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11 Laurier St. / 11, rue Laurier  
Place du Portage, Phase III  
Core 0A1 / Noyau 0A1  
Gatineau, Québec 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**  
Industrial Vehicles & Machinery Products Division  
11 Laurier St./11, rue Laurier  
7B1, Place du Portage, Phase III  
Gatineau  
Québec  
K1A 0S5

<b>Title - Sujet</b> TRACKED EXCAVATORS	
<b>Solicitation No. - N° de l'invitation</b> W8476-144815/A	<b>Amendment No. - N° modif.</b> 003
<b>Client Reference No. - N° de référence du client</b> W8476-144815	<b>Date</b> 2013-10-08
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$HS-620-63424	
<b>File No. - N° de dossier</b> hs620.W8476-144815	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2013-10-15</b>	
<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT	
<b>F.O.B. - F.A.B.</b>	
<b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Shirwa, Marian	<b>Buyer Id - Id de l'acheteur</b> hs620
<b>Telephone No. - N° de téléphone</b> (819) 956-3994 ( )	<b>FAX No. - N° de FAX</b> (819) 956-5227
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

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**This amendment 003 is raised to provide questions with answers to potential bidders as follows:**

**Question 9:**

With respect to the Heavy Duty Rotary Cutter and Mulching Attachment, you are asking for 2 separate attachments. If 1 attachment can do both is this acceptable?

**Response 9:**

We require two separate attachments. Both attachments have strengths and weaknesses performing different duties due to their unique geometry. As such, the attachments will be used for different purposes. Configuration B requires both attachments, Configuration C requires only the Rotary Cutter.

**Question 10:**

Regarding 3.5.2 – 1500mm Ditching Bucket requires a capacity of 1.9 cubic metres. Would a 1500mm D-Bucket with a capacity of 1.83 cubic meters with be acceptable?

**Response 10:**

Please see updated specification. The 1500mm Ditching bucket requirements have been amended to require a capacity of at least 1.82 cubic metres.

**Delete:** Purchase Description for Excavator, Tracked, DED, dated 2013-07-10

**Insert:** Purchase Description for Excavator, Tracked, DED, Modified 2013-10-08

**Question 11:**

Regarding 3.5.2 (h) - Grappling Hook - Is it possible to provide additional information or a picture?

**Response 11:**

Please refer to question set 1 – Dated September 24, 2013, Questions 4 and 5.

In addition to these descriptions please see below pictures for further insight into the “style” of grapple required.



**All other terms and conditions remain the same.**



**NOTICE**

This documentation has been reviewed by the Technical Authority and does not contain controlled goods.

**AVIS**

Cette documentation a été révisée par l'Autorité technique et ne contient pas de marchandises contrôlées.

**PURCHASE DESCRIPTION FOR  
EXCAVATOR, TRACKED, DED**

**1. SCOPE**

1.1 **Scope** - This purchase description covers the requirements for diesel engine driven self-propelled track mounted hydraulic excavators.

1.2 **Instructions** - The following instructions apply to this Purchase Description:

- (a) Requirements, which are identified by the word "**shall**", are mandatory. Deviations will not be permitted;
- (b) Requirements identified by "**shall<sup>(B)</sup>**" are mandatory. The Technical Authority will consider substitutes/alternatives for acceptance as an Equivalent;
- (c) Requirements identified with a "will" define actions to be performed by Canada and require no action/obligation on the Contractor's part;
- (d) Where "**shall**", "**shall<sup>(B)</sup>**", or "will" are not used, the information provided is for guidance only;
- (e) In this document "provided" **shall** mean "provided and installed";
- (f) Where technical certification is required, a copy of the certification or an acceptable proof of compliance **shall** be provided upon request;
- (g) Metric measurements **shall** be used to define the requirement; and
- (h) Dimensions stated as nominal **shall** be treated as approximate dimensions. Nominal dimensions reflect a method by which materials or products are generally identified for sale commercially, but which differ from the actual dimensions.

