ (*insert date of bid*) (*If the bid was clarified or amended, insert at the time of contract award: “, as clarified on _____” or “, as amended on _____” and insert date(s) of clarification(s) or amendment(s)*)

6.12 Defence Contract

The Contract is a defence contract within the meaning of the [Defence Production Act](#), R.S.C. 1985, c. D-1, and must be governed accordingly.

Title to the Work or to any materials, parts, work-in-process or finished work must belong to Canada free and clear of all claims, liens, attachments, charges or encumbrances. Canada is entitled, at any time, to remove, sell or dispose of the Work or any part of the Work in accordance with section 20 of the [Defence Production Act](#).

6.13 Transportation Costs

The Contractor must ship the goods prepaid via approved commercial carriers including all delivery charges to Halifax, Nova Scotia or Esquimalt, British Columbia. Prepaid transportation costs must be shown as a separate item on the invoice, supported by a certified copy of the prepaid transportation bill of lading.

6.14 Shipping Instructions - Delivery Schedules Unknown

The Contractor must ship the goods prepaid DDP - Delivered Duty Paid (Halifax, Nova Scotia or Esquimalt British Columbia). Unless otherwise directed, delivery must be made by the most economical means. Shipping charges must be shown as a separate item on the Contractor's invoice. The Contractor is responsible for all delivery charges, administration, costs and risks of transport and customs clearance, including the payment of customs duties and Applicable Taxes.

6.15 Insurance

SACC Manual clause G1005C (2008-05-12), Insurance – No Specific Requirement

ANNEX "A"

STATEMENT OF REQUIREMENT

**LABORATORY ANALYSIS OF FLUID SAMPLES
FROM MARINE EQUIPMENT**

1. INTRODUCTION

1.1 The Department of National Defence (DND) has a requirement for production scale laboratory services on a per sample basis for the analysis of fluid samples taken from Canadian naval equipment. The analyses are required as part of the Canadian Armed Forces (CAF) Navy Oil and Coolant Condition Analysis Program (OCCAP).

2. ESTIMATED NUMBER OF SAMPLES TO BE ANALYZED

2.1 The samples that will be analyzed can be separated into four categories based on the type of fluid and the normal test regime for each. Additionally, for some types of sample there are additional 'special' tests, which may be requested by DND, or may be required if certain results are found in the routine tests. The number of samples is estimated to vary between 300 to 700 per month, averaging 3600 to 8400 per year. The samples are of the following types:

- a) Diesel Engine Lubricant Samples (approximately 20%)
- b) Non-Diesel Equipment Lubricant Samples (approximately 40%)
- c) Hydraulic Fluid Samples (approximately 14%)
- d) Diesel coolant Samples (approximately 26%)
- e) Special Tests

The number of samples and the percentages are given for guidance only.

2.2 Diesel engine lubricating oil samples are petroleum-based (i.e. mineral oils). Hydraulic fluids and non-diesel equipment lubricant samples are primarily petroleum-based but include some synthetic oil samples. 100 mL samples are supplied in 125 mL plastic bottles. (Nalgene Catalogue No. 2105-0004).

2.3 These estimates are based on past experience with the OCCAP, but the number of samples and the type distribution are not guaranteed. The number of samples per shipment varies widely, and the total number of samples submitted may not be evenly distributed over any given time period.

3. CONTRACTOR'S RESPONSIBILITIES

3.1 Analysis

3.1.1 The Contractor must analyze the samples according to the standard protocol defined by the Oil and Coolant Condition Analysis Program (OCCAP) as detailed in Appendix I. The Contractor must provide all laboratory facilities, personnel, instrumentation, and consumable supplies.

3.1.2 When specifically requested by DND, or after DND approval of a Contractor's request (based on test results or visual observations), the Contractor must conduct supplementary "special tests" on clearly designated samples within the bounds of the protocol described in Appendix I. Each "special test" required must be individually requested for each relevant sample; the full test of "special tests" will not normally be required for a given sample. Analytical tests not listed in Appendix I do not form part of the Contract.

3.1.3 The Contractor must enter the DND-designated sample numbers and associated test results into a Contractor-supplied computer using Contractor-supplied software. The sample data must be provided to DND as a comma delimited ASCII file in the format shown in Appendix II and illustrated in Appendix III.

