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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
Public Works and Government Services Canada -
Pacific Region
401 - 1230 Government Street
Victoria, B. C.
V8W 3X4

Title - Sujet BREATHING AIR COMPRESSOR & FILTRATI	
Solicitation No. - N° de l'invitation W3555-136063/A	Amendment No. - N° modif. 001
Client Reference No. - N° de référence du client W3555-136063	Date 2012-07-16
GETS Reference No. - N° de référence de SEAG PW-\$VIC-242-5944	
File No. - N° de dossier VIC-2-35021 (242)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2012-07-31	
Time Zone Fuseau horaire Pacific Daylight Saving Time PDT	
F.O.B. - F.A.B. Specified Herein - Précisé dans les présentes Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input checked="" type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Szczesniak, Michal	Buyer Id - Id de l'acheteur vic242
Telephone No. - N° de téléphone (250) 363-8312 ()	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

AMENDMENT 001

This amendment is raised to:

- (A) Clarify the mandatory requirements by revising the text of Sections 1 and 2 of Annex A; and
- (B) Clarifying Annex B.

The following revision is being made to the Solicitation:

Revision 001:

Remove: Annexes A and B in their entirety; and

Insert:

“Annex A - Requirement

1.0 Overview

This Annex covers the mandatory requirements for one (1) high pressure, high volume, breathing air quality compressor (HPHVBA) and filtration system to be used for submarine support purposes. The deliverables must meet all mandatory requirements in this Annex. The compressor system must be supplied and installed in a self-contained towable trailer. The system will be utilized in a marine ship repair environment. The trailer and enclosure must be designed to operate 100% outdoors and withstand the environmental elements in Victoria, BC, Canada.

2.0 Specifications

2.1 Legislation and Bylaws

2.1.1 The supplied HPHVBA compressor system, components, piping, and filters must adhere to the most current versions of the following standards/regulations:

2.1.1.1 CAN/CSA Z180.1-00 (Compressed Breathing Air and Systems);

2.1.1.2 CSA Z275.2 (Occupational safety code for diving operations);

2.1.1.3 CSA Z94.4 (Selection, use, and care of respirators);

2.1.1.4 ASME B31.1 ; and

2.1.1.5 ASME B31.3.

2.1.2 The main compressor pressure components and all pressure components within the pressure system for the HPHSBA compressor must have a Canadian Registration Number (CRN) issued in accordance with the Boiler and Pressure Vessel Act of Canada to the manufacturer.

2.1.3 The manufacturer must be licensed in the Province of British Columbia with the BC Safety Authority to design, fabricate, and install boiler and pressure systems.

2.1.4 All electrical controls, contactors, switches, and other components that may be electrically energized or used within the compressed air system must meet Canadian Standards Association (CSA) certifications and the entire system must be CSA certified.

2.2 HPHVBA Compressor Requirements

2.2.1 The supplied compressor system must be capable of producing 65 standard cubic feet per minute (SCFM) at 5000 pounds per square inch (psi) minimum continuously.

2.2.2 The supplied compressor must be a four-stage type design normally used to supply high-pressure high-volume air requirements.

2.2.3 The supplied compressor must be designed to operate at 1200 RPM maximum to help extend compressor and component life span.

2.2.4 All components within the compressed air system that are exposed to the compressed air must be rated to 5000 psi minimum.