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**OPI DSVPM 4 - DAVPS 4**

Issued on Authority of the Chief of the Defence Staff

Publiée avec l'autorisation du chef de état-major de la Défense



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1.3 **Definitions** - The following definitions apply to the interpretation of this Purchase Description:

- (a) "Technical Authority" - The government official responsible for technical content of this requirement;
- (b) "Equivalent" - A standard, means, or component type, which has been accepted by the Technical Authority as meeting the specified requirements for form, fit, function and performance; and

1.4 **Configuration Capability Table** - Vehicles covered by this Purchase Description are represented as configurations. The following table shows required performance and dimensions by configuration with a clause reference. Proof of Compliance *shall* be provided for all items and values listed in the Configuration Capability Table.

CHARACTERISTIC	CLAUSE	UNITS	CONFIGURATION	
			B	C
SPEED	3.4.1	km/h	5.0	5.0
4.5m LIFT	3.4.2 (a)	kg	6,800	9,200
6m LIFT		kg	4,500	5,900
7.5m LIFT		kg	3,200	4,200
REACH	3.4.2 (b)	mm	9,600	9,800
DIGGING DEPTH		mm	6,400	6,400
LOADING HEIGHT		mm	6,400	6,600
DIPPER FORCE	3.4.2 (c)	kN	100	125
BUCKET FORCE		kN	125	170
VEHICLE WIDTH	3.4.3 (a)	mm	3,400	3,400
VEHICLE LENGTH	3.4.3 (b)	mm	12,000	12,000
VEHICLE HEIGHT	3.4.3 (c)	mm	3,600	3,600

1.4.1 **Attachment/Equipment Capability Table** - The following table indicates dimensional and performance capabilities required. Proof of Compliance **shall** be provided for all **Requirements** and values listed in the Attachment/Equipment Capability Table.

Attachment/Equipment		CLAUSE	UNITS	Requirement	Configuration	
					B	C
750mm E-BUCKET	CAPACITY	3.5.2 (a)	m <sup>3</sup>	0.90	✓	✓
1200mm E-BUCKET	CAPACITY	3.5.2 (b)	m <sup>3</sup>	1.70	✓	✓
1500mm D-BUCKET	CAPACITY	3.5.2 (c)	m <sup>3</sup>	1.82	✓	✓
FROST TOOTH		3.5.2 (d)			✓	
CUTTER	WOOD DIAM	3.5.2 (f)	mm	450	✓	✓
	SWATH		mm	1,200		
MULCHING	WIDTH	3.5.2 (g)	mm	910	✓	
GRAPPLING HOOK	OPENING	3.5.2 (h)	mm	1,050		✓
BREAKER	ENERGY	3.5.2 (i)	J	6,750		✓
COMPACTOR	FORCE	3.5.2 (j)	kN	100		✓

## 2. **APPLICABLE DOCUMENTS**

### 2.1 **Government Furnished Documents - NOT APPLICABLE**

2.2 **Other Publications** - The following documents form part of this Purchase Description. Web sites for the organization are given when available. Effective documents are those in effect on date of manufacture. Sources are as shown:

SAE Handbook  
 Society of Automotive Engineers Inc.  
 400 Commonwealth Dr.,  
 Warrendale, PA, 15096  
<http://www.sae.org>

PCSA Standards  
 Association of Equipment Manufacturers  
 111 E. Wisconsin Ave. - Suite 1000  
 Milwaukee, WI, 53202-4879  
<http://www.aem.org/>

## 3. **REQUIREMENTS**

### 3.1 **Standard Design**

- (a) The vehicle/equipment **shall** be the latest model from a manufacturer who has demonstrated acceptability by manufacturing and selling this type and size class of vehicle in North America for at least 1 year;
- (b) The vehicle/equipment **shall** have engineering certification available, upon demand, for this application from the original manufacturers of major equipment systems and assemblies;

- (c) The vehicle/equipment **shall** conform to all applicable laws, regulations and industrial standards governing manufacture, safety, noise levels and pollution in effect in Canada at the time of manufacture; and
- (d) The vehicle/equipment **shall** have system and component capacities not greater than their published ratings (i.e. product or component brochures) or accompanied by proof of compliance.

### 3.2 Operating Conditions

3.2.1 **Weather** - The vehicle/equipment **shall** operate under the extremes of weather conditions found in Canada in temperatures ranging from -40 to 37° C (-40 to 99° F).

3.2.2 **Terrain** - The vehicle/equipment **shall** be capable of being operated off-road (e.g. construction sites, open fields and dirt tracks). Terrain conditions **shall** include year round operations on snow, mud, sand and ice.