3.1.4 Sample labels contain only an identification number, oil and machine type indicators, and a list of tests to be performed. The Contractor's responsibilities must not include the interpretation of the test results to assess machine or fluid condition.

3.2 Packaging and Shipping

3.2.1 The Contractor must provide suitable new and unused packaging and shipping materials to the Department of National Defence (DND) designated project coordinators at the Fleet Maintenance Facilities (FMFs) at Esquimalt, British Columbia and Halifax, Nova Scotia. The FMF project coordinators will regularly contact the Contractor by telephone directly to request sufficient packaging materials, and the Contractor must be responsible for shipping the materials requested to the appropriate FMF. The DND Technical Authority (TA) will provide contact information for the designated FMF Project Coordinators at commencement of the contract. The cost of the packaging materials and their shipment must be separately identified and billed to DND in addition to the cost for analysis of samples. The packaging materials must allow the shipment of individual samples, as well as sets of up to twelve samples, and must meet the requirements of all applicable transportation regulations. With the packaging materials, the Contractor must supply pre-printed courier slips which must include the Contractor's account number and shipping address.

3.2.2 The Contractor's representatives must pick up the samples to be analyzed directly from the FMFs at the HMC dockyards in Halifax, N.S. and Esquimalt, B.C. The Contractor may designate a shipping agent as the local representative responsible for sample pick-up from the dockyard and transport of samples; however responsibility for compliance with terms of the Contract must remain with the Contractor. Samples will be available for pick-up from the dockyard gate, or from FMF Offices within the dockyard, depending on local security requirements. The local OCCAP Coordinator will arrange suitable local procedures in consultation with the Contractor and its local shipping agent.

3.2.3 The Contractor must arrange for shipment of the samples to the contract laboratory and must be responsible for shipping costs. The cost of sample shipment must be billed by the Contractor to DND on a cost recovery basis. Shipping costs must be identified separately and be billed in addition to sample analysis costs. When requested by DND, the Contractor must provide copies of shipping company invoices.

3.3 Data Reporting

3.3.1 The Contractor must provide assurances that samples submitted as routine will be analyzed and reported to the DND coast authority within 48 hours of sample pick-up from the dockyard (Halifax or Esquimalt) by the Contractor's representative; and that results for samples tagged as "Urgent" will be reported within 36 hours of sample pick-up. The number of urgent samples is not expected to exceed 2% of the total number of samples submitted.

3.3.2 The same day that the test results are available, the Contractor must email the data to the appropriate FMF project coordinator (and other individuals as specified by DND). All available data relevant to a specific FMF should be provided in a single file (i.e. separate files are required for each FMF).

3.3.3 If the percent fuel dilution is greater than five percent for any diesel oil sample, the Contractor must notify the appropriate FMF project coordinator by telephone as soon as the test result is measured.

3.4 Other Responsibilities

3.4.1 Specific details of data retrieval will be established with the Contractor.

3.4.2 The Contractor must not release information pertaining to DND samples to any third party.

3.4.3 The Contractor must retain the unused portion of all samples for a minimum period of thirty days after analysis results are issued to DND. DND may request the contractor to repeat specific tests for a given sample to confirm anomalous results. After that period, the Contractor must be responsible for disposal of the remaining samples, and the used

packaging materials and sample containers in accordance with all applicable environmental requirements.

3.4.4 Unless otherwise instructed by DND, the Contractor must use the published versions of all standard test methods current at the time of sample analysis.

4. CHANGES TO THE ANALYTICAL PROCEDURES OR INSTRUMENTATION

4.1 Changes to the sample handling or test procedures, or instrumentation used, may be made only after mutual agreement between DND and the Contractor.

5. VERIFICATION OF CONTRACTOR ANALYSIS RESULTS

5.1 DND will verify the Contractor's laboratory performance by regular submission of duplicate samples to a DND laboratory for comparison of results. The check samples will not be distinguished from the routine samples at the time of submission to the Contractor.

5.2 In the event of a discrepancy between the check samples from the Contractor and DND, the TA will contact the Contractor. Corrective actions or mitigations will be discussed and mutually agreed upon between the Contractor and DND TA.

