

# OPERATION GULFSTREAM 2024

A Case Study

Tobago, The Republic of Trinidad and Tobago

Josh Clifford

Vice President, Emergency Response

QT Environmental, Inc.

[JoshC@QTEnv.com](mailto:JoshC@QTEnv.com)



# OPERATION GULFSTREAM 2024

## A Case Study

### CONFIDENTIALITY NOTICE

The information contained within this document may be legally privileged or confidential information intended only for the use of the individual(s) and/or company/companies named above. If you are not the intended recipient, you are notified that any dissemination, distribution, or copying of this document and its attachments are strictly prohibited. If you have received this document in error, please contact, [legal@QTEnv.com](mailto:legal@QTEnv.com) immediately and destroy the document and its attachments.

### LEGAL DISCLAIMER

Work contained within was completed for an entity or entities for a fee and reflect the work provided by QT Environmental, Inc. However, the work or works may no longer be owned by QT Environmental, Inc.

Some of the logo's used within this distribution are not the property of QT Environmental, Inc. and are used for informational purposes only.

Distribution of this material is strictly prohibited without written approval as it may be a breach of copyright and licensing.



# PRESENTATION

## OVERVIEW

### Today's Journey

- **Incident Background**
  - Vessel(s)
  - Voyage
  - Oil Spill
  - Satellite Imagery
  - Hydrographic Survey
  - Dive Survey
- **At Sea Response**
  - What did not go well
  - Corrective Action
- **Investigation Background**
  - Challenges without a Responsible Party
  - Global Support
- **Salvage Operations**
  - Naval Architect role
  - Local Contractor Support
  - De-Inventory / Lightering Operations
  - Refloat and Tow
- **Lessons Learned**



# OPERATION GULFSTREAM

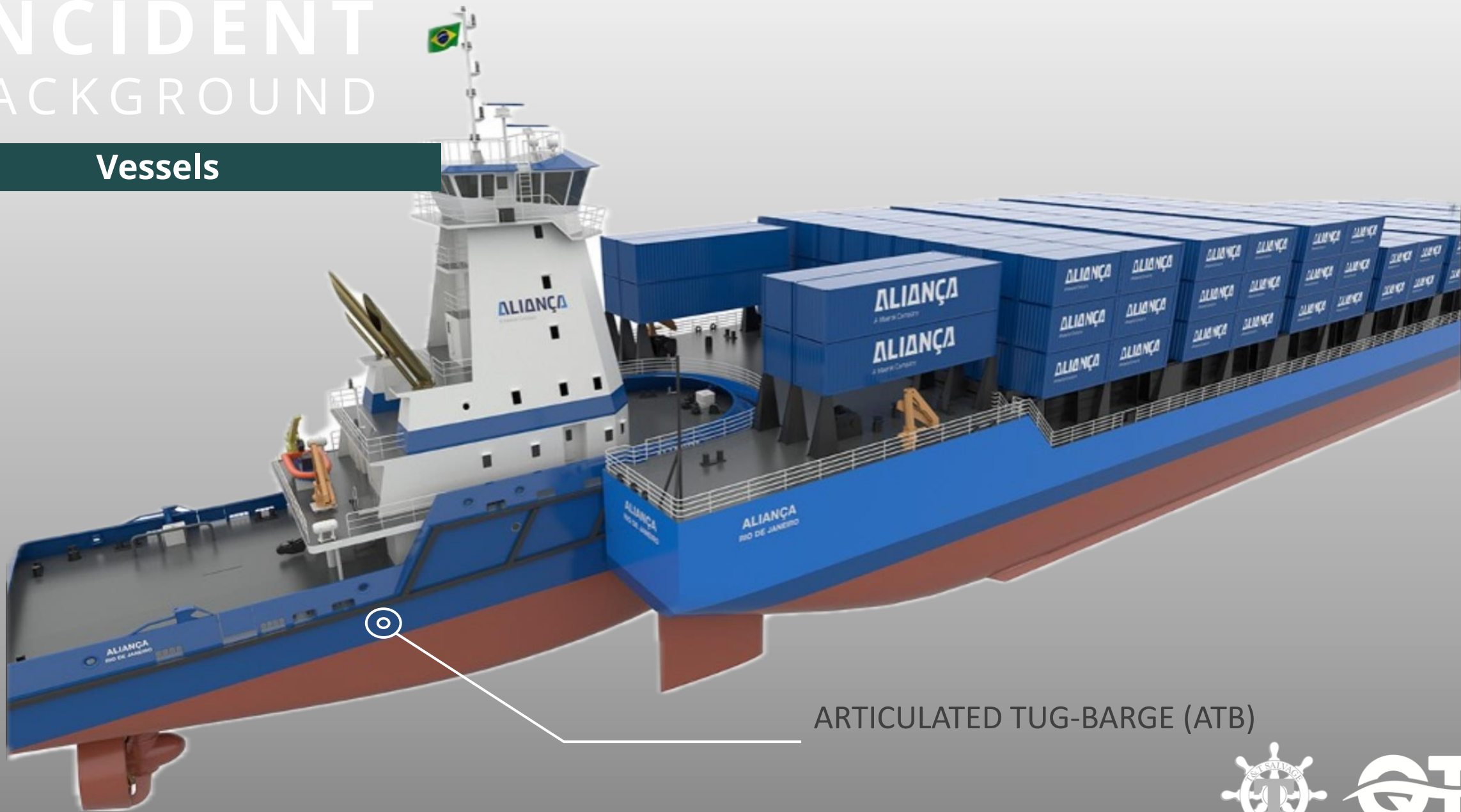
## INCIDENT BACKGROUND

- VESSEL(S)
- VOYAGE
- OIL SPILL
- SATELITE IMAGERY
- SURVEY



# INCIDENT BACKGROUND

## Vessels



ARTICULATED TUG-BARGE (ATB)



# INCIDENT BACKGROUND

## Vessels

Barge: **GULFSTREAM** (formerly **SEA MARLIN**)

Built: **1976** - Kelso Marine - Galveston, Texas

Capacity: **~60,000 bbls (~9,500 MT)**

Length Overall: **449'** (~136 meters)

Beam: **56'** (~17 meters)

Depth: **25' 9"** (~8 meters)



Tug: **SOLO CREED**



# INCIDENT BACKGROUND

## Vessels

BUILT IN 1976...48 Years Ago...  
Typical lifecycle of service for an ATB = 30 years...  
 $48 - 30 = 20$  year  
...must be a well-maintained asset???

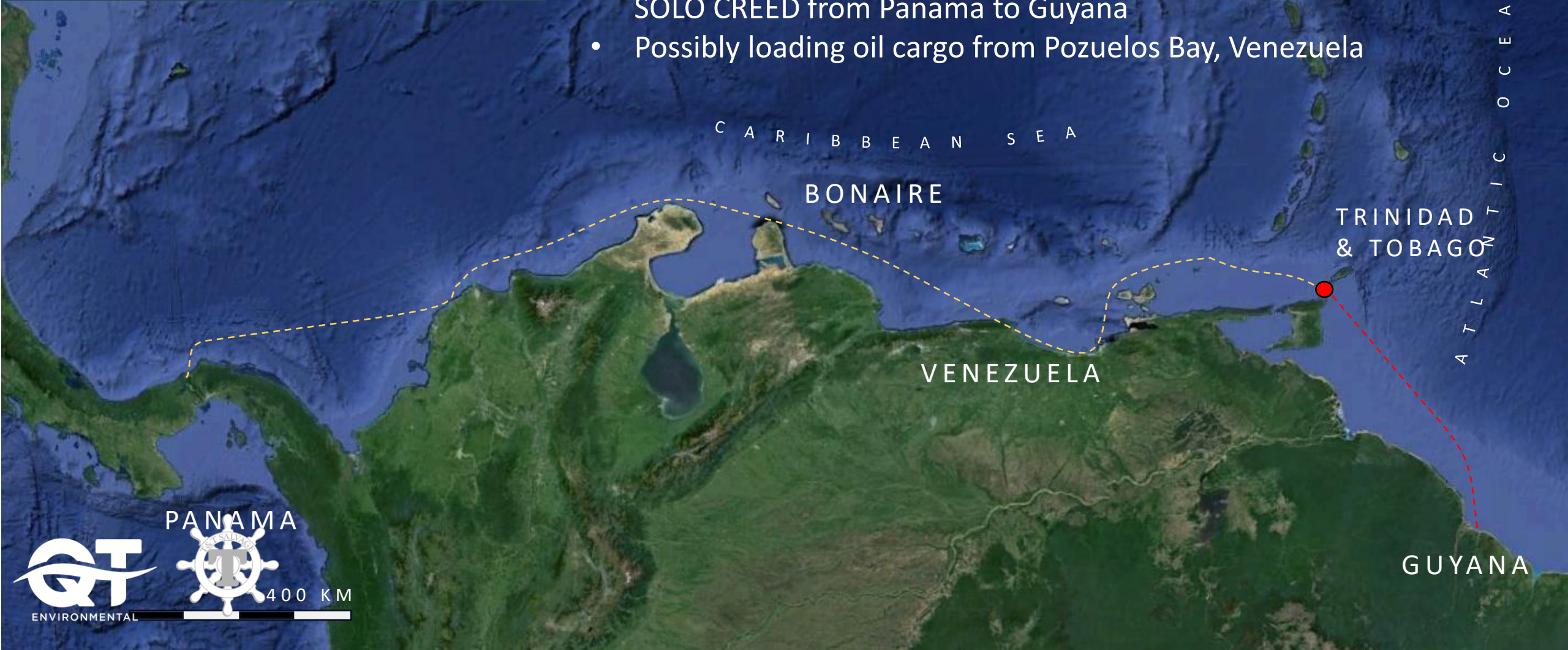


# INCIDENT BACKGROUND



## Voyage

- Tanker barge **GULFSTREAM**, towed by a tugboat identified as SOLO CREED from Panama to Guyana
- Possibly loading oil cargo from Pozuelos Bay, Venezuela