### 3.3 Safety Standards

3.3.1 **Noise Level** - The vehicle/equipment noise levels **shall** meet the requirements of legislation relative to Occupational Safety and Health both at the operator's station and exterior to the vehicle.

3.3.2 **Safety Requirements** - The excavator **shall** comply with PCSA Standards and relevant Canada Motor Vehicle Safety Standards.

3.4 **Performance** - Proof of compliance **shall** be provided for all performance requirements.

3.4.1 **Vehicle Performance** - The vehicle performance of the excavator **shall** have a forward speed of no less than that given in the Configuration Capability Table as "SPEED".

### 3.4.2 Excavator Performance

- (a) The excavator **shall** have lifting capacities at ground level through 360 degrees, in accordance with SAE Standard J1097 of:
  - i At least that given as "4.5m LIFT" in the Configuration Capability Table, at a nominal 4.5 metre radius;
  - ii At least that given as "6m LIFT" in the Configuration Capability Table, at a nominal 6 metre radius; and
  - iii At least that given as "7.5m LIFT" in the Configuration Capability Table, at a nominal 7.5 metre radius.
- (b) The excavator **shall** have digging and loading performance, in accordance with SAE J/ISO 7135 as follows:
  - i Reach at ground level of at least that given as "REACH" in the Configuration Capability Table;
  - ii A digging depth of at least that given as "DIGGING DEPTH" in the Configuration Capability Table; and

- iii A loading height of at least that given as "LOADING HEIGHT" in the Configuration Capability Table.
- (c) The excavator *shall* have digging forces, in accordance with **SAE Recommended Practice J1179** using the standard excavating bucket:
  - i Dipper stick force of at least that given as "DIPPER FORCE" in the Configuration Capability Table; and
  - ii Bucket tangential force of at least that given as "BUCKET FORCE" in the Configuration Capability Table.

#### 3.4.3 Equipment Weight and Dimensions

- (a) The excavator *shall* have a width at the widest point of no more that given as "VEHICLE WIDTH" in the Configuration Capability Table;
- (b) The excavator *shall* have a length, prepared for transport, of no more that given as "VEHICLE LENGTH" in the Configuration Capability Table; and
- (c) The excavator *shall* have a height, prepared for transport, of no more that given as "VEHICLE HEIGHT" in the Configuration Capability Table.

3.4.4 Vehicle Delivery Condition - The vehicle *shall* be delivered to destination in a fully operational condition (serviced and adjusted) and both the interior and exterior *shall* be cleaned. If the vehicle requires assembly at destination, the Contractor *shall* be responsible for all manpower and equipment to perform assembly. The consignee will provide the area required for assembly. For shipment verification, all items such as wheel wrenches, jacks, and all other tools, equipment and accessories, which are shipped loose with the equipment, *shall* be listed on the shipping certificate or to an attached packing note.

### 3.5 Equipment

3.5.1 Application Equipment - Equipment/features below *shall* be provided:

- (a) Boom - A boom, either a single-piece boom or a two-piece boom;
- (b) Hydraulic Quick Coupler - A hydraulically actuated quick coupler system. The operator *shall* be able to change the boom tip equipment (except for hydraulic connections) from the operator's station;
- (c) High Flow Auxiliary Hydraulics - A High Flow Auxiliary Hydraulic connections at the tip of the excavator arm. Connections *shall* be quick-connect drip-less connectors. The hydraulic system *shall* be equipped with continuous service priority flow valve(s) to provide power to attachments provided with vehicle such as a cutting head;
- (d) Wrist Action - A hydraulic wrist action, which rotates the bucket at least 30 degrees to either side. Use of the wrist action will be limited to light work such as use with ditching buckets;
- (e) Vehicle Tie-Down Devices - Vehicle *shall* be equipped with permanent and integral vehicle tie-down devices.

