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CANADIAN COAST GUARD

Wreck of General Cargo Vessel “MANOLIS L”

STATEMENT OF WORK

(Oil Removal Solicitation)



10 March 2017

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ABBREVIATIONS

BWT	ballast water tank
CCG	Canadian Coast Guard – Atlantic Region
cm	centimetre
cu.m	cubic metres
DB	double bottom
DNV	Det Norske Veritas
DO	diesel oil
DPRs	daily progress reports
ENGRM	engine room (Resolve tables)
ER	engine room
fwd	forward
FWT	fresh water tank
HFO	heavy fuel oil
HSE	Health, Safety and Environment
ICP	incident command post
ISO	International Standards Organisation
LO	lubricating oil
m	metres
N	north
NL	Newfoundland
OSR	oil spill response
P	port
PSPC	Public Service Procurement Canada
Resolve	Resolve Salvage & Fire
RFP	Request for Proposal
ROV	remote operated vehicle
S	starboard
SCR	Special Casualty Representative
SOW	scope of work
t	tonnes
W	west
WDT	weather down time

SCOPE & OBJECTIVE

On 17th January 1985, the general cargo vessel “MANOLIS L” was on a voyage from Botwood Newfoundland to Quebec loaded with 2,990 tonnes of newsprint. She ran aground and sank in an area known as Blow Hard Rock, Notre Dame Bay, Newfoundland in a water depth of about 70 meters.

At the time of sinking the vessel had approximately 462 tonnes of Bunker C fuel oil (HFO), 60 tonnes of diesel oil (DO) and 22.5 tonnes of lube oil (LO) in various tanks, according to a Transport Canada Report dated April 1985.

For 28 years the wreck lay dormant on the seabed, but in April 2013 oil (Bunker C) was reported on sea birds and on the shoreline in the Change Island area. The Canadian Coast Guard (CCG) conducted an assessment and identified the wreck of “MANOLIS L” as the source of the oil. Subsequent surveys of the wreck identified four areas where oil was being released. Sealing devices were installed on the hull and have proven successful in controlling and containing these releases. However, the presence of oils in the wreck poses a risk to the marine environment. As such, in April 2016, the CCG initiated measures to conduct a detailed assessment of the wreck and its associated risks. The assessment was carried out by Resolve Salvage & Fire (Resolve) between 15th August and 5th September 2016.

Bulk oil was found in two double bottom tanks forward of the engine room, also the engine room space and 3 engine room tanks. Traces of oil were found in 8 additional tanks. A range of oil of between 115 and 150 m³ was estimated as being on board the wreck where access was possible.

CCG requires an experienced contractor to remove the oil from the wreck within the summer weather window of 2018 using proven methods/equipment which can execute the operation in a timely manner and with minimum risk of pollution.

An independent Special Casualty Representative (SCR) from the panel at Lloyds will be contracted to advise CCG on aspects relating to Requests for Proposal (RFPs), bid evaluations and oil recovery operations. It will be necessary for the Contractor to work closely with the SCR and CCG representatives in order for this project to be successful.

The oil recovery operation must commence early July 2018 in order to take full advantage of the summer season while bearing in mind the potentially inclement weather conditions encountered off the NE coast of Newfoundland and Labrador throughout the fall and winter months.

This scope of work (SOW) sets out to provide general particulars of the wreck, the cargo and bunkers/oils on board at the material time of sinking. The location is then briefly described. Thereafter it summarises the assessment operations performed by Resolve and details the findings relevant to the oil recovery operations. Specific technical requirements are then defined which include, but are not limited to, calls for detailed method statements descriptions and specifications of proposed recovery equipment, craft and personnel; proposals for recovered oil storage and de-canting arrangements, details of delivery for disposal & disposal arrangements by approved organisations, pollution control measures throughout and management of the operations. Time estimates are requested and deliverables required from the contractor are listed.

Bid submission details are provided and an explanation is given as to how the proposals will be assessed and evaluated.

BACKGROUND

Environmental Response, Canadian Coast Guard (CCG) – Atlantic Region has been responding to the “MANOLIS L” pollution incident located in the Blow Hard Rocks area since April 2013. The following is a summary of the operations that have been performed on site since the initial oil discovery in the spring of 2013:

April 2013: First reports of oil and oiled birds in Notre Dame Bay. Subsequent survey confirmed wreck of “MANOLIS L” as the source of leakage.

28 May 2013: Neoprene weighted seal successfully placed on the primary leak by CCG and local dive contractor.

June 2013: Follow up survey on neoprene weighted seal. Primary leak is confirmed to be tight. However, a secondary leak is discovered approximately 30m forward on the hull.