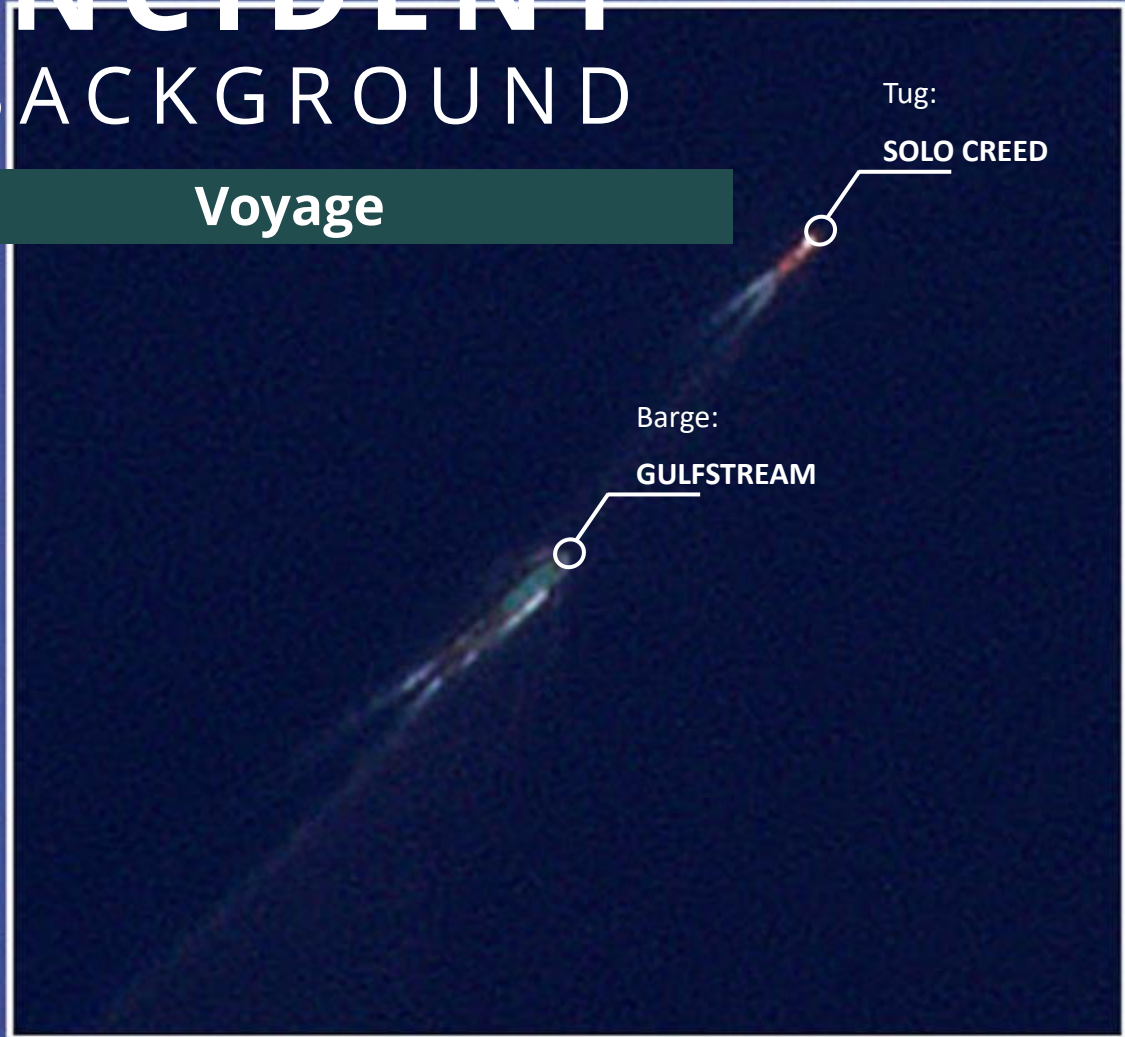
PANAMA

400 KM



# INCIDENT BACKGROUND

## Voyage



February 02, 2024  
40KM (21.5 nautical miles)  
long Slick NEAR Pozeulos  
Bay, VENEZUELA



# INCIDENT BACKGROUND

## Voyage

DEPARTED FROM  
PANAMA, A SIGNING  
MEMBER OF THE IOPC

MANIFEST, Etc. MUST  
HAVE BEEN FILED...



# INCIDENT BACKGROUND

## Voyage

Assumption: VESSEL  
RESPONSE PLAN SHOULD  
BE A GUIDING  
DOCUMENT

Assumption:  
SEASONED CAPTAIN and  
COMPETENT CREW

**CAPACITY: 60,000 BBL**  
(2,520,000 US Gallons)  
(9,500 MT)



# INCIDENT BACKGROUND

## Voyage

UNDOCUMENTED  
'ROGUE VESSEL'

**WHAT IS THE CARGO?**

INSURED?

**WHO IS TAKING  
RESPONSIBILITY?**



# INCIDENT BACKGROUND

## Voyage

WHAT COULD POSSIBLY  
GO WRONG???

OUT OF SIGHT, OUT OF  
MIND...

BUILT IN 1976  
MODIFIED COUNTLESS TIMES –  
DRAWINGS CONFLICT EACHOTHER



# INCIDENT BACKGROUND

Oil Spill

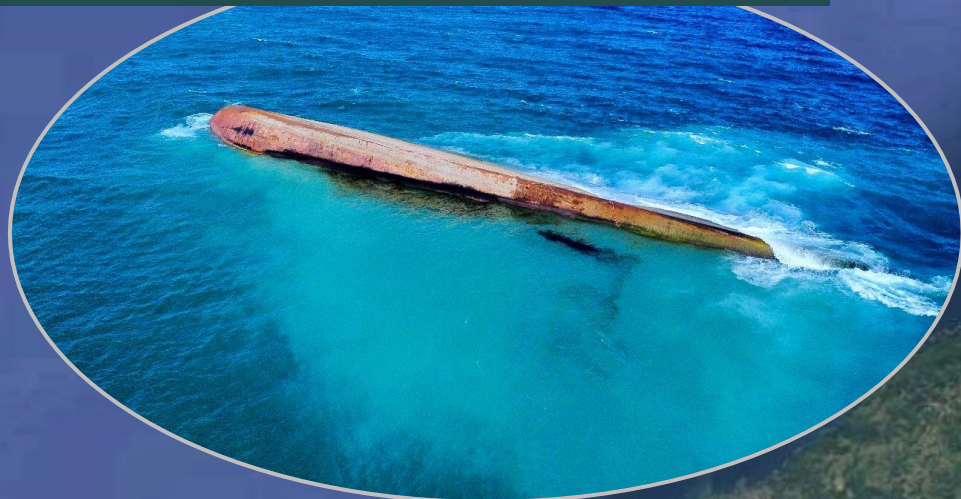
Wreck site  
TOBAGO, TRINIDAD AND TOBAGO  
FEBRUARY 07, 2024



# INCIDENT BACKGROUND



## Oil Spill



- The barge capsized off the coast of Tobago on 6<sup>th</sup> February 2024
- Grounded south of the island on 7<sup>th</sup> February
- Unconfirmed volume of oil spilled
- Remaining cargo, unknown

## TOBAGO



# INCIDENT BACKGROUND



## Oil Spill

WRECK SITE

TOBAGO, TRINIDAD AND TOBAGO

FEBRUARY 07, 2024



# INCIDENT BACKGROUND

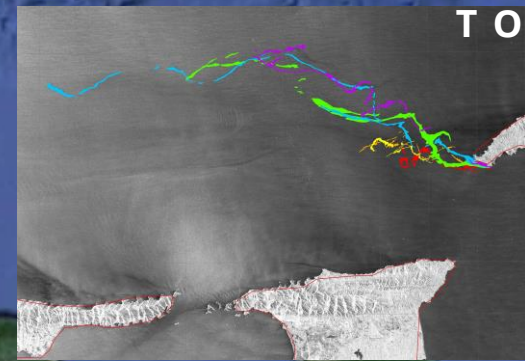


## Satellite Imagery

BONAIRE



TOBAGO



- 11 Feb 2024
- 12 Feb 2024
- 13 Feb 2024
- 14 Feb 2024 AM
- 14 Feb 2024 PM
- 15 Feb 2024