APPENDIX I TO ANNEX A

ANALYSIS REQUIREMENTS FOR OCCAP SAMPLE

A. MANDATORY TESTS FOR ALL DIESEL LUBRICANT SAMPLES

1. Kinematic Viscosity @ 100°C determined according to ASTM D445. Results must be reported to 0.1 cSt.

2. Percent Fuel Dilution determined according to a DND method that is based on ASTM D3524. Results must be reported to 0.1% fuel dilution. Note: Twenty-four hour operation using an auto-sampler is often required to meet the analysis turn-around requirement.

Gas Chromatography (GC) procedure at Appendix IV to Annex A. DND must provide the Contractor with suitable calibration materials (new unused oil and fuel) for method calibration once per year. The Contractor must provide the designated DND representative with their updated calibration data within one month after new calibration materials are provided.

3. ppm (mg/L) Ag, Al, B, Ba, Ca, Cr, Cu, Fe, K, Mg, Mo, Na, Ni, P, Pb, Si, Sn, Ti, Zn (reported to 1 ppm) by inductively coupled plasma emission (ICP) according to ASTM D5185. Concentrations are generally between 1 and 1000 ppm, with the majority well below 100 ppm.

4. Visual screening for water contamination. Water contamination may also become apparent during viscosity measurements. When water contamination is observed, it must be measured as outlined below under "Special Tests".

B. SPECIAL TESTS FOR DIESEL LUBRICANTS WHEN APPROVED BY DND

5. Percent Water determined using ASTM D4928 or ASTM D6304. The high shear mixer specified in D4928 is not required for OCCAP samples. Results must be reported to 0.1%.

6. Cleveland Open Cup Flash Point determined according to ASTM D92. Results must be reported to 1°C. Flash points are normally between 160° and 250°C.

7. Base Number determined according to ASTM D2896. Results must be reported to 0.1 BN.

8. Pentane Insolubles determined according to ASTM D893. Results must be reported to 0.01%.

C. MANDATORY TESTS FOR ALL NON-DIESEL (MACHINE) LUBRICANT SAMPLES

9. ppm (mg/L) Ag, Al, B, Ba, Ca, Cr, Cu, Fe, K, Mg, Mo, Na, Ni, P, Pb, Si, Sn, Ti, Zn (reported to 1 ppm) by inductively coupled plasma emission (ICP) according to ASTM D5185. Concentrations are generally between 1 and 1000 ppm, with the majority well below 100 ppm.

10. Visual screening for water contamination. Because the machine oil samples are generally light in colour, significant water contamination is usually identifiable by visual examination. When water contamination is observed, it must be measured as outlined below under "Special Tests".

D. SPECIAL TESTS FOR NON-DIESEL (MACHINE) LUBRICANT SAMPLES WHEN APPROVED BY DND

11. Percent Water determined using ASTM D4928 or ASTM D6304. The high shear mixer specified in ASTM D4928 is not required for OCCAP samples. Results must be reported to 0.1%.

12. Kinematic Viscosity @ 40°C determined according to ASTM D445. Results must be reported to 0.1 cSt.

13. Kinematic Viscosity @ 100°C determined according to ASTM D445. Results must be reported to 0.1 cSt.

Samples must not have their viscosity measured at both 40°C and 100°C

14. Acid Number determined according to ASTM D664. Results must be reported to 0.1 AN.

E. MANDATORY TESTS ON HYDRAULIC FLUID SAMPLES

15. ISO Particulate Contamination class using Automatic Optical Counting technology according to ISO 11171 (calibration) and ISO 4406 (reporting).

F. SPECIAL TESTS ON HYDRAULIC FLUID SAMPLES AS APPROVED BY DND

16. Kinematic Viscosity @ 40°C determined according to ASTM D445. Results must be reported to 0.1 cSt.

17. Percent Water determined using ASTM D4928 or ASTM D6304. The high shear mixer specified in ASTM D4928 is not required for OCCAP samples. Results must be reported to 0.1%.

18. ppm (mg/L) Ag, Al, B, Ba, Ca, Cr, Cu, Fe, K, Mg, Mo, Na, Ni, P, Pb, Si, Sn, Ti, Zn (reported to 1 ppm) by inductively coupled plasma emission (ICP) according to ASTM D5185. Concentrations are generally between 1 and 1000 ppm, with the majority well below 100 ppm.

G. MANDATORY TESTS ON COOLANT SAMPLES

19. Visual inspection for evidence of excessive corrosion products (“rust”) or other sediment. When sediment is observed, it must be quantified as outlined below under “Special Tests”.