July 2013: Cofferdam system successfully installed over secondary leak location and additional follow-up survey performed on hull.

October 2013: Follow-up survey on cofferdam collection system and hull.

November/December 2013: Hunters report oiled birds on nearby Fogo Island.

02 December 2013: Oil sheen reported at wreck location.

Mid December 2013: ROV survey confirmed the cofferdam had moved.

January 2014: Newly designed cofferdam collection system successfully installed.

June/July 2014: 1300 litres of product is recovered from cofferdam. Hull thickness measurements are taken. Minimal diminution found. Full ROV survey performed. All patching efforts found effective.

November 2014: Hull survey identified another crack towards the stern of the hull which had been the source of a small release.

December 2014: 1270 litres of product recovered and cofferdam replaced. Neoprene weighted seals deployed over newly found leak.

May 2015: 595 litres of product recovered and cofferdam replaced. HD hull survey performed.

October 2015: 446 litres of product recovered and cofferdam replaced.

May 2016: 250 litres of product recovered. Small leak found towards stern of the vessel. Weighted seal successfully deployed.

August/September 2016: Assessment of wreck by Resolve. Very minor leak found coming from most recently installed seal in May 2016 which was rectified. 3 ½ litres of oil found in standpipe of cofferdam.

Total oil removed = 3860 litres (approximately)

3 **GENERAL PARTICULARS**

3.1 **"MANOLIS L"**



Figure 1 - "MANOLIS L"

"MANOLIS L" was a general cargo vessel built in 1980, owned by Dunnet Bay Shipping. She flew the Liberian flag and was classed with DNV.

She had the following principle particulars:

Gross Tonnage.....5,453

Deadweight7,790t

Length Overall121.85m

Breadth Moulded.....17.61m

Depth9.910m

Draft (summer)..... 7.724m

The vessel had two holds forward of the engine room, secured by hatch pontoons and served by two derricks per hold. Beneath the cargo hold were sets of double bottom tanks for bunkers and ballast with bunkers stored in the inner tanks and ballast in the outer tanks. The hull was a welded construction strengthened for heavy cargoes.

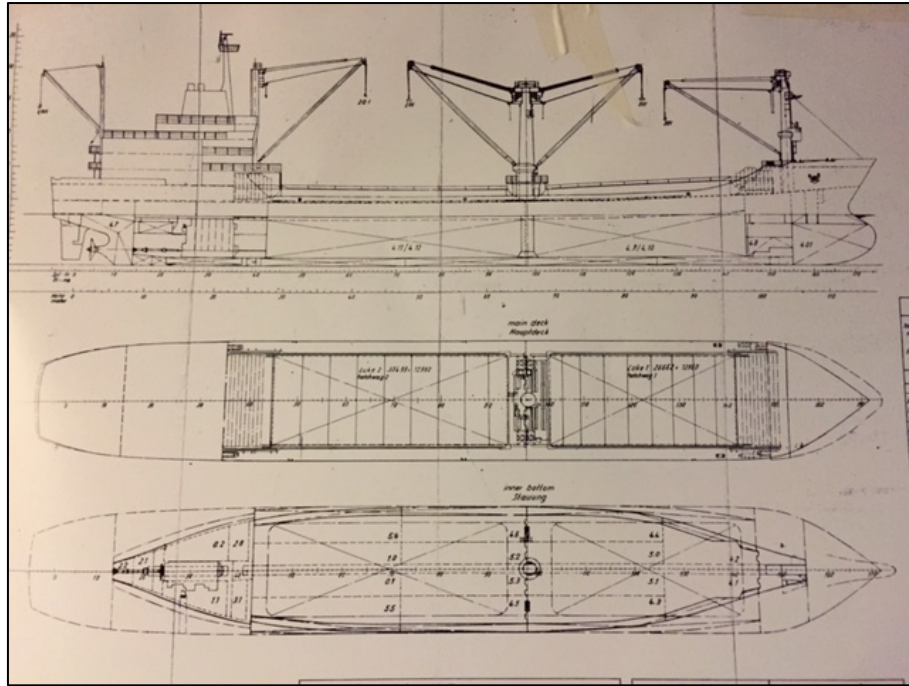


Figure 2 - "MANOLIS L" – Side & Plan Elevation

Propulsion was by a MAN 2 stroke, single acting 6 cylinder diesel engine developing 5,400 horsepower, driving a fixed right handed propeller. The fuel capacity was 114 tonnes distillate fuel and 658 tonnes of residual fuel. Fuel consumption was 23 tonnes per day.