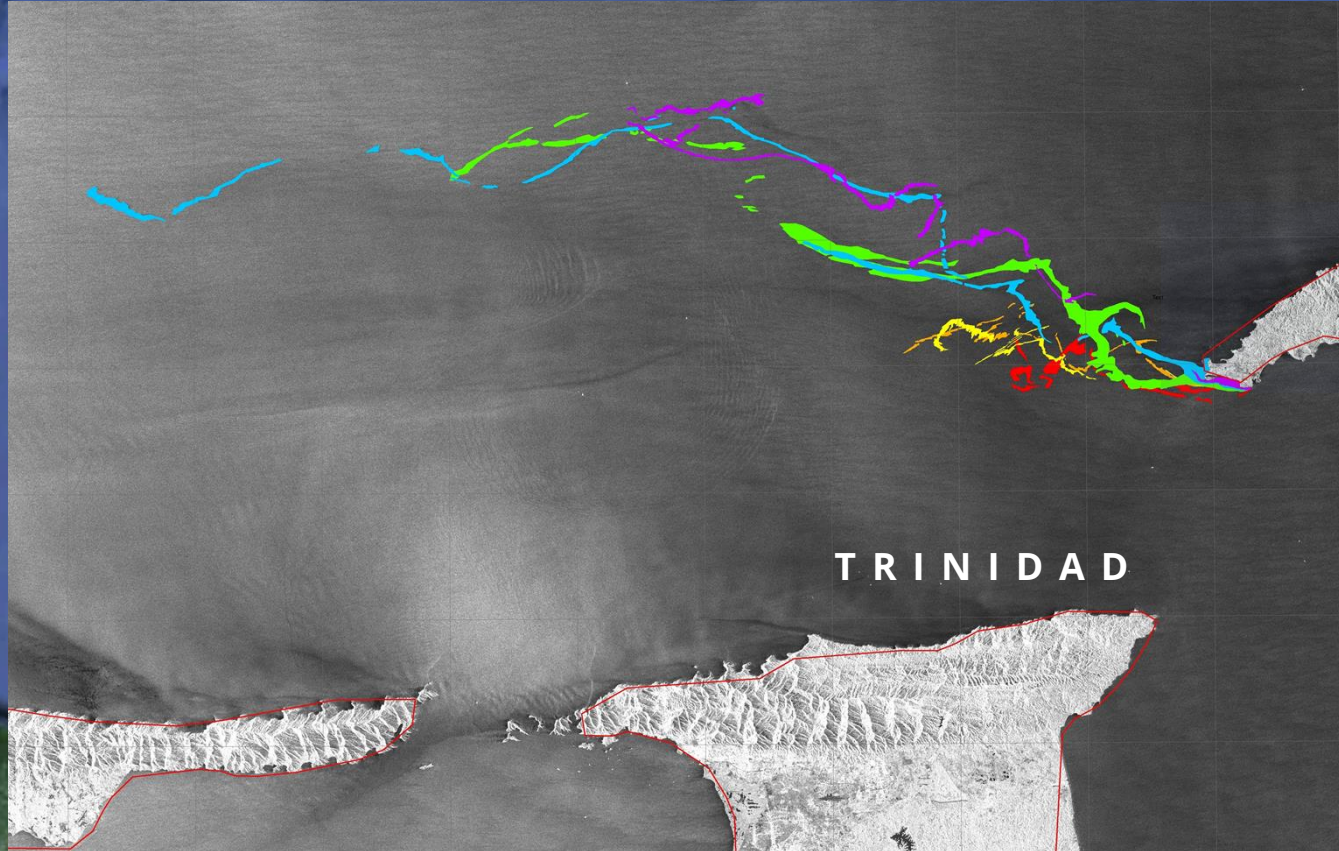
150 KM



# INCIDENT BACKGROUND



## Satellite Imagery



TOBAGO

TRINIDAD

- 11 Feb 2024
- 12 Feb 2024
- 13 Feb 2024
- 14 Feb 2024 AM
- 14 Feb 2024 PM
- 15 Feb 2024

# INCIDENT BACKGROUND

## Oil Spill



LAMBEAU/ LOWLANDS  
TOBAGO, TRINIDAD AND TOBAGO  
FEBRUARY 07, 2024

# INCIDENT BACKGROUND

## Oil Spill

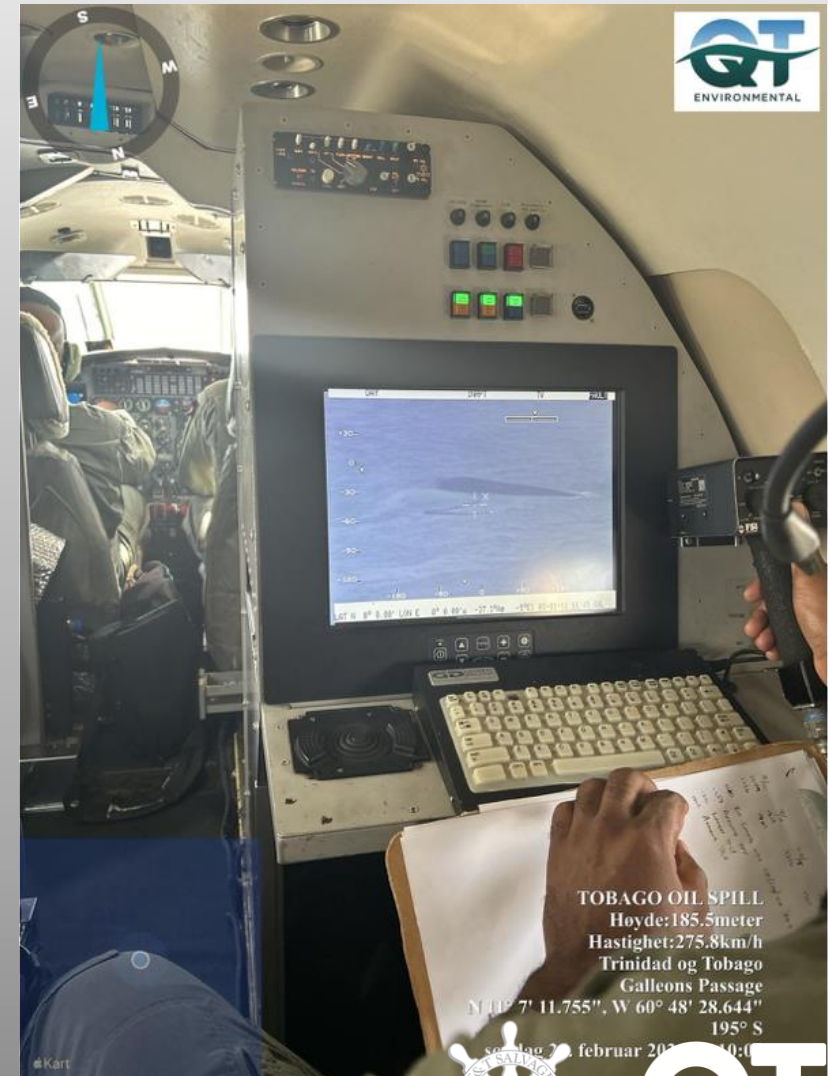
LAMBEAU/ LOWLANDS  
TOBAGO, TRINIDAD AND TOBAGO  
FEBRUARY 07, 2024



# INCIDENT BACKGROUND

## Initial Survey

- INITIAL LANDSIDE OBSERVATION PERFORMED FEBRUARY 20TH AND FEBRUARY 21ST
- SALVAGE MASTER SURVEY BY SMALL BOAT FEBRUARY 23RD
- FIRST OVERFLIGHT - FIXED WING AIRCRAFT FEBRUARY 24TH
- INITIAL HYDROGRAPHIC SURVEY FEBRUARY 26TH
- TOPSIDE SALVAGE MASTER AND LIDAR SURVEY FEBRUARY 27
- SECOND OVERFLIGHT - FIXED WING AIRCRAFT FEBRUARY 29TH
- DIVE SURVEYS MARCH 2ND AND MARCH 3RD
- SALVAGE MASTER AND NAVAL ARCHITECT TOPSIDE SURVEY MARCH 5TH



# INCIDENT BACKGROUND

## Hydrographic Survey

SEA STATE DID  
NOT ALLOW  
CLEAN SCAN

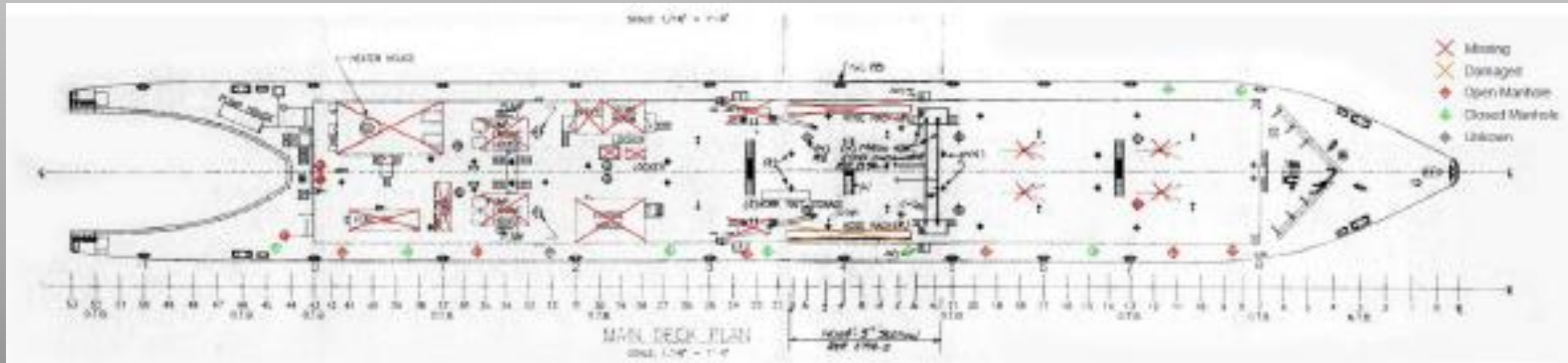
OIL  
CONTAINMENT  
BOOM



# OPERATION GULFSTREAM 2024

## SALVAGE OPERATIONS

### Dive Survey



# OIL SPILL RESPONSE

## OPERATIONS

- WHAT DID NOT GO WELL
  - CORRECTIVE ACTION





# INCIDENT BACKGROUND

At Sea Response Issues



# INCIDENT BACKGROUND

## At Sea Response Issues

ENTRAINMENT  
AT APEX

ENTRAINMENT  
AT SWATH



# INCIDENT BACKGROUND

At Sea Response Issues



# AT SEA RESPONSE ISSUES

↑ WAVE & CURRENT ENERGY  
↓ BOOM EFFECTIVENESS

STRANDED  
DEFLECTION  
BOOM

POORLY  
MAINTAINED  
RIVER BOOM



# CONSIDERATIONS DEVELOPING A PLAN TO RESPOND EFFECTIVELY

MUST BE EFFECTIVE

MUST BE SAFE AND  
QUICK TO DEPLOY

EASE OF USE TO TRAIN  
LOCAL CONTRACTORS

SMALL PACKAGES TO  
BE UTILIZED WITH  
LOCAL VESSELS OF  
OPPORTUNITY  
(VOO'S)