2.2.5 The compressors drive gear must be rated for an operating life of a minimum of 30,000 hours.

2.2.6 The compressors cylinders must be hardened to provide a minimum of 10,000 hours of operating life.

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- 2.2.7 The compressor must be designed to use a mineral oil lubricant to increase compressor life.
- 2.2.8 The compressor oil operating pressure must be within the range of 44 to 72 psi.
- 2.2.9 The oil pressure lubrication system must lubricate the compressor top end in the higher stages. A splash type lubrication system is acceptable for the drive gear and other rotating components.
- 2.2.10 The compressor must be equipped with a full flow replaceable oil filter.
- 2.2.11 The HPHVBA system must be equipped with the following operator controls, gauges, and safety features:
- 2.2.11.1 The compressor must be controlled by a programmable logic controller (PLC) type controller.
 - 2.2.11.2 The motor must be capable of receiving an operating signal from either the PLC or a manual On/Off type switch.
 - 2.2.11.3 The motor must be capable of being shut down by a signal from the air purification system, moisture monitor, or CO monitor through the PLC controller.
 - 2.2.11.4 The system must include individual gauges to monitor each stage of the compressor cycle. These gauges must monitor temperature, compression pressure, and oil pressure.
 - 2.2.11.5 The control system must include a high temperature sensor that can shutdown the compressor and be overridden if required. The sensor must provide both a visual and an audible alarm.
 - 2.2.11.6 The control system must include a low oil pressure sensor or switch that can shutdown the compressor and be overridden if required. The sensor or switch must provide both a visual and an audible alarm.
 - 2.2.11.7 Each stage of the compressor must include safety relief valves to prevent overpressure at any stage.
 - 2.2.11.8 The control system must include an hour meter to monitor compressor run time for filter and cartridge replacement times.

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- 2.2.11.9 The control system must include a programmable cycle meter to control the automatic draining of condensate from the compressor system.
- 2.2.12 The entire compressor, filters, controls, and safety features must be fully installed into a self-contained towable trailer.
- 2.2.13 The compressor must be equipped with inter stage separators. The inter stage separators for the 2nd and 3rd stages of the compressor must include safety relief valves.
- 2.2.14 The compressor must include a final mechanical separator with a coalescer type oil removal cartridge including a final safety relief valve as part of the purification system.
- 2.2.15 The compressor must be equipped with an air purification system that adheres to CSA Z180.1-00 and Z275.2.
- 2.2.16 The supplied compressor must be equipped with an internal block heater to heat the oil in the crank case of the compressor.
- 2.2.17 Cooling of the compressor, its components, and any coolers in the system must be accomplished using a fan type cooling system.
- 2.2.18 The system must be outfitted with an automated condensate drain system controlled by the PLC to ensure any liquids are drained from the compressor between stages.
- 2.2.19 Compressor and electric motor must be mounted with independent anti-vibration mounts.
- 2.2.20 Compressor must be belt driven and not direct driven. Compressor must be driven by a minimum of 3 drive belts. Compressor must be capable of continued operation even in the event of up to two drive belts failing.
- 2.2.21 Electric motor supplied to power compressor must be a commercial marine construction, totally enclosed, fan cooled type unit.
- 2.2.22 The compressor must be equipped with a moisture monitoring system that will provide a visual warning when the air quality begins to decline as per CSA Z180.1-00 standard or CSA Z275.2.

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- 2.2.23 The system must be actuated and begin providing a warning between 2 to 7 hours before the filters can no longer meet the above breathing air specifications.
- 2.2.24 Once the system can no longer maintain the breathing air to the required specifications, the moisture monitoring system must be capable of completely shutting down the entire compressor system.
- 2.2.25 The system must be equipped with an inline dew point meter.
- 2.2.26 The system must be equipped with an inline carbon monoxide (CO) monitor with a regulator and calibration gas.
- 2.2.27 The CO monitor must include a calibration gas for testing and calibration. The monitor must include a connection point compatible with supplied calibration gas.
- 2.2.28 The compressor must be equipped with a regenerative type dryer which must include a minimum of two replaceable cartridges filters and an additional final purifier located downstream of the dryer to provide breathing quality air.
- 2.2.29 The supplied regenerative type dryer system must be a heatless type unit.
- 2.2.30 The final purifier must include filters to remove residual oil vapors to ensure the breathing quality air is both tasteless and odorless as required for breathing quality air.
- 2.2.31 The compressor system must be capable of reaching a minimum dew point of -45 degrees Celsius.

2.3 Trailer Requirements

- 2.3.1 The supplied fully enclosed trailer must not exceed 78 inches wide by 160 inches long by 84 inches high for the external measurements of the enclosure. Height measurement is from the ground to the top most part of trailer. Length includes hitch, open length of doors is not included in the dimension measurements.
- 2.3.2 The supplied trailer must be of a tandem axle type design with a per axle weight rating of 5000 pounds minimum.