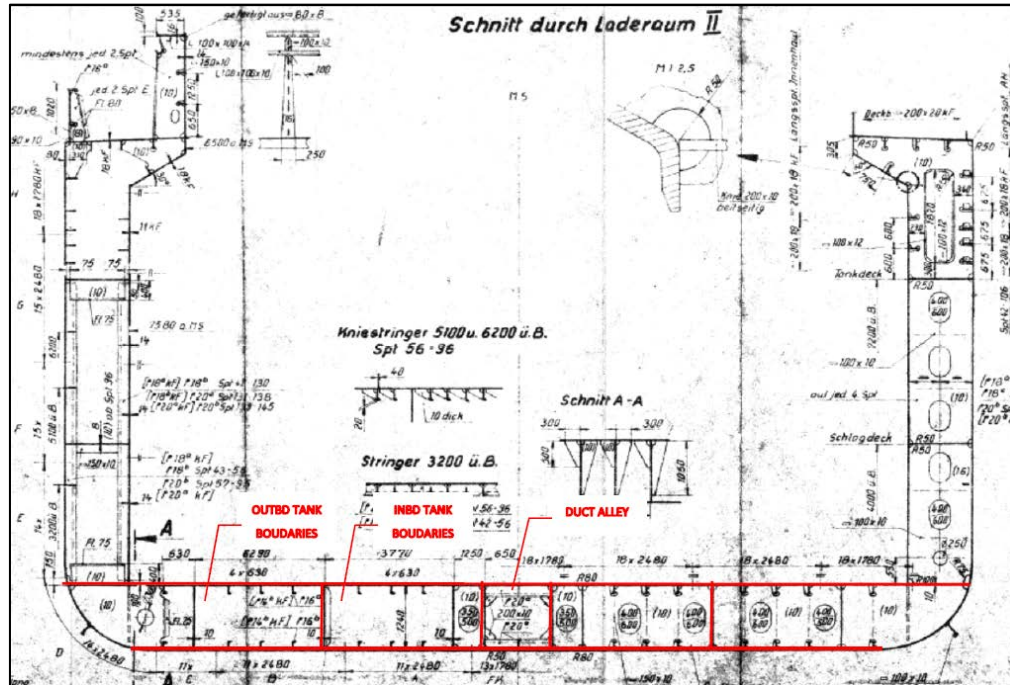


Figure 3 – “MANOLIS L” – Midship Section

3.2 The Wreck Location



Figure 4 - “MANOLIS L” – Sinking

“MANOLIS L” sank in the position now confirmed as 49°40' 47.224"N, 054°31.15.147"W (midships centre line) off Blowhard Rocks in Notre Dame Bay. The vessel went down by the stern and settled on the seabed in an inverted position. The heading is 034°True. The water depth to the hull has been confirmed as 49.7m on the high (west/starboard) side,

50.5m amidships and 51.2m on the low (east/port) side. The depth along the starboard side is about 70-72m and the port side, 62-65m. The seabed composition is mainly bedrock, sand and stone.