MUST HAVE HIGH OIL  
RECOVERY RATES AS  
WASTE MANAGEMENT  
IS CERTAIN TO BE AN  
ISSUE

# AT SEA RESPONSE





ENVIRONMENTAL



# TOBAGO OIL SPILL TIER 3 RESPONSE PLAN



# NOFI CURRENT BUSTER TECHNOLOGY

TASK FORCE I  
NEAR SHORE



TASK FORCE II  
OFFSHORE / CARICOM

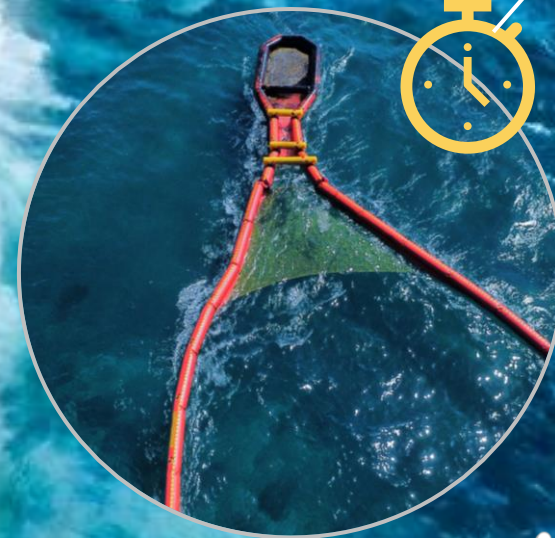


STANDBY / REDUNDANCY



# AT SEA RESPONSE

15 MINUTE  
DEPLOYMENT





# WHY NOT OTHER HIGH SPEED SYSTEMS???

SLOWER RATE OF  
ENCOUNTER, LESS  
EFFECTIVE

NOT TIMELY TO DEPLOY

COMPLICATED TO DEPLOY

LARGE PACKAGES,  
REQUIRE OFFSHORE  
CRANE, LIMITS  
VESSELS OF  
OPPORTUNITY  
(VOO'S)

NO ONBOARD STORAGE  
- REQUIRES  
CONTINUOUS,  
PUMPING/SKIMMING -  
LEADS TO MORE WATER  
THAN OIL RECOVERY

# AT SEA RESPONSE



# OPERATION GULFSTREAM 2024

## OIL SPILL

**Nearshore  
Two Vessel Configuration**



# OPERATION GULFSTREAM 2024 OIL SPILL

**Nearshore  
Two Vessel Configuration**



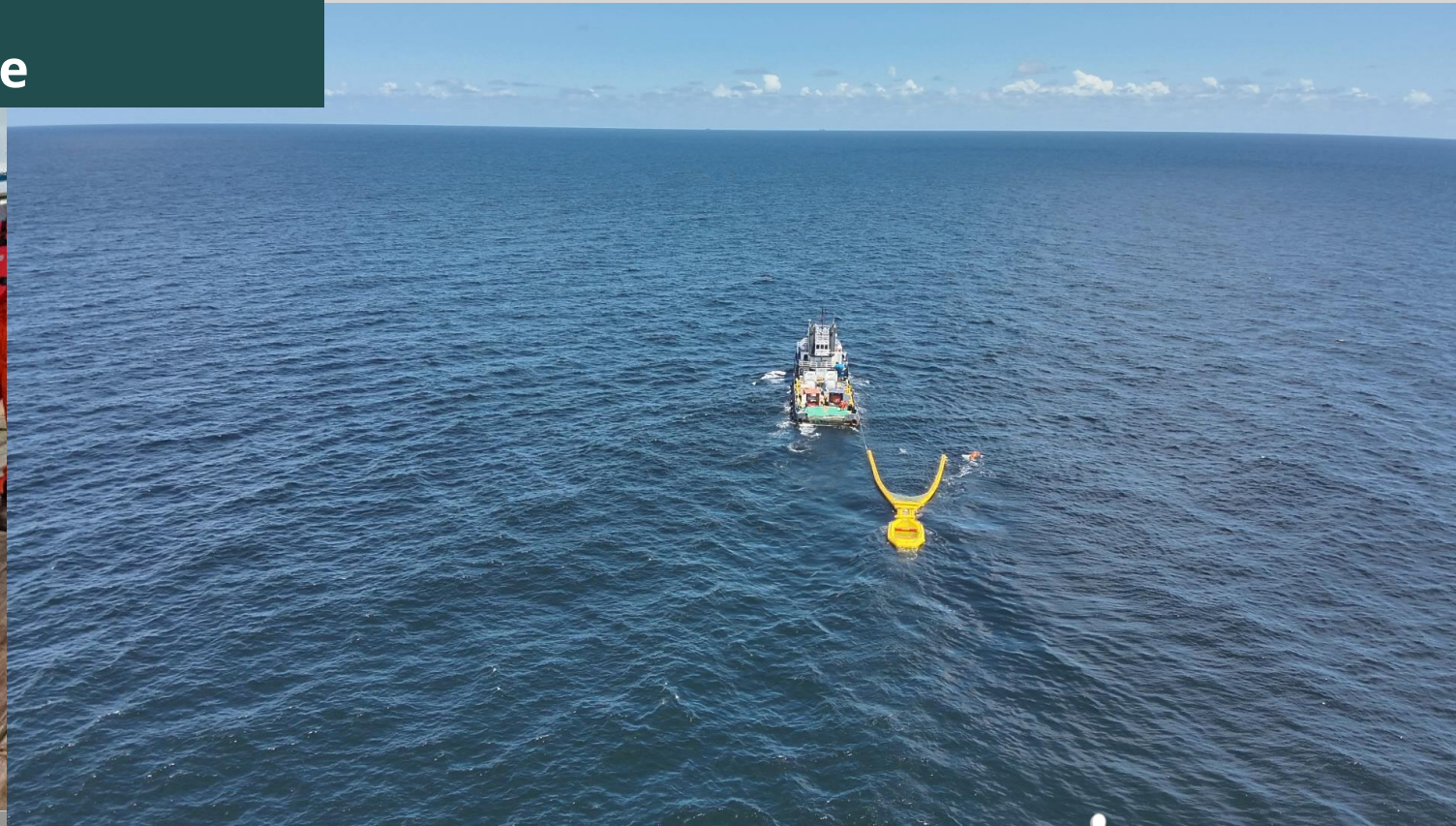
# OPERATION GULFSTREAM 2024 OIL SPILL

## Nearshore Two Vessel Configuration



# OPERATION GULFSTREAM 2024 OIL SPILL

**Offshore  
Single Vessel Configuration  
Utilizing NOFI INAK Paravane**



# OPERATION GULFSTREAM 2024 OIL SPILL

## NOFI Current Buster Separator





# INVESTIGATIVE BACKGROUND OPERATIONS

- CHALLENGES WITHOUT A RESPONSIBLE PARTY
  - APPROACH
  - GLOBAL SUPPORT



# INVESTIGATION

## BACKGROUND

### An Oil Spill on the Tobago Coast

## Third Party Support???

Investigative Technology Team. He also has a background in cartography, data visualisation and optics.



**Thomas Bordeaux**  
Thomas Bordeaux is a graduate student at Georgia Tech's School of Architecture with interests in the intersection of open source research and 3D modeling.



**Ethan Doyle**  
Ethan is a marine engineer from Canada who has spent time in the marine and offshore environment as well as dry docks.



**Lotte van de Waal**

shed light on how a stranded barge at the coast and leaking oil off the Tobago coast.

Bellingcat tracked the vessel, and the tugboat Trinidad and Tobago authorities identified as its seafaring engine, along an ill-fated, five-week journey using satellite imagery and Automatic Identification System location (AIS) data. Included on the trip was a visit to Pozuelo's Bay, Venezuela while the vessel had gone dark by turning off its AIS transmissions, as first reported by [Tanker Trackers](#), an independent service which tracks oil shipments around the world.

Pozuelo's Bay is the site of a major port for the state-owned Petróleos de Venezuela (PDVSA) and is also used by PDVSA for [ship-to-ship oil transfers](#). Imagery discovered by Bellingcat shows that the barge began leaking oil as early as February 3, immediately after leaving Pozuelo's Bay, and that it appears to have capsized by the morning of February 6.

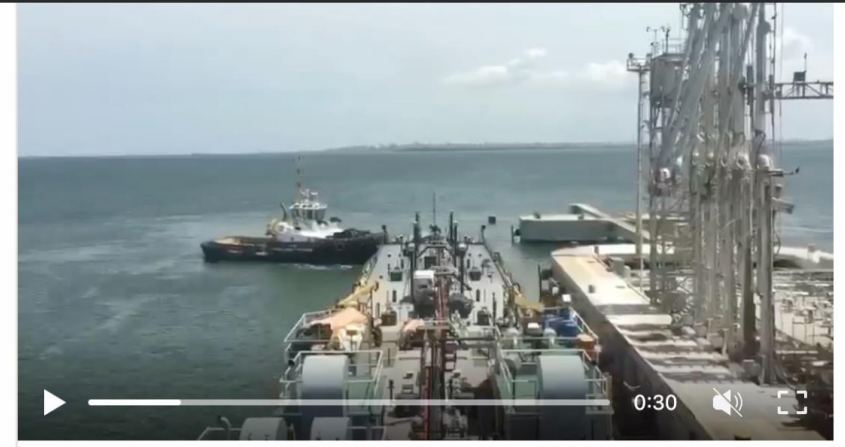
Tobago authorities have [called](#) on those responsible for the barge to come forward and face accountability. As of late last week, the oil slick resulting from the spill extended some 90 miles into the Caribbean.