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- 2.3.3 The supplied trailer must have a gross vehicle weight (GVW) rating of 8500 pounds minimum.
- 2.3.4 The supplied trailer must be equipped with 15 inch diameter wheels and tires rated for the appropriate weight load for the axels minimum.
- 2.3.5 Each axle must include a minimum of 2 tires and wheels.
- 2.3.6 The supplied trailer must be supplied with a minimum of one (1) spare tire and wheel identical to the ones installed onto the axles. The spare tire and wheel must be securely stored outside in the front of the trailer.
- 2.3.7 Each wheel on the supplied trailer must be equipped with electric trailer brakes and connected to a tow vehicle via a standard 7 pin trailer connector and breakaway protection system.
- 2.3.8 The supplied trailer must be equipped with marker lights, signal lights, and brake lights. Lights must be light emitting diode (LED) type.
- 2.3.9 The trailer must be equipped with interior lighting powered by both 12 VDC and 120 VAC type lighting, all 12 VDC type lighting must be white LED type lights.
- 2.3.10 The supplied trailer and enclosure must be constructed of materials suitable to withstand outside storage and operation 100 % of the time in a marine saltwater environment within Victoria, BC, Canada.
- 2.3.11 The supplied trailer must be equipped with barn type doors on the rear to provide full opening and access to the compressor and filtration systems.
- 2.3.12 Rear doors must latch using a cam lock type system normally used on commercial trailers or sea containers.
- 2.3.13 The floor of the trailer must be manufactured and designed to carry a minimum load of 4000 pounds within the trailer.
- 2.3.14 The compressor controller, gauges, monitors, and hour and cycle meters must be mounted into a recessed panel mounted on the curb side of the trailer where complete compressor control and monitoring capabilities must be available from this location.
- 2.3.15 The recessed control panel must included a windowed access door that is hinged at the top and swings up and out of the way, this door must be held

open by a minimum of 2 gas type assist shocks normally used for this application.

- 2.3.16 The control panel opening must not exceed a 24 inch by 24 inch overall size.
- 2.3.17 The control panel door must include a sealing system to ensure when closed no contaminants may enter the system when in operation or transit.
- 2.3.18 The control panel must be located vertically within 36 inches from the ground and the top of the control panel must be located no higher than 72 inches from the ground.
- 2.3.19 The control panel door must include a strap or pull cord to allow all users to easily reach and close the door from the open position.
- 2.3.20 The supplied trailer must be equipped with suitable air intake, located on the curb side of the trailer.
- 2.3.21 The supplied trailer must be equipped with suitable air exhaust, located on the road side of the trailer.
- 2.3.22 Both the air intake and air exhaust ports must include suitable finger safe screens to prevent body parts or foreign objects from entering or exiting system.
- 2.3.23 Both the air intake and air exhaust ports must be equipped with an automatic louver opening system that is controlled by the compressor PLC.
- 2.3.24 The intake and exhaust louvers must close completely and provide a suitable seal when unit is in transit or not in operation.
- 2.3.25 The intake and exhaust openings and louvers must be designed to provide protection from weather infiltration during unit operation. This must include a rain gutter and louvers that are designed so that the opening is directed towards the ground.
- 2.3.26 The intake and exhaust louver openings must be designed with a removable panel that can be installed during transit or storage to prevent unwanted materials from entering system during compressor inactivity.

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- 2.3.27 All openings and doors on trailer must be designed with a seal to prevent water and dirt infiltration during towing and storage.
- 2.3.28 All openings and doors must be keyed with keys that are identical. A minimum of four (4) keys must be provided with the equipment.
- 2.3.29 The entire enclosure must be insulated to a minimum thickness of 4 inches. The insulation must have a sound reducing rating and be a heavy batt type such as Roxul that will not compress or sag within the walls as typical fiberglass insulation tends to do.
- 2.3.30 All openings on the trailer must have drip rails or rain gutters above to minimize water running down the trailer side and into an opening.
- 2.3.31 The enclosure must be removable from the trailer deck for compressor service or repair.
- 2.3.32 All connections from the system to the control panel on the enclosure must be connected using MIL-SPEC type electrical connectors, and must include sealed screw on covers.
- 2.3.33 The enclosure must be secured to the trailer deck with lockable latches located on the inside of the enclosure.
- 2.3.34 There must be a minimum of 8 connection latches to secure the enclosure to the trailer deck.
- 2.3.35 The bottom of the enclosure must be equipped with a rubber seal to ensure that the enclosure is completely weather sealed to the trailer deck when installed.
- 2.3.36 The enclosure must be equipped with lifting eyes located in all four corners on the enclosure, labeling in English, must be installed to state these lifting points are not to lift entire system and only for lifting the enclosure off the trailer. Lettering must be a minimum of 3 inches in height and in a highly visible colour that contrasts the enclosure coloring.
- 2.3.37 The trailer must include four (4) stabilizing stands or jacks located in each corner of the unit. These must be designed to retract out of the way when being towed.
- 2.3.38 The trailer must be equipped with a pintel style hitch for towing.

