



**FISHERIES AND OCEANS CANADA  
CANADIAN COAST GUARD**

**M/V KATHRYN SPIRIT**

**ROBOTIC UNDERWATER INSPECTION**

**ORDER No. F3065-16IN585**

**PREPARED BY:**

**Michel Birs, President**

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## 1.0 MANDATE

Divex Marine Inc. has received, from Fisheries and Oceans Canada/Canadian Coast Guard, a mandate to carry out an inspection of the M/V Kathryn Spirit using a robotic camera (ROV). The mandate includes, among others, the following items:

- Inspection of M/V Kathryn Spirit;
- Full report with video support.

## 2.0 PERSONNEL ASSIGNED TO THIS WORK

- Project Lead and Pilot: Michel Birs
- Co-pilot: Josh Bazar

## 3.0 CONDITIONS DURING THE INSPECTION

- Date of the inspection: July 1, 2016
- Water temperature: 18°C
- Visibility: 1 metre
- Approximate water velocity: Weak
- Maximum water depth: 8 metres

## 4.0 EQUIPMENT USED

Our work unit included a truck fully equipped for this type of operation.

The robotic camera used for underwater inspection was a Seabotix LBV 300XL-2.

Equipment and devices required comply with current safety standards and regulations.

All necessary precautions were taken to ensure that our operations were carried out safely.

## 5.0 INSPECTION

The inspection was carried out in poor conditions due to the heavy rain and wind for the last days, which greatly affected underwater visibility. The seabed consisted mainly of highly volatile silt, which also interfered with the inspection under the vessel. Below are the observations we made during this inspection.

- Surfaces inspected (starboard side) were covered with a significant amount of zebra mussel, freshwater sponges and silt;
- Surfaces inspected (port side) were mainly covered with freshwater sponges and silt;
- Bilge keels (port and starboard side) showed no significant damage;
- We observed that the M/V Kathryn Spirit starboard bilge strake was pressed against the barge between frames No. 105 to No. 115;
- The hull was resting on the seafloor between frames No. 1 to No. 45;
- Free space between the seabed and the hull was less than half a metre between frames No.45 to No.105;
- Free space between the seabed and the hull was more or less 1 metre between frames No. 105 to No. 145;
- Free space between the seabed and the hull varied from 1.5 to 2.5 metres between frames No. 145 to No. 200;
- The bottom of the rudder was buried in the seabed by approximately 1.2 metres;
- The end of the propeller blade, position 6h00, was buried in the seabed by approximately 0.5 m;
- Areas inspected showed no significant damage.

We thank you for your attention. Please contact us if you require further information.

Sincerely,



Michel Birs, President  
Divex Marine Inc.