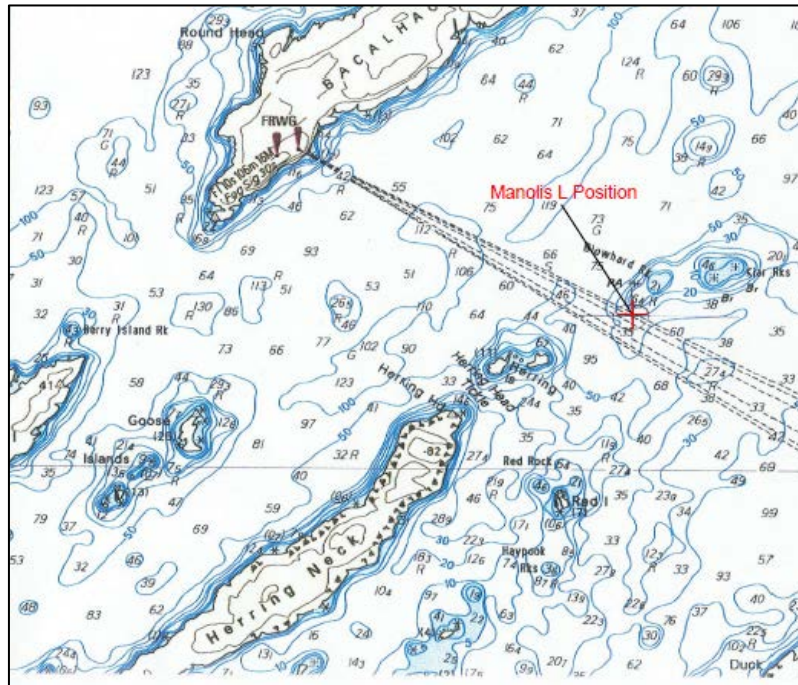
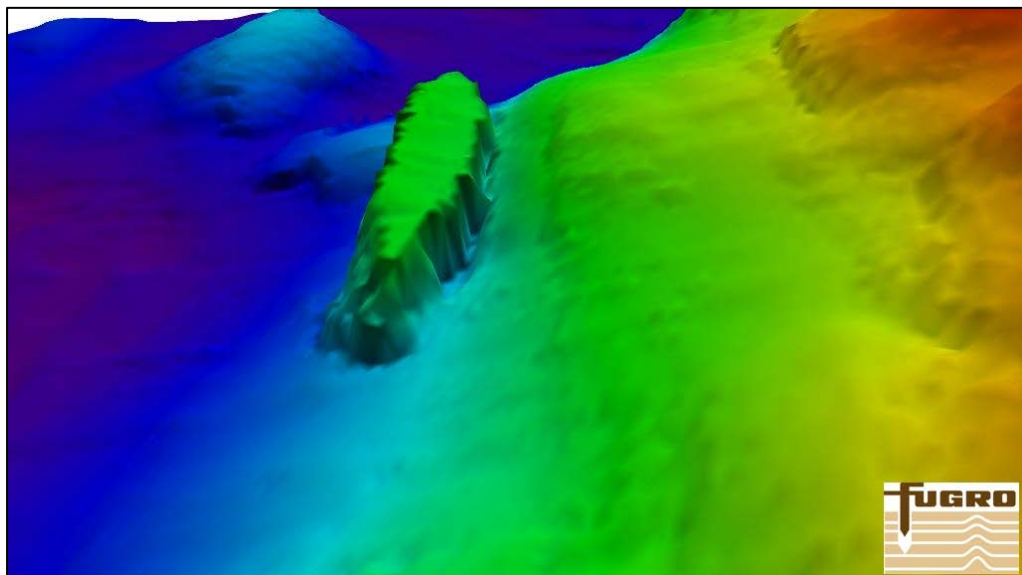


Figure 5 - Sinking Location (Source: Canadian Chart 4862)

The hull of the wreck lies firmly on a gentle sloping seabed to the west (or starboard side) and virtually against a steep slope to the east (port side) as shown in the multi-beam screenshot below.



Current data indicates low current velocity at the bottom of about 1 knot or less (as was experienced during diving and ROV operations during the recent assessment). No movement of the wreck was evident during the assessment or previous surveys.

3.3 The Cargo

(Ref: Transport Canada Report April 1985)

(Ref: Transport Canada Report April 1985)

At The Time of Sinking

At the time of sinking, the bunkers were reported to be:

Heavy Fuel Oil.....462.0 tonnes

Diesel Oil.....60.0 tonnes

(Lube Oil assumed to very similar to departure figure but not stated)

(Ref: Transport Canada Report April 1985)

3.5 Storage of Bunkers

Heavy Fuel Oil

The bunker tanks which might have been in use for heavy fuel oil are listed below

Tank No	Description	Capacity (cu.m)
5.0	Port Inner Double Bottom	72.7
5.1	Starboard Inner Double Bottom	72.7
5.2	Port Inner Double Bottom	67.5
5.3	Starboard Inner Double Bottom	67.5
1.0	Port inner Double Bottom	80.5
5.4	Port Outer Double Bottom	96.8
5.5	Starboard Outer Double Bottom	96.8

Engine Room

Tank No	Description	Capacity (cu.m)
1.1	Overflow Tank Engine Room	32.3
1.2	Daily Service Port	21.0
1.3	Daily Service Starboard	21.0
1.4	Settling Tank Port	28.4
1.5	Settling Tank Starboard	28.4

Diesel Oil

The diesel oil tanks comprised the following:

Tank No	Description	Capacity (cu.m)
0.1	Starboard Inner Double	58.0
0.2	Overflow Tank ER	27.5
0.3	Daily Service/ Settling Tank ER	4.8
0.5	Daily Service/ Settling Tank ER	4.3
0.7	Storage Tank ER	2.6
0.8	Storage Tank ER	0.9
Total		98.1

(Ref: Ship's Capacity Plan)