20. Coolant samples are identified on the sample label as being one of three types; nitrite inhibitor, organic acid inhibitor and glycol. The corrosion inhibitor concentration must be measured using one of the following procedures depending on the inhibitor type:

NITRITE INHIBITOR

mL of nitrite based corrosion inhibitor per litre coolant. Results must be reported to 1 mL inhibitor/L coolant. The Nalco test kit CO318 (Part No. 420-C0318.88) or equivalent can be used. Using the Nalco test kit, material costs are approximately \$2.00/sample and analysis time is approximately 3 minutes. DND must provide the Contractor with suitable calibration materials (new undiluted corrosion inhibitor) for method calibration once per year. The Contractor must provide the designated DND representative with their updated calibration data within one month after new calibration materials are provided.

ORGANIC ACID INHIBITOR

Percent (V/V) of carboxylic acid based corrosion inhibitor (eg. Texaco XLI). Results must be reported to 0.1% inhibitor/L coolant. A suitable refractometer (range 0-10% BRIX) can be used to perform the analysis. DND must provide the Contractor with suitable calibration materials (new undiluted corrosion inhibitor) for method calibration once per year. The Contractor must provide the designated DND representative with their updated calibration data within one month after new calibration materials are provided.

GLYCOL

Percent antifreeze (glycol) in coolant mixtures that contain antifreeze, measured by specific gravity. Results must be reported to 0.1%. DND must provide the Contractor with suitable calibration materials (new undiluted antifreeze) for

method calibration once per year. The Contractor must provide the designated DND representative with their updated calibration data within one month after new calibration materials are provided.

H. SPECIAL TESTS FOR DIESEL COOLANTS AS APPROVED BY DND

20. Percent (%) sediment by centrifuge, measured and reported according to a DND method based on ASTM D2709. See Appendix V to Annex A for the detailed DND procedure.

APPENDIX II TO ANNEX A

FILE FORMAT FOR OCCAP DATA

A CSV (comma separated value) file is required for the importing of data into the CAF OCCAP Database. The following table details the required headers, units and database fields needed for correct data importing. The Contractor may be requested to modify the file format to accommodate changes to DND's database software

System Code (column header)	Description	Units	Database Field
Sample Number	DND sample number	None	Numeric
Oil/Coolant/Both	Identifies oil type	None	Alphanumeric, (O, C or B) ¹
Iso1	First number of ISO cleanliness	None	Numeric
Iso2	Second number of ISO cleanliness	None	Numeric
Iso3	Third number of ISO cleanliness	None	Numeric
TBN	Base number	mg KOH/g	Numeric
Analysis Completed	Date sample analysis completed	date	date (dd-mmm-yy)
TAN	Acid Number	mg KOH/g	Numeric
Soot (FTIR)	Soot content	%	Numeric
Not required	-	-	-
Not required	-	-	-
Not required	-	-	-
Not required	-	-	-
Not required	-	-	-
Not required	-	-	-
Ag	Silver concentration	ppm	Numeric
Al	Aluminum concentration	ppm	Numeric
B	Boron concentration	ppm	Numeric
Ba	Barium concentration	ppm	Numeric
Ca	Calcium concentration	ppm	Numeric
Cr	Chromium concentration	ppm	Numeric
Cu	Copper concentration	ppm	Numeric
Fe	Iron concentration	ppm	Numeric
K	Potassium concentration	ppm	Numeric
Mg	Magnesium concentration	ppm	Numeric
Mo	Molybdenum concentration	ppm	Numeric
Na	Sodium concentration	ppm	Numeric
Ni	Nickel concentration	ppm	Numeric

P	Phosphorus concentration	ppm	Numeric
System Code (column header)	Description	Units	Database Field
Pb	Lead concentration	ppm	Numeric
Not Required	-	-	-
Si	Silicone concentration	ppm	Numeric
Sn	Tin concentration	ppm	Numeric
Ti	Titanium concentration	ppm	Numeric
Zn	Zinc concentration	ppm	Numeric
Vis40	Viscosity @ 40°C	cSt	Numeric
Vis100	Viscosity @ 100°C	cSt	Numeric
Fuel	Fuel dilution	%	Numeric
Flash Point	Flashpoint	°C	Numeric
% Water	Percent water	%	Numeric
Karl Fisher	ppm water	ppm	Numeric
Glycol(%)	Percent antifreeze	%	Numeric
Nalcool	Nalcool inhibitor	ml/L	Numeric
Not required	-	-	-
Maxigard	Maxigard inhibitor	ml/L	Numeric
Not required	-	-	-
Organic Acid	Percent Organic Acid	%	Numeric
Not Required	-	-	-
Pentane	Pentane Insolubles	%	Numeric
Water and Sediment	Coolant sediment	%	Numeric
Glycol	Percent Antifreeze (Glycol)	%	Numeric
Creation Date	Date the sample was received	date	date (dd-mmm-yy)

