Clean Gulf Associates

November 4, 2026

TACTICS MANUAL

The Tactics Manual is intended to give the user an overview of all CGA oil spill response capabilities, a visual representation of the equipment and its components, and a general understanding of how to use each technology in an effective oil spill response. It's focus is to provide the necessary data to assist in the operational decision making process concerning the use of CGA resources and what it takes to support them logistically.

This guidebook is in no way intended to provide general or tactical information for any resources not associated with CGA, nor is it intended to be an all inclusive oil spill response tactics manual. In the event of an oil spill, it is CGA's recommendation that the Responsible Party's Spill Management Team (SMT) should consider the use of all available resources and operational response tactics applicable to the details and conditions of that response.

EQUIPMENT GUIDEBOOK
PAGES 04 – 57

TASK FORCE MODEL
PAGES 58 – 61

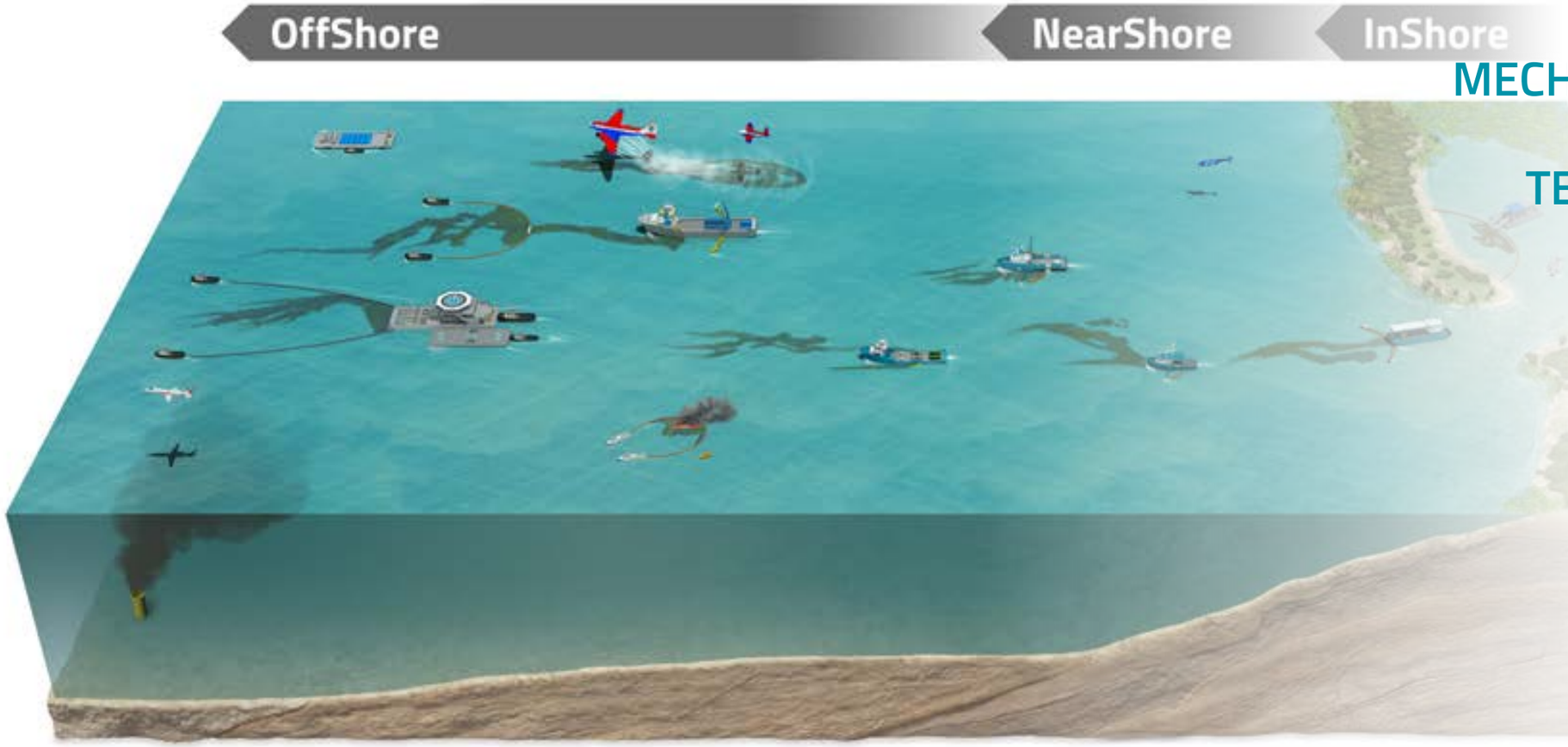
FIELD GUIDE
PAGES 62 – 75

WORK METHODS
PAGES 76 – 97



EQUIPMENT GUIDEBOOK

*ASSET PICTURES ARE INTERACTIVE LINKS.