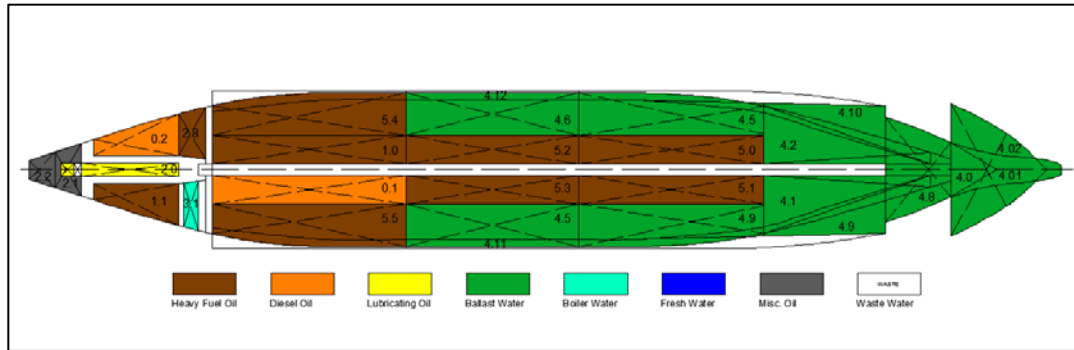


Figure 7 - Colour Coded Tank Plan

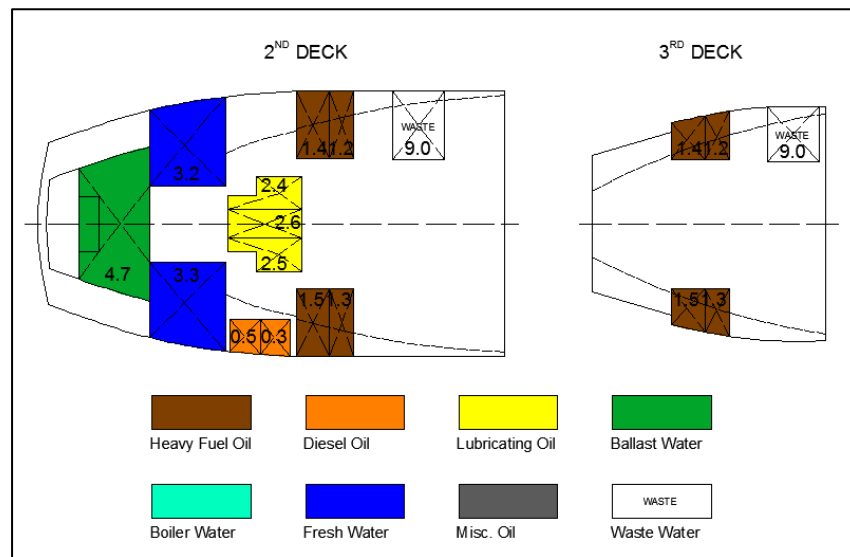


Figure 8 - Extract from Tank Plan Showing Daily Service & Settling Tanks

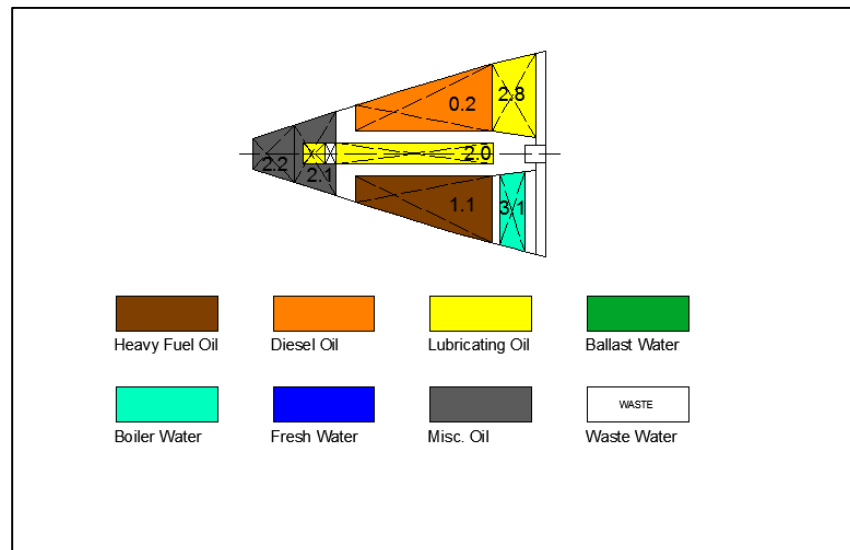


Figure 9 - HFO & DO Overflow Tanks

OIL ASSESSMENT FINDINGS

The following table provides the findings of oil identification by Resolve (see also Resolve Wreck Assessment Report):