2.3.39 The trailer must be equipped with safety chains and a manually operated jack located on the tongue.

2.3.40 The trailer must be supplied with wheel chocks and a storage location on the exterior of the trailer to securely store wheel chocks when not in use.

2.3.41 Trailer must meet all requirements to be registered to be towed and operated on the roadways in the province of British Columbia, Canada.

2.4 Maintenance Requirements

2.4.1 The system must be supplied with one complete set of consumable items normally required during the first preventative maintenance routine required by the manufacturer, this must include any required filters, oils, and any items not specifically mentioned that are required to be replaced during this preventative maintenance routine.

2.4.2 The system must be supplied with all filters that require replacement within the breathing air system after one year of operation.

2.5 Tooling Start Up Package

2.5.1 All special tooling required to service compressor, filters, or accessory components must be included as part of the package.

2.6 Manuals and Documentation

2.6.1 The Contractor must supply a minimum of 3 copies of the manuals in English, with the supplied equipment, including a minimum of 1 hard copy. Electronic versions for the remaining 2 copies are acceptable with which two independent copies of media must be provided with the electronic versions, i.e. 2 DVD's or 2 CD's. The manuals must cover all equipment, accessories, controls, and components included with the equipment including but not limited to the compressor, trailer, filtration system, PLC controls, and auxiliary options and equipment.

3.0 Quality and Safety

3.1 Safety and Operation Labeling

- 3.1.1 The equipment must clearly identify the lifting points for the equipment.
- 3.1.2 The equipment must clearly identify the center of gravity and the center of mass of the equipment for safe lifting.
- 3.1.3 Any pinch points, hazard areas, operator safety concerns, and moving components must be clearly labeled in English.
- 3.1.4 Operating instruction labels must be clearly identified and printed in English.

3.2 Quality

- 3.2.1 The equipment must meet all operating, performance, and design requirements for the duration of the warranty period as a minimum.
- 3.2.2 If the equipment does not meet the specified performance within the warranty period, the Contractor must take the necessary remedial action to achieve the specified performance.
- 3.2.3 The equipment must be designed and constructed to be free from defects in manufacturing and workmanship.

4.0 Packaging and Transportation

- 4.1 All deliverables must be properly packaged, crated, and/or boxed to ensure no damage is sustained to the equipment during the transport, loading, unloading, or general handling of equipment prior to the final installation.

5.0 Installation and Training

- 5.1 The Contractor must perform any final part installations and/or assembly that must occur on-site after delivery in order to meet all the mandatory requirements.
- 5.2 The Contractor must provide on-site training on the operation, maintenance, and service of the equipment after delivery and final installation / assembly. The training will be scheduled in coordination and agreement with the Technical Authority after contract award.

6.0 Warranty

6.1 Defects in the design, materials and workmanship of the furnished goods and services must be covered by the Warranty.

Annex B - Pricing Schedule

Item	Description	U.I.	Qty.	Firm Unit Price (DDP Destination)
A	High pressure, high volume, breathing air quality compressor (HPHVBA) and filtration system meeting the requirements specified in Annex A	Each	1	
B	Installation meeting the requirements specified in Annex A	Lot	1	
C	Training meeting the requirements specified in Annex A	Lot	1	
Sub-Total Price				
Goods & Services Tax (GST) / Harmonized Sales Tax (HST) - if applicable				
Total Price				

Pricing is inclusive of all material, labour, transportation, travel, living expenses, delivery, and customs fees.”.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.