Bellingcat previously [identified](#) the barge, which ran aground off the island's coast earlier this month, as the Gulfstream, formerly affiliated with a tugboat called the Marlin. One crucial newly discovered piece of information, gleaned from Google Street View, is that the Gulfstream was quietly rechristened sometime before 2018. Its new name: the Sea Marlin.

### Tracking the Barge's Journey to Tobago

According to Trinidad and Tobago authorities, the Gulfstream was [towed](#) by a tugboat named the Solo Creed, on a journey that was bound for Guyana from Panama before it became stranded off the coast of the Caribbean nation. Using AIS data and satellite imagery, Bellingcat was able to follow the Solo Creed and Gulfstream on almost every day of their doomed voyage.

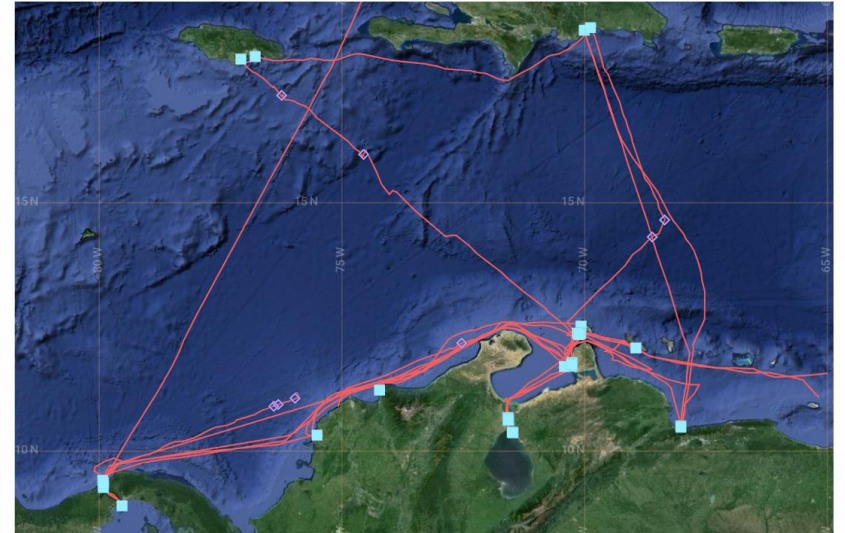
In early 2023, satellite imagery showed the Gulfstream docked in the city of Colón, Panama, near the Atlantic entrance to the Panama Canal. In June 2023, imagery from Planet Labs shows that the Gulfstream was moved from a pier known as Muelle 3 to an informal harbour just to the south, where it was laid up along a beach until the Solo Creed joined it and began the trip to Tobago. (For ease of understanding, we are referring to the Gulfstream by its longtime former name, as opposed to the Sea Marlin.)



Screen capture of a video posted by Sea Energy Group, showing the Gulfstream after it was rechristened the Sea Marlin.

Bellingcat geolocated this video to the PDVSA Puerto Miranda Terminal in Maracaibo, Venezuela. While the video was posted on October 19, 2018, satellite imagery shows that it was filmed earlier, possibly around 2016 to 2017, when the vessel was frequently docked at this pier.

During its time owned by Sea Energy Group, the Tug Marlin consistently transmitted AIS location information, showing it frequently visited PDVSA ports in Maracaibo and Amuay.



AIS data transmitted by the Tug Marlin during its previous ownership, plotted on a satellite view. Data and map from Global Fishing Watch.

# INVESTIGATIVE BACKGROUND

Call in the expert support

U.S. Department of  
Homeland Security

United States  
Coast Guard



# SERT

Salvage Engineering Response Team



# SALVAGE RESPONSE OPERATIONS

- NAVAL ARCHITECT ROLE
- LOCAL CONTRACTOR SUPPORT
- DE-INVENTORY / LIGHTERING OPERATIONS
  - REFLOAT AND TOW



# SALVAGE RESPONSE SEQUENCE

**Awareness or Notification**

**Contracting or Activation**

**Remote Assessment**

**Mobilization of Advance Team**

**Onsite Assessments & Stabilization**

**Cascading of personnel & equipment**

**Engineering**

**Planning**

**Executing the plan with onsite operations**

**Ongoing logistics and operational support**

**Demobilization**

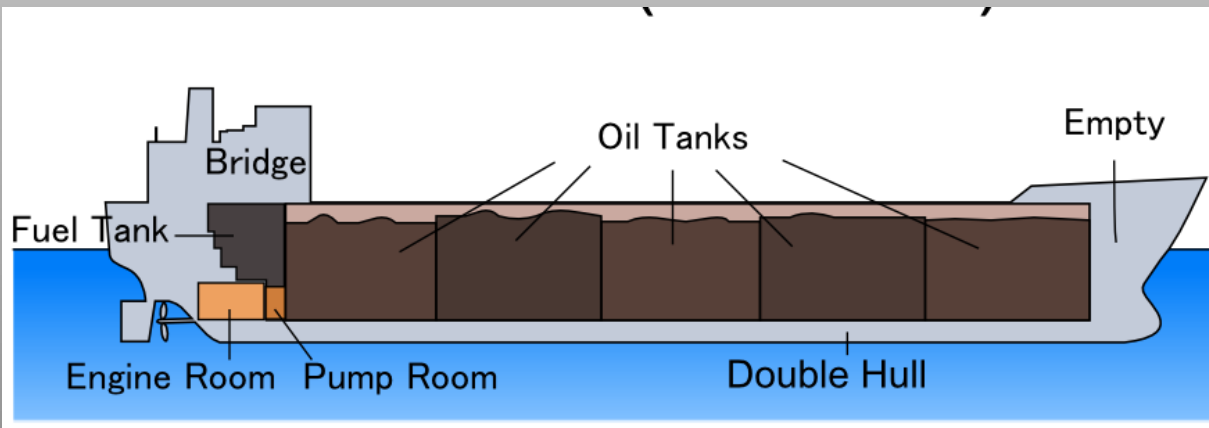


# OPERATION GULFSTREAM 2024

## SALVAGE OPERATIONS

### WHAT IS MARINE SALVAGE

“Salvage services means any act or activity undertaken to assist a **vessel** or **property** in danger in whatever waters the act or activity takes place.” International Salvage Convention 1989

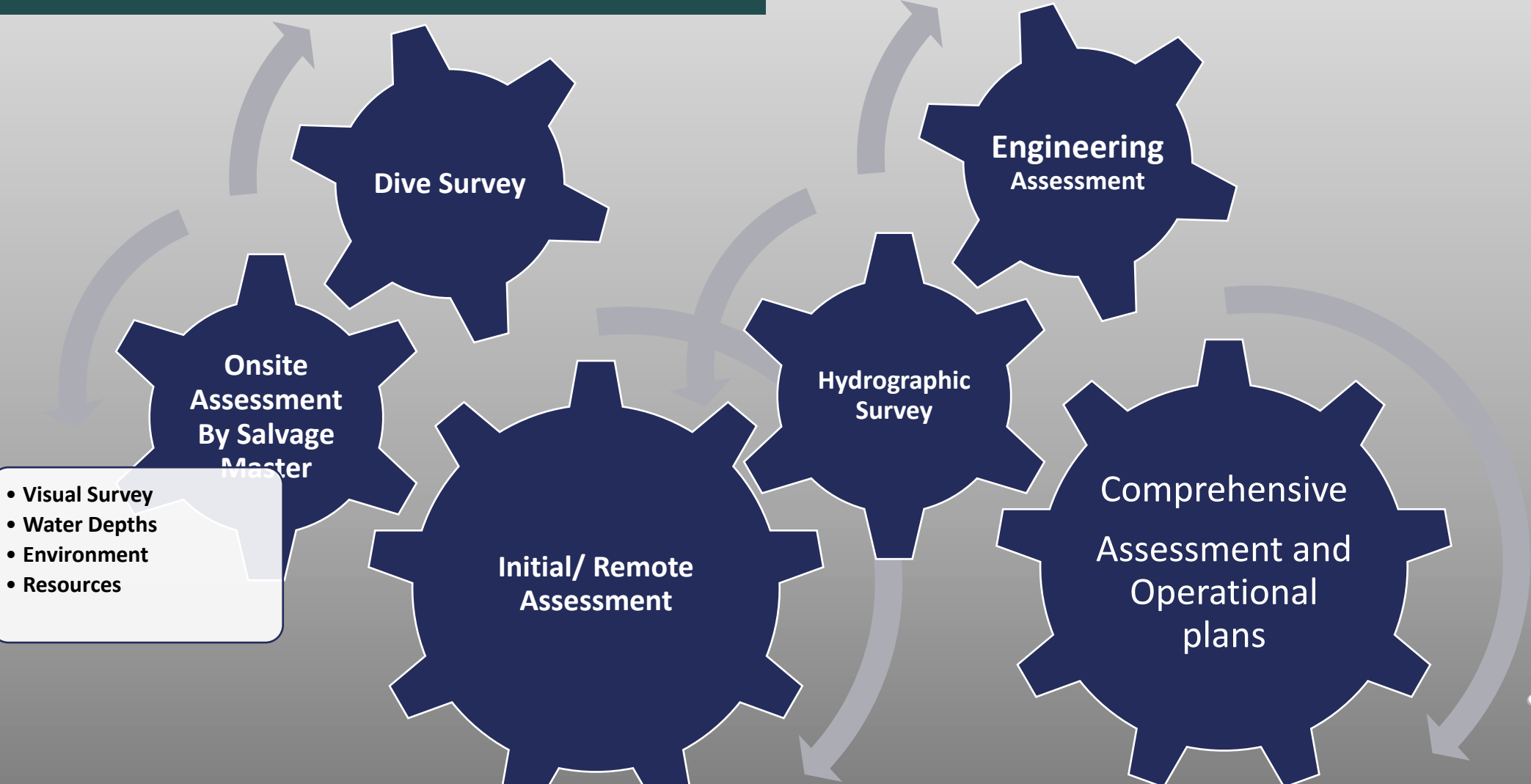


- Salvage is Environmental Protection
- Keep the Oil in the Ship
- Remove it before it Leaks