Tank Name	Oil Presence
DO 0.1S	<i>Traces found, negligible volume</i>
DO 0.2P	<i>N/A</i>
DO 0.3S	<i>Bulk oil found</i>
DO 0.5S	<i>Bulk oil found</i>
HFO 1.0P	<i>Bulk oil found</i>
HFO 1.1S	<i>Traces found, negligible volume</i>
HFO 1.2P	<i>No oil found</i>
HFO 1.3S	<i>No oil found</i>
HFO 1.4P	<i>Traces found, negligible volume</i>
HFO 1.5S	<i>Bulk oil found</i>
HFO 5.0P	<i>No oil found</i>
HFO 5.1S	<i>No oil found</i>
HFO 5.2P	<i>No oil found</i>
HFO 5.3S	<i>No oil found</i>
HFO 5.4P	<i>Traces found, negligible volume</i>
HFO 5.5S	<i>Bulk oil found</i>
LO 2.0C	<i>No oil found</i>
LO 2.1C	<i>N/A open to the sea</i>
LO 2.2C	<i>N/A open to the sea</i>
LO 2.8P	<i>Traces found, negligible volume</i>
BWT 4.0C	<i>N/A open to the sea</i>
BWT 4.1S	<i>N/A open to the sea</i>
BWT 4.2P	<i>N/A open to the sea</i>
BWT 4.3S	<i>Traces found, negligible volume</i>
BWT 4.4P	<i>No oil found</i>
BWT 4.5S	<i>No oil found</i>
BWT 4.6P	<i>Traces found, negligible volume</i>
FWT 3.1S	<i>Traces found, negligible volume</i>
ENGRM	<i>Bulk oil found</i>

Table 1 - Oil Location Summary - (Source: Resolve Report Table 3-3)

Tank	Total Tank Capacity Cu.M.	Estimated amount: Low to High Range		Notes
DO 0.1S	80	0.5	1	2" Hole drilled, traces found, sample taken, probed w/ negligible results
DO 0.3S	5.6	5	5	2" Hole drilled, oil found, assumed full due to small tank size
DO 0.5S	5	5	5	2" Hole drilled, oil found, assumed full due to small tank size
HFO 1.0P	80.5	60	65	98cm sounding at forward high (inboard) corner of the tank. 75-80% filled
HFO 1.1S	32.3	0.25	0.5	2" Hole drilled, traces found, sample taken, probed w/ negligible results
HFO 1.4P	28.4	0.25	0.5	Traces found
HFO 1.5S	28.4	15	25	2" Hole drilled, oil found, 5/8" hole drilled 1.5m lower.
HFO 5.4P	96.8	0.5	1	5.4fwd, no oil, 5.4aft traces found, sample taken
HFO 5.5S	96.8	10	25	5.5fwd no oil, 5.5aft 35cm sounding, 5.5mid 55cm sounding
LO 2.8P	13.7	0.1	0.5	2" Hole drilled, traces found
BWT 4.3S	91.1	0.5	1	Traces found
BWT 4.6P	97.3	0.5	1	4.6fwd drilled, no oil, 4.6aft drilled, traces found
FWT 3.1S	7.8	0.1	0.5	Traces found
ENGRM 1		15	20	Eng. Room 2 and 1 drilled, 102cm found, air pocket also present
Total		112.7	151	

Figure 10 - Oil Quantity Estimation (Source: Resolve Report Table 3-7)

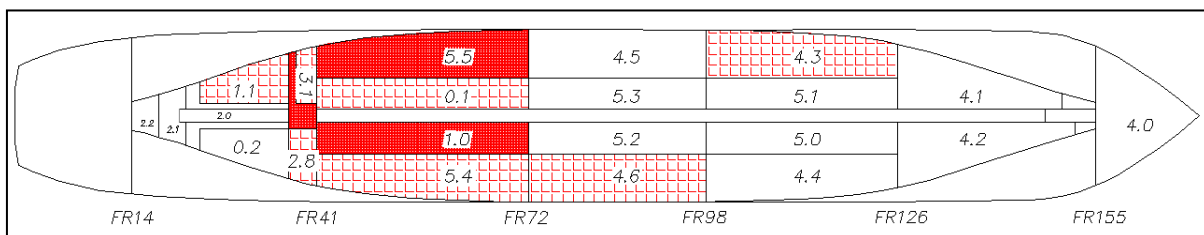


Figure 11 - Oil Location Diagram – (Source – Resolve Report Figure 3-4)