IMPORTANT NOTES

¹ B = Both oil and coolant taken; O =oil sample only; C = Coolant sample only

A. All fields must be separated by a comma with a final comma after the last field

B. Fields for tests not done or information not provided are to be left **UNFILLED/BLANK**, whereas a test result of zero (0) shall be reported as "0" in the data file.

APPENDIX III TO ANNEX A

SAMPLE OCCAP DATA FILE

Sample Number,Oil/Coolant/Both,Iso1,Iso2,Iso3,TBN,Analysis Completed,TAN,Soot (FTIR),Not required,Not required,Not required,Not required,Not required,Not required,Ag,Al,B,Ba,Ca,Cr,Cu,Fe,K,Mg,Mo,Na,Ni,P,Pb,Not Required,Si,Sn,Ti,Zn,Vis40,Vis100,Fuel,Flash Point,% Water,Karl Fisher,Glycol(%),Nalcool,Not required,Maxigard,Not required,Organic Acid,Not Required,Pentane,Water and Sediment,Glycol,Creation Date
317618195,O,,,,,26-APR-2016,,,,,,,0,3.3,3,0,1140,1,3,13,4,762,37,56,0,1010,1,,6,0,0,1168,,13.5,.56,,,,,,,02-MAY-2016,
317618165,O,,,,,16.8,26-APR-2016,,,,,,,0,4.1,0,0,5368,0,3,26,5,35,1,74,0,1340,1,,12,0,0,1488,,13.96,2.31,,,,,,,02-MAY-2016,
317618163,O,,,,,13.37,26-APR-2016,,,,,,,0,3.1,0,0,4936,1,3,10,1,20,1,8,0,1202,1,,7,0,0,1347,,13.26,.18,,,,,,,02-MAY-2016,
317618186,O,,,,,15.77,27-APR-2016,,,,,,,0,2.2,0,0,5499,0,1,4,1,18,0,8,0,1353,1,,10,0,0,1495,,14.34,.25,,.17,1680,,,,,,,1.9,,02-MAY-2016,
317618157,O,,,,,14.74,26-APR-2016,,,,,,,0,2.3,0,0,5722,0,4,15,2,18,1,13,0,1286,2,,7,0,0,1522,,14.64,2.68,,,,,,,3.3,,02-MAY-2016,
317618161,O,,,,,15.43,26-APR-2016,,,,,,,0,2.7,0,0,6131,1,2,9,0,19,0,10,0,1400,2,,7,0,0,1623,,14.2,2.07,,,,,,,1.5,,02-MAY-2016,
317618159,O,,,,,15.09,26-APR-2016,,,,,,,0,2.7,0,0,6272,1,2,16,0,19,0,10,0,1403,2,,8,0,0,1672,,14.74,3.38,,,,,,,2.4,,02-MAY-2016,
317618152,O,,,,,26-APR-2016,,,,,,,0,0,269,0,10,0,1,1,0,0,0,3,0,1017,0,,3,1,0,5,,,,,,,02-MAY-2016,
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317618173,O,,,,,26-APR-2016,,,,,,,0,0,2,0,0,0,0,0,5,0,0,2,0,936,0,,0,1,0,0,,,,,,,02-MAY-2016,
317618180,O,,,,,26-APR-2016,,,,,,,0,0,0,0,962,0,7,2,5,4,0,41,0,456,0,,5,0,0,517,,,,,,,02-MAY-2016,
317618192,O,,,,,26-APR-2016,,,,,,,0,0,180,0,26,0,0,2,0,0,0,4,0,1091,1,,1,0,0,18,,,,,,,02-MAY-2016,
317618181,O,,,,,26-APR-2016,,,,,,,0,0,2,0,956,0,7,2,0,3,1,22,0,477,0,,4,1,0,529,,,,,,,02-MAY-2016,
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APPENDIX IV TO ANNEX A

NAVAL ENGINEERING TEST ESTABLISHMENT (NETE) WORK INSTRUCTION

PROCEDURE FOR THE MEASUREMENT OF FUEL DILUTION IN USED LUBRICATING OIL BY GAS CHROMATOGRAPHY

1. SCOPE

- 1.1 This instruction applies to the measurement of the amount of fuel found within a used lubricating oil sample.