- i The tie-down devices **shall** be designed for forward thrust of at least 4 G, a rearward thrust of at least 4 G, an upward thrust of at least 2 G and a side thrust of at least 1.5 G (1 G = shipping weight of the equipment), loads are not imposed simultaneously;
  - ii The tie-down devices **shall** be designed to withstand stresses imposed by thrust loads (all directions) with a factor of safety of at least 1.5 with respect to the ultimate strength of the material;
  - iii The tie-down devices **shall** be designed/located to prevent shifting or movement during transport on low-bed trailers, rail car and aboard ships;
  - iv The tie-down devices **shall** be located to permit easy attachment of cables or turnbuckles;
  - v The tie-down devices **shall** be identified and marked with maximum loads permitted. Markings **shall** be painted using a contrasting colour; and
  - vi The tie-down devices **shall** include complete tie down instructions showing locations. This information **shall** be shown in the Operators Manual and it is preferred that it is marked in the vehicle cab (in the form of decals).
- (f) **Lifting Attachments** - Lifting attachments, to lift the vehicle in travelling/operating position.
- i The lifting attachments **shall** be capable of carrying not less than 2-1/2 times normal load imposed on each individual attachment. Attachments points **shall** be permanently marked with maximum allowable load;
  - ii The lifting attachments **shall** have attachments positioned so lifting loads are in line with longitudinal axis of attachment eye;
  - iii The lifting attachments **shall** have attachment eyes with a nominal inside diameter of 75mm; and
  - iv The lifting attachments **shall** have complete diagrams and instructions (preferably in Operator's Manual) for lifting/securing vehicle on transportation medium including the basic vehicle's shipping weight.
- (g) **Recovery Hooks** - Towing hooks, loops, or a component with equivalent capability at the front and rear of the vehicle. Recovery hooks whose location is other than the vehicle chassis **shall** be approved by the Technical Authority;
- (h) **Non-Skid Walking Surfaces** - All walking surfaces **shall** be covered with a coarse non-skid coating for operator safety; and
- (i) **Debris Protection** - Debris Protection. The vehicle **shall** have the swing motor, control valves, heater, cab windows and fuel tank protected from

vandalism, accumulation of snow, ice, branches and debris.

### 3.5.2 Attachments/Equipment

- (a) 750mm Excavating Bucket - A 750mm wide excavating bucket *shall* be supplied when indicated in the Attachment/Equipment table. The excavating bucket *shall* have teeth and match the quick coupler system. The bucket *shall* have a nominal width of 750mm and a capacity of at least that given as "750mm E-BUCKET - CAPACITY" in the Attachment/Equipment Table;
- (b) 1200mm Excavating Bucket - A 1200mm wide excavating bucket *shall* be supplied when indicated in the Attachment/Equipment table. The excavating bucket *shall* have teeth and match the quick coupler system. The bucket *shall* have a nominal width of 1200mm and a capacity of at least that given as "1200mm E-BUCKET - CAPACITY" in the Attachment/Equipment Table;
- (c) 1500mm Ditching Bucket - A 1500mm wide ditching bucket *shall* be supplied when indicated in the Attachment/Equipment table. The ditching bucket *shall* have a have a bolt on reversible and replaceable cutting edge and *shall* match the quick coupler system. The ditching bucket *shall* have a nominal width of 1500mm and a capacity of at least that given as "1500mm D-BUCKET - WIDTH" in the Attachment Equipment Table;
- (d) Frost Tooth - A frost tooth designed to break through frozen ground matching the quick coupler system *shall* be supplied when indicated in the Attachment/Equipment Table. The frost tooth *shall* have a replaceable tip;
- (e) Hydraulic Thumb - A hydraulic thumb matching the supplied excavating bucket(s) and quick coupler system *shall* be provided;
- (f) Heavy-Duty Rotary Cutter - A heavy-duty horizontal mount rotary cutter used to cut/grind trees and stumps satisfying the safety criteria of SAE Recommended Practice J1001 *shall* be supplied when indicated in the Attachment/Equipment Table. The heavy-duty rotary cutter *shall* meet the following conditions:
- i The heavy-duty rotary cutter *shall* have the blades covered and protected by a steel deck with safety chains or a Technical Authority Approved Equivalent;
  - ii The heavy-duty rotary cutter *shall* be able to cut/grind wood with a nominal diameter of that given as "CUTTER - WOOD DIAM" in the Attachment/Equipment Table; and
  - iii The heavy-duty rotary cutter *shall* have a cutting swath of no less than that given as "CUTTER - SWATH" in the Attachment/Equipment Table.
- (g) Mulching Attachment - A rotary drum mulching attachment suitable for clearing brush, small trees and ditches. The mulching attachment matching the quick coupler system supplied *shall* be supplied when indicated in the Attachment/Equipment Table. The mulching attachment *shall* meet the following conditions:

