BACKGROUND

The Jet A1 fuel-dispensing system at this site consists of a 34,095 litre aboveground horizontal contained steel tank assembly containing Jet A1 fuel for use in DFO helicopters. The storage tank and the aviation fuel-dispensing cabinet are to be removed and replaced with new equipment in a phased approach as the equipment becomes available from the manufacturer(s).

Work shall be completed as per applicable codes and regulations, such as, but not limited to the following:

- *Canadian Environmental Protection Act, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations, 2008 (CEPA);*
- *CSA Standard – B836-14; Storage, handling, and dispensing of aviation fuels at aerodromes, 2014 (B836);*
- *The National Fire Code of Canada, 2010 (NFC); and,*
- *Canadian Council of the Ministers of Environment – Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products, 2003 (CCME).*

SUMMARY OF WORK

The proposed work will include the installation of a new 34,350L aboveground horizontal double walled **stainless steel** vacuum monitored storage tank, a new Jet A1 aviation fuel-dispensing cabinet and associated **stainless steel** pipe, valves and fittings, signage and fire extinguishers. It is our understanding that the aviation fuel-dispensing cabinets have a long lead time, therefore the work will be completed in a phased approach, with the tank being replaced as Phase 1 of the work, and the aviation fuel dispensing cabinet being replaced as Phase 2 of the work pending its delivery from the manufacturer. All work shall be completed and invoiced by March 31, 2016. If delivery of the fuel-dispensing cabinet is anticipatd to be beyond March 31, 2016, a project hold back will be applied until the cabinet has been installed.

Contractor shall supply shop drawings to Engineer for approval prior to ordering tank and fuel-dispensing cabinet.

During Construction Phase 1 of the work, the existing tank will be removed and the new tank will be installed, on the existing concrete tank pad. The existing tank pad is equipped with an existing steel product transfer area containment curb. The existing electrical conduit and wiring will be reused along with a portion of the existing aboveground single wall stainless steel pipeline between the tank and the aviation fuel-dispensing cabinet.

During Construction Phase 2 of the work, the existing aviation fuel-dispensing cabinet and its concrete pad will be removed. A new concrete pad complete with traffic protection bollards will be placed, and the new aviation fuel-dispensing cabinet will be installed and connected to the existing pipelines from the tank. The existing electrical conduit and wiring will be reused.

The Contractor shall clear all site services in the general area of the works prior to any construction activities.

INSTALLATION OF NEW JET A1 FUEL-DISPENSING SYSTEM

Construction Phase 1:

- The Contractor shall drain and clean the existing stainless steel product and air eliminator pipelines from the tank to the aviation fuel-dispensing cabinet. The Contractor shall install new flanges at each end of the section of pipeline and modify pipe routing as indicated on the design drawings.
- The Contractor shall install new pipe supports to suit the new pipeline routing as detailed on the design drawings.
- The Contractor shall empty, gas free, remove and dispose of the existing storage tank and piping at an approved disposal facility as indicated on the drawings.
- The Contractor shall clean and inspect the existing concrete pad and product transfer area containment curbing and re-caulk all sawcuts, seams and cracks to ensure liquid tight containment.
- The Contractor shall open the former transition sump in the concrete tank pad and remove and dispose of any water at an approved disposal facility. Core 4 only 50mm diameter holes in its bottom to ensure drainage. The sump shall be filled with sand to 100mm below grade, and be capped with 100mm of concrete to grade. PVC sleeves shall be provided for electrical cable or conduit through the new concrete cap.
- The Contractor is required to supply and install one new, 34,350 litre (nominal capacity) aboveground, horizontal, double-walled, vacuum monitored, **stainless steel** ULC S601 tank. The tank is to be shop fabricated and come complete with the following:
  - stainless steel construction;
  - galvanized steel fill access stairway and fill platform with galvanized safety grating and stair treads as per the design drawings;
  - spill containment box;
  - lifting lugs;
  - interstitial vacuum monitoring (vacuum gauge);
  - interstitial relief vent;
  - emergency vent;
  - dip-stick and dipstick holder fixed to fill platform;
  - two support saddles (100% welded to tank);
  - laminated dip chart;
  - have two 20 mm diameter holes in each of the support saddles for anchoring;
  - the tank shall be equipped with the following fittings:
    - 7 x 4" (100 mm) dia. top fittings;
    - 1 x 4" (100 mm) in spill containment box ;
    - 1 x 2" (50 mm) in spill containment box;
    - 1 x 24" (600 mm) manway.
- The Contractor is responsible to make the necessary provisions for the delivery, unloading and temporary placement of the aboveground tank.
- The Contractor shall supply and install all tank top appurtenances including pressure/vacuum vent caps, overfill prevention valve and tight fill connector.