Safety Note

This work instruction does not fully cover all safety precautions. Employees carrying out these tests are required to read the appropriate Material Safety Data sheets (MSDS) for the chemical reagents used. Any questions regarding the safe use of this procedure should be addressed prior to proceeding. Laboratory coat, safety glasses and latex gloves are required.

2. SUMMARY

- 2.1 A test portion of the sample is diluted with a specific amount of n-decane and is injected into a gas chromatograph. The column temperature is raised at a reproducible rate, and the areas of all peaks from the n-decane peak to the retention time of octadecane are recorded. The ratio of the total area for the sample peaks to the area for the n-decane peak is related to a calibration curve to determine the mass percent diesel fuel in the lubricating oil.

3. REFERENCES

- 3.1 ASTM Standard Test Method D3524.

NOTE: This method provides details specific to the instrumentation and quality control practices at NETE that are in addition to the requirements of D3524. In case of conflict, the requirements of D3524 shall take precedence.

4. REQUIRED RESOURCES

- Perkin Elmer gas chromatograph Model Clarus 580, E0101A015
- GC Column: 6m, 0.53mm Inner Diameter, 0.15µm Film Thickness

- Carrier Gas - nitrogen ultra pure carrier grade
- FID Gas - hydrogen and air
- Decane
- Heptane
- Octadecane

5. PREPARATION

- 5.1 Set up the GC for operation as outlined below. **Be sure the Helium, Compressed Air, and Hydrogen tanks and valves are open.** Light the FID.
- 5.2 Before analyzing any standards and samples, record the GC baseline profile without any sample injection, using the GC parameters for the method. Verify that the baseline is flat and stable. Conditioning or changing the column before proceeding should correct any irregularities in the baseline. **(Note: Column should be conditioned daily upon use, or immediately before a sequence run when not often in use).**
- 5.3 To condition the column load the Elite1_Conditioning3 - 580 method using the interfaced computer as follows:
Enter Set-up → Click Method → Click Method folder → Choose Elite1_Conditioning3 → Click Select → Enter Basefile name (name it) → OK → Wait for GC to be ready → Click Run → Click start run.
- 5.4 Standards are prepared to cover the % fuel range expected in the samples to be analyzed but, typically, 0%, 1%, 3%, 5% and 8% standards are satisfactory. Prepare so that the mass of the fuel and oil combined is 50g, therefore 0g, 0.5g, 1.5g, 2.5g, and 4g of fuel would be required in 50.0g, 49.5g, 48.5g, 47.5g, and 46g of oil respectively. The mass % diesel fuel is calculated as follows:
- $$\text{Mass \% fuel} = [\text{mass of fuel (g)} / (\text{mass of fuel (g)} + \text{mass of oil (g)})] \times 100$$
- 5.5 Prepare solution for determination of the retention times for decane and octadecane by weighing approximately 0.1g of octadecane into a 15ml vial. Add approximately 5ml of decane. Cap and mix well.
- 5.6 Prepare the solvent solution by mixing in a clean glass bottle 2.5g of decane, 0.5g of octadecane and 247 g of heptane. **The quantities may be altered as long as the proportions remain constant.**
- 5.7 Prepare samples and standards by adding 1 g of sample or standard in a 15 ml vial. Add 2 ml of the solvent solution and mix well.
- 5.8 Place a portion of each sample and standard into a 2 ml Auto Sampler Vial and place them on the carousel.
- 5.9 Place heptane into Solvent A and Solvent B auto-sampler vials.