- i The mulching attachment *shall* be a rotary drum type with at least 18 carbide tipped cutting teeth appropriately sized for vehicle; and
  - ii The mulching attachment *shall* have a nominal cutting width of that given as "MULCHING - WIDTH" in the Attachment/Equipment Table.
- (h) **Grappling Hook** - A grappling hook attachment matching the quick coupler system *shall* be supplied when indicated in the Attachment/Equipment Table. The grappling hook *shall* open to a nominal width of that given as "GRAPPLING HOOK - OPENING" in the Attachment/Equipment Table;
- (i) **Hydraulic Breaker** - A hydraulic breaker attachment matching the quick coupler system *shall* be supplied when indicated in the Attachment/Equipment Table. The hydraulic breaker *shall* have a breaking energy of at least that given as "BREAKER - ENERGY" in the Attachment/Equipment Table; and
- (j) **Plate Compactor** - A plate compactor, compatible with quick connect using auxiliary hydraulic power *shall* be supplied when indicated in the Attachment/Equipment Table. The plate compactor *shall* have a compacting force of at least that given as "COMPACTOR - FORCE" in the Attachment/Equipment Table.

3.6 **Operator Station** - The operator station *shall* include:

- (a) **ROPS Cab** - A weatherproof pressurized, insulated cab incorporating Roll Over Protective Structure, which *shall*<sup>(B)</sup> conform to SAE J1040 or ISO 3471.
- i The cab *shall* have a ventilation and defrosting system capable of keeping windows free from frost and moisture and include a heater conforming to SAE J1503 and SAE J169 or conforming to ISO 10263-4;
  - ii The cab *shall* have safety glass in windows. It is preferred the glass be tinted to reduce solar heating load;
  - iii The cab *shall* have windshield wipers on the front and rear windows conforming to SAE J198 including a windshield washer for each wiper; and
  - iv The cab *shall* have two lockable doors, or one door and at least visibly labelled one window as an emergency operator escape route.
- (b) **Suspension Seat** - An operator's air suspension seat and backrest in conformance with SAE J899 or in conformance with ISO 11112:1995 and ISO 7096. The seat *shall* be selected to be comfortable for an operator who may be operating the vehicle for extremely long periods and *shall*<sup>(B)</sup> have seat material being a breathable fabric or a mesh surface.
- i The seat *shall* be equipped with seat belts, conforming to with SAE J386 , Type 1 or ISO 6683; and

- ii The seat **shall** be horizontally and vertically adjustable while in a seated position.
  - (c) **Mirror(s)** - Adjustable rear-view mirrors positioned for safe reverse operation. If exterior mirrors are used, they **shall** be heated with separate dashboard switch. It is preferred that the non-reflective surface of the mirror be flat black. It is preferred that mirrors be a split type with at least 25 percent convex or fully convex;
  - (d) **Rear View Camera** - A rear view camera **shall** be installed on the excavator. The camera image **shall** be displayed on a LCD screen mounted in the cab of the excavator.
  - (e) **Radio** - An AM/FM radio which turns off automatically when the vehicle is not in service **shall** be provided. It is preferred that the radio system includes a CD player and an auxiliary input connection;
  - (f) **Air Conditioner** - An air conditioning system conforming to SAE J1503 and SAE J169 or conforming to ISO 10263-4 **shall** be provided. Air conditioning units **shall** not use ozone depleting refrigerants such as CFCs (ChloroFluoroCarbons) but preferably use HFCs (Hydro FluoroCarbons); and
  - (g) **Window Guards** - The windshield and windows **shall** be protected with removable window guards. The guards **shall** provide protection to the operator's station from debris during use of rotary cutter, mulching attachments and similar activities.
- 3.7 **Chassis** - The vehicle chassis **shall** be the manufacturers standard for a vehicle of this type and size.
- 3.8 **Engine** - The engine **shall** be diesel powered.
- 3.8.1 **Engine Components** - Engine components **shall** be manufacturers standard.
- 3.8.2 **Fuel Tank(s)** - The fuel tank(s) **shall** be the manufacturer's standard. The fuel tank(s) **shall** be at least half full when delivered.
- 3.8.3 **Engine Cold Weather Aids** - The engine **shall** be equipped with cold weather aids to enable the engine (operating with winter grade fuels/oils) to be started at temperatures down to -40° C.
- (a) A 110-volt engine heater(s). The vehicle **shall** be fitted a 110-volt engine heater(s). The heater(s) **shall** have a capacity as recommended by the engine manufacturer or conforming to SAE Information Sheet J1310; and
  - (b) A low temperature starting aid. The engine **shall** have one of the following: an ether injection system, glow plug(s) or intake air preheat system.
- 3.8.4 **Fuel-Fired Pre-Heater** - The fuel-fired pre-heater **shall** be the size recommended by the heater manufacturer. The model **shall** be subject to Technical Authority approval.
- 3.9 **Transmission** - The transmission **shall** be the manufacturer's standard, which **shall**<sup>(B)</sup> be power shift, power shuttle or hydrostatic.