# OPERATION GULFSTREAM 2024

## SALVAGE OPERATIONS

### IMPORTANCE OF ASSESSMENTS



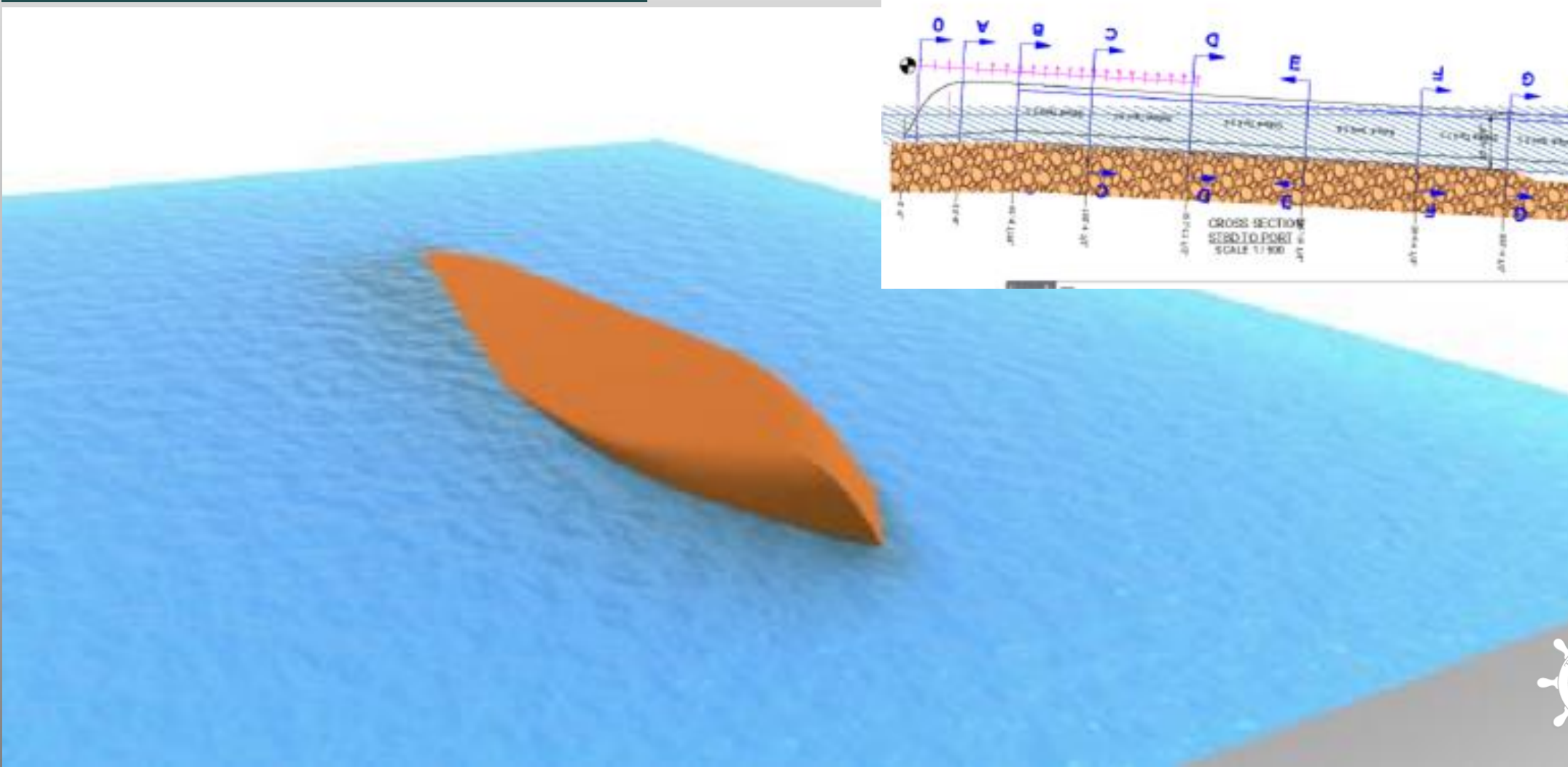
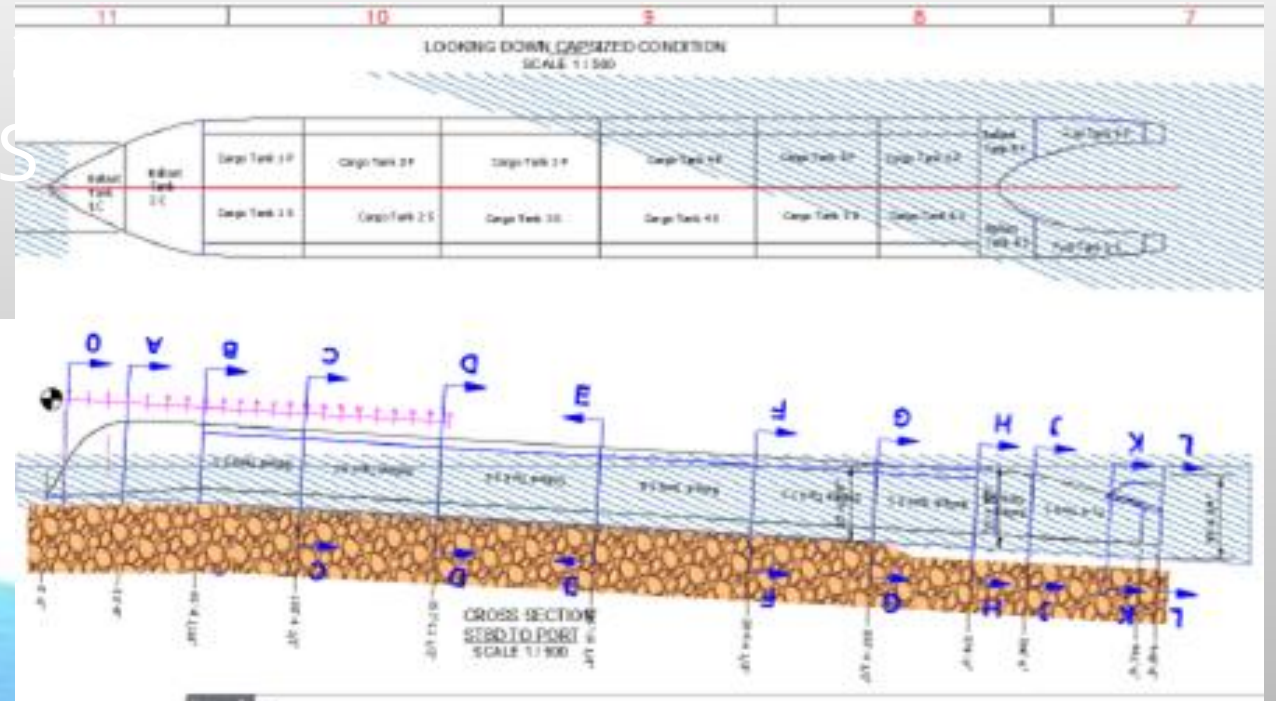
# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

Where is the Topside?



# OPERATION GULFSTREAM SALVAGE OPERATIONS

What does this mean?





# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

## INSTAGRAM VERSUS REALITY



JOSHUA JAMES RC



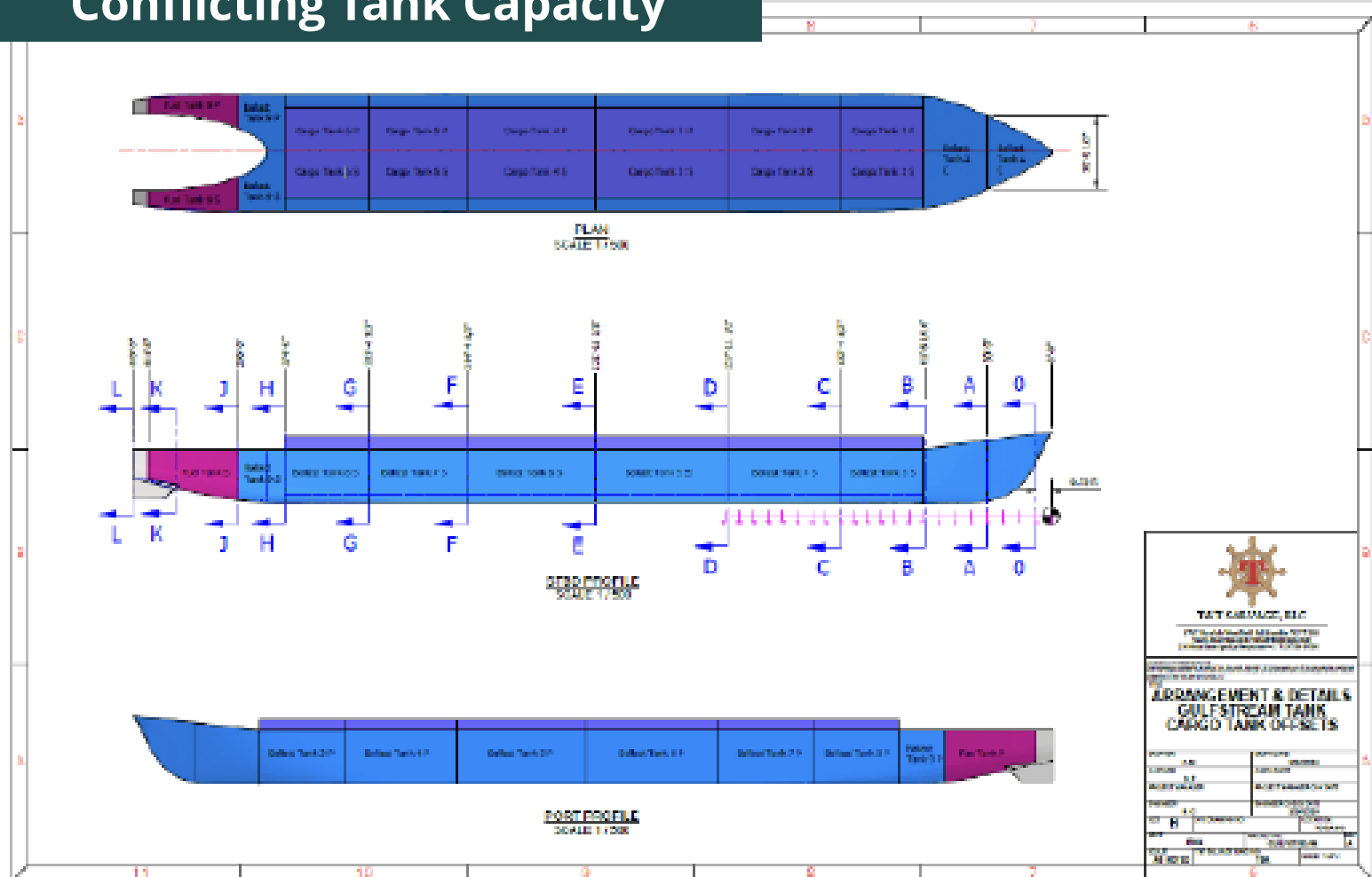
# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