6. SEQUENCE PREPARATION AND RUN

CALIBRATION SEQUENCE

- Vial1: Blank (nothing)
- Vial2: 1ml of Heptane solvent for baseline subtraction
- Vial3: Retention time solution
- Vial4: 1ml of 0% calibration solution
- Vial5: 1ml of 1% calibration solution
- Vial6: 1ml of 3% calibration solution
- Vial7: 1ml of 5% calibration solution
- Vial8: 1ml of 8% calibration solution

SAMPLE SEQUENCE

- Vial1: Blank (nothing)
- Vial2: 1ml of Heptane solvent for baseline subtraction
- Vial3: Retention time solution
- Vial4: 1ml of 0% calibration solution
- Vial5: 1ml of 1% calibration solution
- Vial6: 1ml of 3% calibration solution
- Vial7: 1ml of 5% calibration solution
- Vial8: 1ml of 8% calibration solution
- Vial9: 1ml Sample 1
- Vial10: 1ml Sample 2
- Vial11: 1ml Sample 3
- Vial12: 1ml Sample 4

7. DATA ANALYSIS

7.1 Data analysis is based upon the peak areas obtained (The GC sums the area between n-Decane and Octadecane automatically through integration). To prepare a standard curve using Excel:

- i) Subtract the area of the blank from the obtained areas to obtain corrected area.
- ii) Determine $R=A/B$, where **A** is the sum of the areas of the fuel peaks (i.e. the areas **between** the n-decane and octadecane peaks) and **B** is the n-decane area.
- iii) Use the standards to plot a standard curve of R vs % fuel and use the R values for the unknown samples to find the % fuel.

NOTE: The method must be calibrated daily. One calibration standard must be a blank (i.e. new oil - 0% fuel). It is advisable to verify the stability of the calibration periodically during the day using a check sample or standard with a known fuel content. The linear regression of plot R vs % fuel should yield an R² value of >0.98.

8. ACCURACY AND PRECISION

8.1 The accuracy and precision of the results shall be reported according to ASTM Standard Test Method D3524.

RECORD OF AMENDMENTS

Revision No.	Section	Description	Date	Initials
07	-	The Quality Instruction has been changed to reflect the new instrumentation at NETE	2009-08-25	SJ
08	-	The Quality Instruction has been changed to reflect the new instrumentation at NETE	2012-02-27	SJ

APPENDIX V TO ANNEX A

NAVAL ENGINEERING TEST ESTABLISHMENT WORK INSTRUCTION

DETERMINATION OF THE AMOUNT OF SEDIMENT FOUND IN COOLANT BY CENTRIFUGE

1. SCOPE

- 1.1 This instruction applies to the determination of the amount of sediment found within a coolant sample by centrifuge.

Safety Note

This work instruction does not fully cover all safety precautions. Employees carrying out these tests are required to read the appropriate Material Safety Data sheets (MSDS) for the chemical reagents used. Any questions regarding the safe use of this procedure should be addressed prior to proceeding. Laboratory coat, safety glasses and latex gloves are required.

2. SUMMARY

- 2.1 A coolant sample is placed into a centrifuge tube and then centrifuged and a visual inspection is made to determine the amount of sediment.

3. REFERENCES

- 3.1 ASTM D96
3.2 ASTM D2709

NOTE: This method provides details beyond those found in the above mentioned method specific to quality control practices at NETE. In case of conflict, the requirements of the aforementioned reference shall take precedence.

4. REQUIRED RESOURCES

- 100ml Centrifuge tube with graduations according to ASTM D96; and
- Centrifuge.

5. PROCEDURE

5.1 Shake the sample well and add 100ml to a centrifuge tube.

NOTE: Only use centrifuge tubes with graduations that abide by the specifications found in ASTM D96.

5.2 If you have two samples to analyze, ensure the tubes are balanced and on opposite sides of the centrifuge. If there is only one sample to analyze, fill a centrifuge tube with water and ensure it is balanced with the sample tube and place them on opposite sides of the centrifuge.

5.3 Centrifuge the samples at 1610rpm for 20 minutes.

5.4 Remove and visually inspect the amount of sediment found at the bottom of the centrifuge tube.

5.5 Estimate the volume of sediment using the following precision table.

Volume of Sediment	Read to the nearest, ml
0.0 – 0.2	0.025
0.2 – 1.0	0.05
> 1.0	0.10

5.6 Report this value as a percent.

RECORD OF AMENDMENTS

Revision No.	Section	Description	Date	Initials

END OF DOCUMENT

ANNEX “B” to PART 3 OF THE BID SOLICITATION

ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts any of the following Electronic Payment Instrument(s):

- Direct Deposit (Domestic and International);
- Electronic Data Interchange (EDI);
- Wire Transfer (International Only);