5 **Applicable Documents**

As part of this 'Statement of Work,' a series of supporting documentation is provided to ensure that bidders have all the required information available to develop an appropriate proposal and effective work plan for the oil recovery. The list of supporting documentation is set out below;

- i) Resolve Wreck Assessment Report dated 23rd September 2016
- ii) Appendices to Resolve's report, namely:
 - Appendix A Multibeam Results
 - Appendix B Project Video Footage
 - Appendix C Project Drawings
 - Appendix D GHS Output
 - Appendix E Petroforma Results (Oil Sample Analyses)
- iii) Steel plan longitudinal*
- iv) Steel plan main sections
- v) Tank Plan
- vi) General Arrangement – Plan side
- vii) General Arrangement – Plan decks
- viii) Loading Plan (deadweight scale)**
- ix) Sectional areas (2 off)
- x) Neptune type vessel information
- xi) Transport Canada Investigation Report

**The owners of "MANOLIS L" are no longer in business and the shipyard is part of another group. Further enquiries made of owners of a sister vessel have been made without success.*

***The various drawings obtained for the vessel appear to relate to several different hull numbers and although "MANOLIS L" was one of a large number of similar vessels, it appears from research undertaken that there were slight differences between them. In particular, the fuel tank arrangement and HFO/MDO capacity shown in the Tank Plan, drawing no> 5-485-00.000.60.06 dated 1980 differs from the arrangement shown in the Loading Plan, drawing no> 5-481-00.000.60.12 dated 1977. From this research, it is suggested that the arrangement and capacities shown in the Loading Plan may be more likely to be an accurate reflection of the arrangement on "MANOLIS L".*

6 REQUIREMENTS

6.1 Task/Technical Specifications

An experienced Salvage / off shore contractor is required to conduct an oil removal operation from the wreck of "MANOLIS L" and leave the hull in a tight condition thereafter. The contractor shall heat and pump the six (6) tanks where bulk oil is found first. That will remove a significant percentage of the oil and the risk of pollution will reduce accordingly which is the prime objective. The next operation will be to flush those tanks where a trace of oil has been found. In the case of the bulk oil, the oil will be heated until such time that it can be pumped to the surface into a storage tank(s), either on board the DSV vessel or a separate storage vessel(s). There will be water with the bulk oil as well. A return to the bulk oil tanks will be necessary to allow for settlement and further pumping until the end point is agreed.

After the bulk oil is pumped, the contractor will flush through the tanks where traces of oil were found during the assessment. In this second phase, mainly water will be pumped. There are eight tanks to flush.

After the eight tanks have been flushed and found effectively free of oil traces, the oil recovery operation is effectively completed. The remaining task will be to stand by for 48 hours to see if there are any leaks and deal with them.

Considerations

1. Contractor must take into consideration vessel traffic requirements for the Blow Hard Rock area throughout the duration of oil removal operations. The location is in close proximity to a shipping lane frequented by fishing vessels, tourists, bird hunters and other interested parties and shall remain open during the operation. Although an emergency zone will be implemented, Contractor must identify and recommend the extent of the emergency zone to allow for safe operations at all times.
2. Contractor shall take all reasonable and necessary measures to ensure oil removal operations shall have no, or minimal, impact on the marine environment at every stage. Such measures will be focused on preventing pollution from the wreck and recovery vessel(s). Contractor will be required to patch any leakages which may occur during the heating and recovery operations. CCG will have on site on-water response resources to deal with any spills which may result from the oil removal operations which cause a threat to the marine environment. Close liaison with CCG will be essential throughout operations. Contractor is responsible for the vessel and associated equipment while on site and the charter vessel would be required to have an arrangement with a certified Response Organization under the CSA 2001 regulations (refer to bullet 16). CCG will have onsite response capability for spill response resulting from sub surface oil removal operations from the hull.
3. Blow Hard Rock area is a hostile environment and can be so even during the summer season. Holding ground for anchoring is not good. These factors should be taken into consideration when selecting oil recovery support craft and the storage and transfer of recovered oil.
4. Contractor shall run a self-sufficient operation without requiring CCG or other government departmental resources.
5. Operations will be conducted 7 days a week on a 24 hour basis. Contractor is required to provide sufficient resources to work continuously on a twenty four (24) hour, seven (7) day a week basis throughout and until completion of the project.