- The Contractor shall supply and install a new 2HP submersible pump complete with mechanical line leak detector, explosion proof stainless steel solenoid valve, **floating suction adaptor** and pump controller as indicated on the design drawings.
- The Contractor shall supply and install a 2" (50mm) dia. floating suction assembly to the submersible pump's floating suction adaptor.
- The Contractor shall supply and install a new mechanical tank level gauge complete with drop tube as shown on the drawings.
- The Contractor shall supply and install new safety and operational signage in accordance with the drawings.
- Existing traffic protection (i.e. jersey barriers) to remain.
- Ensure that the new tank is clearly labeled on a minimum of three sides of the tank indicating the contents and volume of the tank as indicated on the drawings.
- The Contractor shall re-instate electrical power to the new submersible pump and solenoid, flush entire piping system with minimum 35,000L at rated flow, and shall re-commission the existing aviation fuel-dispensing cabinet.
- Restore work area to original condition;
- The Contractor shall ensure site is cleaned to Engineer's/Owner's satisfaction;
- The registration of the new system with Environment Canada will be provided by DFO.

Construction Phase 2:

- The Contractor shall remove and dispose of the existing Jet A1 aviation fuel-dispensing cabinet and associated supply piping up to the location noted on the drawings where flanges were placed during Phase 1 of the work.
- The Contractor shall remove and dispose of existing concrete slabs and transition sump;
- The Contractor shall prepare the new subgrade for the new concrete fuel-dispensing cabinet pad as per the design drawings
- The Contractor shall install the new reinforced concrete fuel-dispensing cabinet pad as per the design drawings;
- The Contractor shall supply and install the new Jet A1 aviation fuel-dispensing cabinet and associated supply piping. The fuel-dispensing cabinet is to be shop fabricated and come complete with the following:
  - stainless steel cabinet construction;
  - stainless steel piping and valves;
  - spill containment drip pan;
  - pump and hose reel controls;
  - jet fuel filter/separator monitor as per API/IP Spec 1581 or API/IP Spec 1583;
  - thermal pressure relief;
  - air release;
  - meter complete with digital display;
  - electric rewind hose reel complete with 30.5m of hose and overwing dispensing nozzle with deadman control;
  - bonding reel and clamp complete with spring cable rewind; and,
  - all required accessory items including pressure gauges, differential gauges, drains, vents, etc.
- Supply and install two new 40 B:C rated fire extinguishers as indicated;
- Supply and install safety signage as indicated on the drawings;

- The Contractor shall ensure new fuel-dispensing cabinet and stainless steel pipelines are connected to a new ground rod or grounding grid to provide proper static dissipation;
- After completion of Phase 2 construction, the Contractor shall again flush the entire fueling system min. 35,000L at rated flow and re-commission the new aviation fuel-dispensing cabinet;
- Restore work area to original condition;
- The Contractor shall ensure site is cleaned to Engineer's/Owner's satisfaction;
- The registration of the new system with Environment Canada will be provided by DFO – Contractor to label the tank accordingly; and
- The Contractor shall contact the Engineer prior to completion of work to schedule final review by the Engineer.

Attachment: Existing Site Plan – Drawing No. 01
Proposed Site Plans Showing Phased Approach – Drawing No. 02
Phase 1 New Jet A1 Tank Plan, Elevation & General Arrangement – Drawing No. 03
Phase 2 New Fuel-Dispenser Cabinet Plan, Elevation & General Arrangement – Drawing No. 04