- 3.10 **Braking System** - The braking system **shall** be the manufacturer's standard, which **shall**<sup>(B)</sup> conform to SAE J/ISO 10265.
- 3.11 **Steering** - The vehicle **shall** be equipped with manufacturer's standard steering system.
- 3.12 **Suspension and Tracks**
- (a) The vehicle **shall** have triple grouser extreme duty track shoes;
  - (b) The vehicle **shall** have track shoes with a nominal width of 800mm; and
  - (c) The vehicle **shall** be equipped with rock guards spanning the length of the track.
- 3.13 **Controls** - Controls **shall** be manufacturer's standard joystick controls including a safety device ensuring that engine can only be started with the transmission in a neutral position and a throttle control positioned for convenient operation.
- 3.14 **Instruments** - Instruments **shall** be manufacturer's standard including a digital read-out hour-meter, which displays accumulated running time up to 9,999 hours.
- 3.15 **Electrical System** - The vehicle electrical system **shall** be the manufacturer's standard electrical system, which **shall** include:
- (a) **Solar Battery Charging System** - The Battery Solar Charging System **shall**<sup>(B)</sup> be equivalent to a NSN 6130-01-487-0035. The solar charger panel **shall** be roof mounted. The contractor **shall** have Solar Battery Charging System location/wiring approved by the Technical Authority prior to installation.
- 3.16 **Lighting** - The vehicle **shall** have the manufacturer's standard lights, LED where the manufacturer offers the option commercially. The lighting system **shall** include:
- (a) **Amber Coloured Strobe Light** - Amber coloured omni-directional strobe light(s) either on continuously or with a dash mounted control switch **shall** be provided. The strobe light(s) **shall** provide maximum vehicle visibility; and
  - (b) **Working Lights** - Additional forward and rearward facing working lights for no/low light working conditions **shall** be provided. The working lights **shall** be LED where the manufacturer offers the option commercially.
- 3.17 **Hydraulic System** - The hydraulic system **shall** be the manufacturer's standard complete with all components required for the operation of the hydraulic equipment specified.
- 3.18 **Lubricants and Hydraulic Fluids** - The vehicle **shall**<sup>(B)</sup> be serviced with the manufacturer's standard non-proprietary synthetic lubricants and hydraulic

fluids. The fluids **shall** perform without degradation in all conditions outlined in section 3.2.1.

3.18.1 **Automatic Greasing System** - The vehicle **shall** be equipped with an Automatic Greasing System, which **shall** automatically provide grease to the majority of the greasing points, which **shall** include the quick coupler. The greasing system **shall** include a telltale light indicating that the system is functioning and a low grease level alarm in the operator's station.

3.19 **Paint** - The vehicle **shall** be painted using manufacturer's standard commercial colours. The prime coating **shall** be a high-durability, corrosion-resistant type. The prime coating **shall**<sup>(B)</sup> be epoxy type or baked powder coat.

3.20 **Identification** - The following information **shall** be permanently marked in a conspicuous and protected location:

- (a) Manufacturer's name, model and serial number; and
- (b) Manufacturer's Vehicle Identification Number (VIN), where applicable.

4. **Integrated Logistic Support** - The Contractor is required to ensure that spare parts required to conduct maintenance and repair vehicles are available for purchase for a period of a least 10 years.

4.1 **Documentation and Support Items** - The Contractor **shall** provide the following documentation and support items.