6. Contractor will have in mind the significant restrictions with the use of divers and also the associated risk when working in an oil environment. The use of suitably rated and tooled ROVs is the preferred method and needs to have complete onsite redundancy to ensure operational preparedness and ability at all times.
7. Contractor shall prioritise the 6 (six) tanks and spaces where bulk oil has been found in the recovery operations and which represents over 95% of oils identified.
8. The “*end point*” for oil recovery shall be defined as the time that the CCG on board representative through consultation with Incident Commander agrees all possible oil has been recovered as evident from the discharge and tank soundings and no further oil can practically and safely be removed.
9. Contractor will be required to remain on location for a minimum of 48 hours after all oil recovery equipment has been removed and the hull has been sealed tight to allow for final survey by ROV and an aerial survey which will be arranged by CCG. Any oil release observed during the 48 hour period will be investigated, rectified and proved tight before contractor can demobilise from location.
10. Upon contract award, the Contractor shall be required to provide written daily progress reports (DPRs) first thing in the morning which shall include, but not be limited to:
 - i. Description of work accomplished to date.
 - ii. Current status (work in progress – preparations, pumping operations, oil recovered, weather or operational delay day). - Tank reference diagrams with progress of pumping (copies of reference diagrams to be provided to ICP prior to start of operations).
 - iii. Work for next 24 hours – preparations, pumping operations.
 - iv. Progress against projected work schedule.
 - v. Any issues that will have an impact on operations and progress are to be identified on the daily DPR.
11. The Contractor shall be required to obtain, mobilize, maintain on location, demobilize and decontaminate all its resources for the oil recovery operation. Any mooring arrangements for the Contractor's craft at the wreck site must have minimal or

negligible residual environmental impact and must be removed upon the completion of operations

12. The Contractor is required to make provision for 2 (two) CCG representatives and 1 (one) SCR to be accommodated on board the main recovery craft throughout the oil recovery operations and to provide a designated office space apart from contractors operations, if possible for these personnel.
13. In order to monitor the oil recovery operation, the CCG will establish an incident command post (ICP) for on water operations. The Contractor will provide a qualified and experienced Salvage representative to be present at the ICP to be able to interpret information relayed from site and advise ICP staff as required on current and developing operations.

The Contractor's representative may also be required to participate in stakeholder discussions, advise on technical details of the oil recovery operations during the project and participation in media briefings as required.

14. As this project is considered a federal government work site, the bidder will incorporate all applicable Canadian and provincial standards and regulations in their proposal to ensure compliance with the conduct of the work. These include but are not limited to:
 - Canada Coasting Trade Act.
 - Canada Labour Code Part II.
 - Maritime Occupational Health and Safety Regulations.
 - Part 23 of the Occupational Health and Safety Regulations of Newfoundland and Labrador (NL).
 - Applicable Canadian Standards Association Diving Standards if relevant.
15. In the event of a release of oil or other pollutants during the operations, the Contractor shall be required to remain on site and cooperate with the spill response operations and continue with the remaining oil recovery when possible and in accordance with the specified work plan which may have to be amended to suit changed circumstances. Changes to scope of work must have prior approval of the PSPC contracting authority.

16. The Contractor is reminded that pursuant to the Canadian Shipping Act 2001, it is responsible for any pollution occurring during the operation as a result of actions not directly related to the oil recovery operations.
17. Any procedural manuals which will have to be developed as “project specific” following award of the contract must be provided for review at least 2 working weeks prior to commencement of oil recovery operations.
18. The Contractor is reminded that on water operations pertaining to oil pumping and tank flushing operations will be limited to the operational limits of the Pollution Response Equipment assigned for the operation.
19. The Contractor shall make provisions for the storage of 200 m³ of recovered oil plus water to allow for contingency over and above the estimated maximum 150 m³ of oil found during the assessment. Task – Oil Removal & Disposal Operations

Objectives

- i. Remove the bulk oil from DB tanks 1.0; 5.5; ER space; ER tanks 0.3, 0.5, 1.5.
- ii. Flush DB DO tank 0.1S, DB HFO tank 5.4p, DB BWT 4.3S, DB BWT 4.6P, ER tank, 1.1S, ER tank 1.4P, LO tank space 2.8P FWT 3.1S.

Deliverables

Requirements

Contractor will provide the following within 21 calendar days upon completion of the assessment:

- 1) A detailed written report of the oil removal operation including: methodology, processes utilized (oil recovery, heating and pumping procedures, start and stop procedures, blanking arrangements, tank pumping sequence, monitoring/measuring recovered oil during recovery and/or transfer operations

etc.) oil discharge and disposal processes; scheduling timeline - actual vs planned; identification of areas of potential leakage; any other observations deemed relevant.

- 2) Sketches & plans illustrating operations to be included in above report or appended to same.
- 3) Video footage of Oil Removal Operations in high definition and edited with voice over throughout.