Reality check..



# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

## Conflicting Tank Capacity



Identification of Ship's Tanks	Capacity
1P) Cargo Tank	4348.54 Bbls
1S) Cargo Tank	4354.28 Bbls
2P) Cargo Tank	6065.39 Bbls
3S) Cargo Tank	6027.19 Bbls
3P) Cargo Tank	6939.69 Bbls
3S) Cargo Tank	6935.15 Bbls
4P) Cargo Tank	6814.40 Bbls
4S) Cargo Tank	6811.23 Bbls
5P) Cargo Tank	5258.17 Bbls
5S) Cargo Tank	5254.05 Bbls
6P) Cargo Tank	4424.94 Bbls
6S) Cargo Tank	4412.31 Bbls

MISC. TANKS CAPACITY				
TANK	FRAME NO.	CAPACITY (GALLONS)	VCG (FEET)	LCG (FEET)
HOT OIL EXP TANK	37	3,366	42.50	260.27
HYD OIL STORAGE TANK	28	1,200	36.90	201.30
DIESEL OIL DAY TANK	38-41	4,922	38.50	281.00
DIESEL OIL STORAGE TK (P)	46-53	64,549	16.33	343.29
DIESEL OIL STORAGE TK (P)	46-53	64,549	16.33	343.29



# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

## TEST PUMP AND SOUNDING OF TANKS



**T&T Salvage, LLC**  
8717 Humble Westfield Road,  
Bldg. A, Humble, Texas 77338  
24 HR: +1 713 534 0700  
info@ttsalvage.com

INCIDENT NAME: TOBAGO SPILL  
SAMPLING CARGO TANKS 6P & 6 S  
CAPSIZED BARGE  
AREA: TOBAGO ISLAND

Doc. No.: SP-20342  
Date: 5-Mar-24  
Rev.: 01  
Page 1 of 1

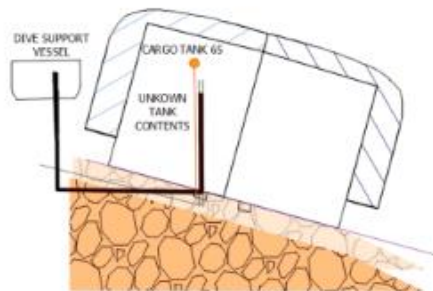
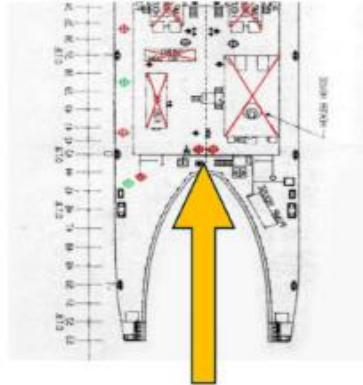
### SAMPLING CONTENTS FROM CARGO TANKS 6P & 6 S

Cargo tanks 6 Port and 6 Starboard were found accessible with their manhole covers missing during the dive survey. It is unknown how much hydrocarbon remains in these tanks at the present time. It is also unknown what was in these tanks both cargo type and quantity prior to the capsizing of the barge.

T&T Salvage would propose a sampling of these tanks with divers and pumping equipment. The risk of additional pollution is low since the manhole covers are already open.

### Methodology

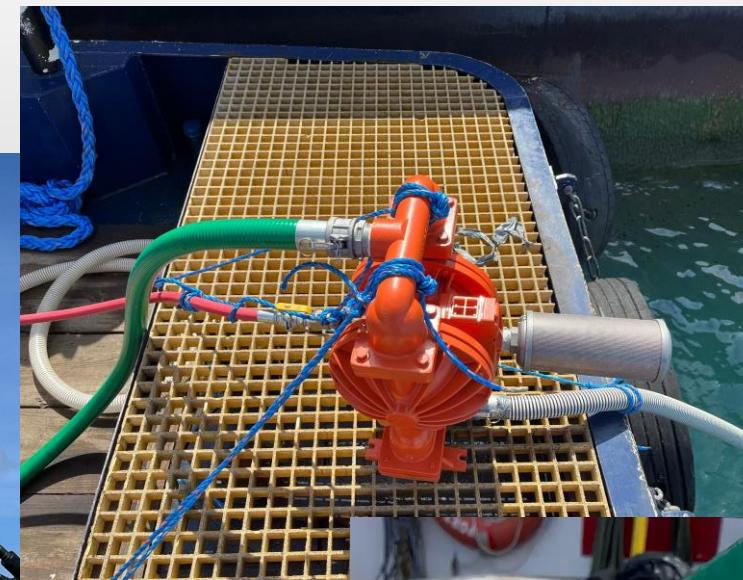
- Procure equipment for pumping.
- Rig a Norwegian buoy to the end of the suction hose so that there is about 1.5 ft of distance between the buoy and the hose.
- Commence dive operations.
- Diver places Norwegian buoy in tank to be sampled with a rope.
- Cargo hose connected to IBC tote on deck.
- Diver gives all clear
- Commence sample pumping.
- Observe contents of receiving tanks
- Repeat above operations for subsequent tank
- Any recovered hydrocarbons to be taken shoreside for entry into the waste stream



SAMPLE PUMP CARGO TANK 6 S  
SCALE 1 / 500

### Equipment

- 50 - 80 CFM air Compressor



COVE POINT SHORESIDE TEMPORARY STORAGE
Assignments:
Coordinated effort with salvage team to receive product from
Proper handling of hydrocarbon onshore
Tank and facility maintenance
Coordination of trucking fleet



# OPERATION GULFSTREAM 2024

## SHORESIDE HYDROCARBON HANDLING PLAN

### INCIDENT NAME: OPERATION GULFSTREAM 2024

VESSEL FORMER NAME: GULFSTREAM

AREA: TOBAGO ISLAND

Submitted at the request of:

GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO  
MINISTRY OF ENERGY AND ENERGY INDUSTRIES

### SHORESIDE HYDROCARBON HANDLING PLAN

<b>File</b>	Shoreside Hydrocarbon Handling Plan	<b>Status</b>	Release
<b>Prepared by</b>	T&T Salvage / QT Environmental	<b>Date</b>	3/18/2024
<b>Job Ref #</b>		<b>Distribution</b>	
<b>PM Signature</b>		<b>Client/ Rep Signature</b>	

#### Confidentiality / Control

The contents of this document shall not be disclosed to any third parties without the written consent of T&T Salvage, LLC or QT Environmental.

Printed copies are uncontrolled.