4.1.1 **Items with Each Vehicle** - The Contractor **shall** provide the following items with each vehicle:

- (a) **Vehicle Manuals** - Manuals required for safe operation, maintenance and repair of the vehicle. A complete set of manuals **shall** be provided on CD/DVD-ROM (without requirements for password(s), special installation requirements or internet connection) and in paper format. The Vehicle Manuals **shall** include:
  - i **Operator's Manuals** - Operator's manuals in a combined bilingual format or as two (2) individual manuals (one English, and one French) in the same binder;
  - ii **Parts Manuals** - The Parts Manuals in English (French translation is desirable);
  - iii **Maintenance (Shop Repair) Manuals** - The Maintenance (Shop Repair) Manual in English (French translation is desirable).
- (b) **Warranty Letter** - A paper copy of the completed bilingual Warranty Letter in the approved format provided with each vehicle shipped. Designated warranty providers **shall** honour the warranty letter.
- (c) **Initial Parts Kit** - One Initial Parts Kit accompanying each vehicle/equipment. Each Initial Parts Kit **shall** include a complete set of filters and filter elements from the Original Equipment Manufacturer.
- (d) **Keys** - Four (4) complete sets of keys to operate the vehicle and any locks **shall** be supplied.

4.1.2 **Documents Provided to Technical Authority** - Example documents are available from the Technical Authority. The Contractor **shall** provide the following documents to the Technical Authority prior to vehicle delivery:

- (a) **Data Summary** - A bilingual Data Summary for each make/model/configuration by completing Technical Authority's template with data and a vehicle picture;
- (b) **Sample Manuals** - A set of Sample Manuals in digital and paper format, including the Operator, Parts and Maintenance Manuals. The sample manuals **shall** be delivered to the Technical Authority 30 working days before delivery of vehicles. Sample manuals will not be returned. The Technical Authority will provide manual approval or comments within 30 days;
- (c) **Copy of Warranty Letter** - The Contractor **shall** send a copy of the Warranty Letter, in electronic format, to the Technical Authority for each vehicle;
- (d) **Photographs** - Two (2) digital pictures, one left-front three-quarter view, and one right-rear three-quarter view of each make/model/configuration. The pictures **shall** have an uncluttered background. Pictures **shall** have a size of at least 4 Mega pixels; and
- (e) **Material Safety Data Sheets** - The contractor **shall** provide a listing of all hazardous materials used in the fabrication of the product supplied to the Technical Authority, if there are no hazardous materials used, this **shall** be noted on the listing. The contractor **shall** provide Material Safety Data Sheets for all the hazardous materials used in the fabrication of the product supplied.

4.2 **Training** - The Contractor **shall** perform the following training:

- (a) **Training - Maintenance Personnel** - The Contractor **shall** provide a maintenance/repair training course. The course **shall** be given at the destination or contractor's facilities for a minimum duration of one (1) day to provide training of up to eight (8) maintenance personnel. Training **shall** be available in both official languages for destinations in the province of Quebec or when requested by the Technical Authority. The final dates **shall** be arranged with the Technical Authority. After completion of the course the Contractor **shall** have a "**PROOF OF MAINTAINER TRAINING**" certificate signed by a Crown Representative for the destination. The Technical Authority will supply this document in an electronic format. The course curriculum **shall** include:
  - i Operation and maintenance safety precautions;
  - ii Preventive maintenance including servicing schedules (10 % of classroom time);
  - iii Trouble shooting, testing and adjustments (70 % of classroom time); and
  - iv Special tools and test equipment.

(b) **Training - Operators** - The Contractor *shall* provide an operator training course. The course *shall* be given at the destination or contractor's facilities for a minimum duration of two (2) days to provide training for up to six (6) DND operators. Training *shall* be available in both official languages for destinations in the province of Quebec and when requested by the Crown. The final dates *shall* be arranged with the Technical Authority. After completion of the course the Contractor *shall* have a "PROOF OF OPERATOR TRAINING" certificate signed by a Crown Representative for the destination. The Technical Authority will supply this document in an electronic format. The course curriculum *shall* include:

- i Safety precautions to be observed while operating and servicing the vehicle;
- ii Vehicle/equipment operating characteristics;
- iii Vehicle/equipment operating procedures;
- iv Pre-operating and pre-shutdown procedures;
- v Daily/weekly operator servicing procedures; and
- vi A minimum of two (2) hours practical operating experience per operator.