Section	CTR	Rev	Code	Type	Purpose	Appendices

Rev.	Date	Description	Draft	Check	Approval
1		Initial Issue	JC	MC	KT/MP
2					

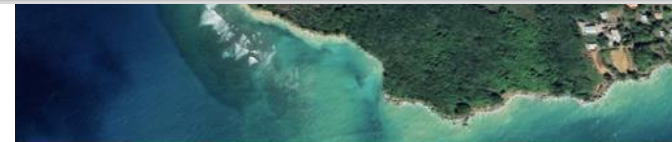


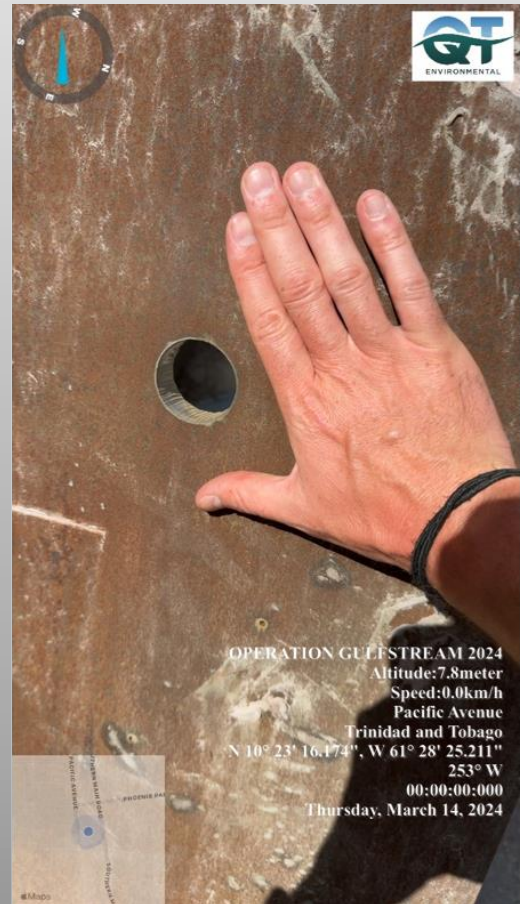
Figure 3 = DIVISI

FLEET:



# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

## Tank Access with Local Support



# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

## Tank Access with Local Support



1. WATERJET ACCESS BASED UPON GENERAL ARRANGEMENT ASSUMPTIONS

2. SEAL ACCESS FROM FROM ENVIRONMENT TO AVOID FURTHER POLLUTION

# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

**Seal all openings from the environment**





# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

**Pumping Operations to Shore**



Oil pumped from the wreck: 31,863.13 bbl. or 5,066 m<sup>3</sup>



**T&T SALVAGE, LLC**

24-HOUR EMERGENCY RESPONSE  
+1 713 534 0700  
INFO@TTSALVAGE.COM  
8717 Humble Westfield Road, Bldg. A  
Humble, Texas 77338



**INCIDENT NAME: OPERATION GULFSTREAM 2024**

**HYDROCARBON REMOVAL PHASE TANK BY TANK  
SUMMARY**

VESSEL FORMER NAME: GULFSTREAM

AREA: TOBAGO ISLAND

Submitted at the request of:

**GOVERNMENT OF THE REPUBLIC OF TRINIDAD AND TOBAGO  
MINISTRY OF ENERGY AND ENERGY INDUSTRIES**



**Pumping Operations to Shore**

**OPERATION GULFSTREAM 2024  
SALVAGE OPERATIONS**

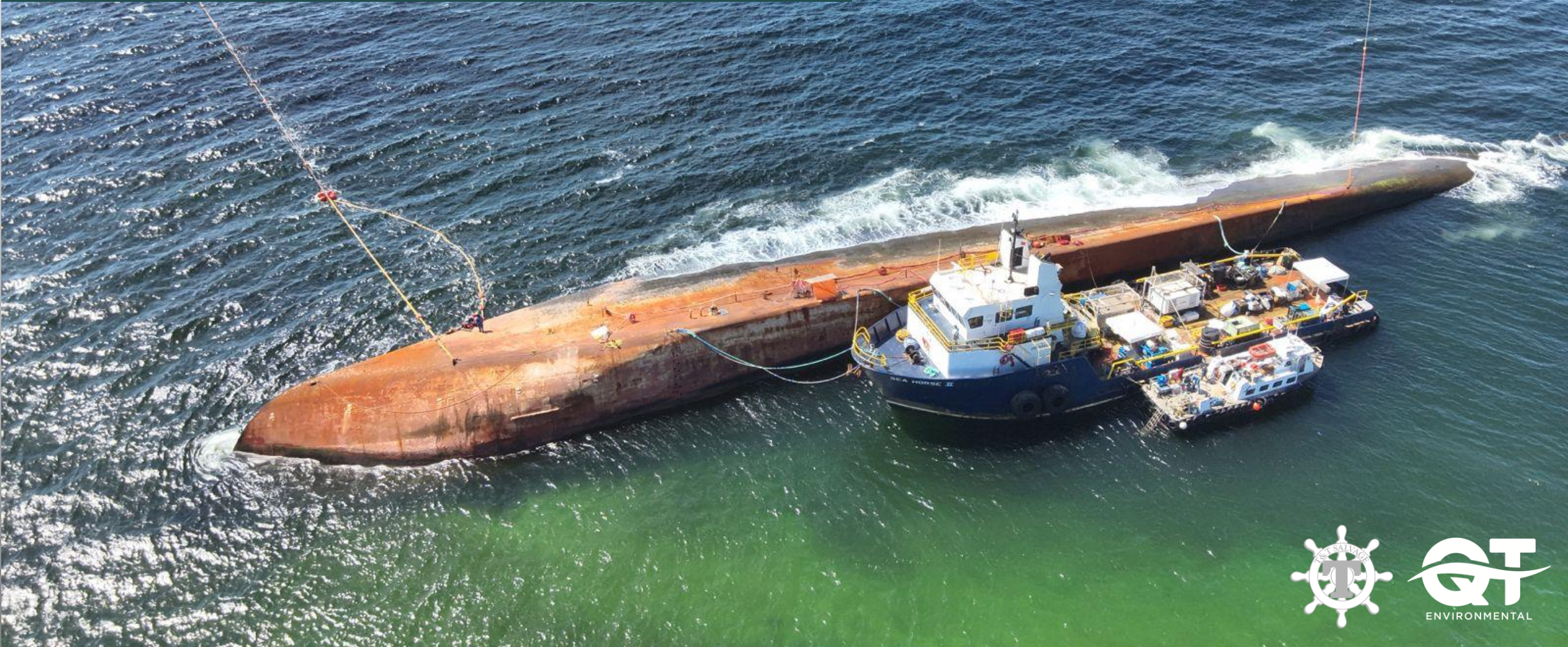
# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

**Transfer to SCOT MUNCHEN**



# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

## REFLOAT



# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

## REFLOAT



# OPERATION GULFSTREAM 2024 SALVAGE OPERATIONS

## REFLOAT



## NEWS

# Gunmen storm shipwreck, shoot Coast Guard officer

JOEY BARTLETT SATURDAY 24 AUGUST 2024



**The Gulfstream's arrival at Sea Lots, Port of Spain on August 22. - Photo courtesy the Ministry of Energy**

A MEMBER of the Trinidad and Tobago Coast Guard (TTCG) was shot and is now hospitalised after gunmen stormed the Gulfstream shipwreck in Sea Lots on the night of August 23.

The barge, which sank off Cove, Tobago, on February 7, was refloated on August 20 and arrived at Sea Lots, Port of Spain, on August 22.

A Ministry of Energy and Energy Industries (MEEI) release said the assailants attempted an unauthorised boarding at the wreck site, leading to a shootout with Coast Guard officers. This confrontation resulted in a non-life-threatening injury to the officer.

The August 24 release said the wreck site "continues to be protected by the TT Coast Guard and the TTPS, with the safety of all response personnel remaining paramount during the final stages of operation."

It concluded by saying the Ministry of Energy is working closely with the TTPS, TT Coast Guard and TT Army to ensure the safety and security of the site.

On February 7, the barge was found overturned and leaking an oil-like substance approximately 200 metres off the coast of Cove. The substance was later identified as

ION



# OPERATION GULFSTREAM 2024

## LESSONS LEARNED

### ON WATER OIL SPILL RESPONSE

- DUE TO LIMITED RESPONSE HISTORY IN TRINIDAD AND TOBAGO, THE NOSCP HAS NOT BEEN TESTED TO ITS FULL CAPACITY, AND FOUND THEY WERE NOT READY FOR A TIER 2 OR TIER 3 RESPONSE
- PLANS MUST BE REVIEWED ON A REGULAR BASIS
- PLANS MUST BE TESTED/EXERCISED ON A REGULAR BASIS
- RESPONSE TEAMS MUST HAVE GLOBAL STANDARDS
- OIL SPILL REMOVAL/RESPONSE ORGANIZATIONS MUST REMOVE THEIR OWN HAT AND PUT ON THE HAT OF THE RESPONSE AND DO WHAT IS IN THE BEST INTEREST OF THE RESPONSE, NOT THEMSELVES
- GOVERNMENT CAN AND WILL MOVE QUICKLY – ROLES IN UNIFIED COMMAND MUST BE DEFINED.





# OPERATION GULFSTREAM 2024

## LESSONS LEARNED

### SALVAGE RESPONSE

- PROPER INTEGRATION OF SALVAGE INTO THE RESPONSE
- INCORPORATE ALL STAKEHOLDERS INTO DECISION MAKING AND PLAN APPROVAL
- JUST BECAUSE IT IS AVAILABLE, DOES NOT MEAN IT MEETS INTERNATIONAL STANDARDS AND/OR BEST PRACTICE
  - DIVING, VESSELS, ETC.
- RISK ASSESSMENT(S) MUST BE PERFORMED BY QUALIFIED AND REPUTABLE ORGANIZATIONS – TIME IS VERY IMPORTANT BUT SAFETY OF ALL PERSONNEL, RESOURCES AND ENVIRONMENT ARE MORE IMPORTANT!



# QUESTIONS THANK YOU



**Josh Clifford**  
*Vice President Operations*



2910 MN-25  
Watertown, MN 55388 USA

+1 952.270.9728 (US Mobile)  
joshc@qtenv.com  
www.qtenv.com



# OPERATION GULFSTREAM 2024

## Conversation Starter Questions

### Questions

- HOW PREPARED ARE YOU ARE FOR A TIER I, TIER II, AND TIER III RESPONSE ?
- HOW PREPARED ARE YOU TO SUPPORT OTHERS WITH MUTUAL AID SUPPORT?
- WHAT IS CRITICAL IN THE EARLY ONSET OF A RESPONSE (ACTIVATION/NOTIFICATION)?
- ARE 'SECONDARY PLANS' BEING THOUGHT ABOUT DURING THE INITIAL PHASE(S) OF A RESPONSE (DEMOBILIZATION PLANS, WASTE MANAGEMENT PLANS, ETC. )
- HOW ARE OPERATIONAL DECISIONS MADE? ARE THE RIGHT DECISION MAKERS/STAKEHOLDERS ENGAGED?