SAFETY (SAF)
PAGES 08 – 11

CONTAINMENT/BOOMING (CON)
PAGES 12 – 15

ON WATER MECHANICAL RECOVERY (OWR)
PAGES 16 – 33

TEMPORARY STORAGE (STO)
PAGES 34 – 37

ALTERNATIVE RESPONSE TECHNOLOGIES (ALT)
PAGES 38 – 45

REMOTE SENSING AND SURVEILLANCE (RS)
PAGES 46 – 53

WILDLIFE REHABILITATION EQUIPMENT (WLE)
PAGES 54 – 57

ICON DEFINITIONS



OFFSHORE
Offshore for CGA equipment deployment considerations, OFFSHORE is defined as the operating environment extending outward from beyond 20 nautical miles from the shoreline.



NEARSHORE
For CGA equipment deployment considerations, NEARSHORE is defined as the operating environment that extends outward from the shoreline to roughly 20 nautical miles. Areas near the shoreline where water depth is less than 6 feet are considered inshore and excluded from this nearshore definition.



INSHORE
For CGA equipment deployment considerations, INSHORE is defined as the operating environment from the shoreline inward to include shallow water seaward of the coastline (depth less than 6' in the Gulf of America) and all inland waterways.



REMOTE SENSING (CAMERA)
Remote sensing used to detect oil on the surface of the water. Equipment outfitted with remote sensing has the capability to skim at night if approved by the FOSC.



PERSONNEL PROTECTIVE EQUIPMENT
Indicates additional response PPE is available onboard vessel (2 week supply)



SAFETY
Indicates continuous air monitoring capability for O2, LEL, VOC, CO, H2S, and C6H6 (Benzene) either via Industrial Hygienist or Safety Technician.



MEDICAL
Indicates onboard capability of an independent EMT or Paramedic.



ALTERNATIVE RESPONSE TECHNOLOGY
Response capabilities that require FOSC approval prior to use.



HELO
Indicates the equipment discussed has the capability to land a helicopter onboard in some capacity to facilitate the transfer of personnel and/or supplies.



24-HOUR OPERATIONS
Indicates that as a general rule the equipment discussed has the capability to operate in an oil recovery mode 24 hours a day.



DAYLIGHT ONLY
Indicates that as a general rule the equipment discussed has the capability to operate in an oil recovery mode during daylight hours only.

OSRV

OIL SPILL RECOVERY VESSEL (OSRV)
Indicates that the vessel being discussed was built specifically for the recovery of oil and that the oil spill recovery equipment onboard is a built-in integral part of the vessel design and operation.

PIDV

PETROLEUM INDUSTRY DESIGNATED VESSEL (PIDV)
Indicates that a specific type and size of vessel must be identified and procured for deployment of the oil spill recovery equipment being discussed.



WORK METHODS
Detailed information on the deployment and recovery of each equipment type.

LOCATION DEFINITIONS

(AP-TX)
ARANSAS PASS, TX

(G-TX)
GALVESTON, TX

(PV-LA)
PORT OF VERMILION, LA

(L-LA)
LEEVILLE, LA

(H-LA)
HARVEY, LA

(V-LA)
VENICE, LA

SAFETY (SAF)

SAF RESPONSE SAFETY





DESCRIPTION

Safety of ALL response personnel and the public is the number one priority for all Clean Gulf Associates' operations during each phase, of every response. CGA maintains strict adherence to an aggressive safety program as outlined in the CGA Safety Procedures Manual. There is a defined set of steps followed, in order, prior to beginning oil spill recovery operations on any CGA equipment, by all CGA personnel (see work method). This program utilizes air monitoring equipment, site assessment procedures and techniques consistent with best work practices and regulatory guidelines, site safety planning, and coordination with the response Safety Officer (SOFR) to develop an integrated site-specific safety plan for each response operation. In addition, CGA believes in and follows internal guidelines for incident prevention, reporting, and documentation as a very high priority. The CGA safety program can be integrated into the incident wide safety plan and will be evaluated to ensure procedures remain at least as strict as CGA policy and procedures. Any deviation requires the VP's approval.

TACTICAL OVERVIEW

Safety is the number one priority! CGA policy is to respond in modified level "D" only (hard hat, safety glasses, steel toed boots, lifejacket, inner and outer gloves, and tyvek coveralls as needed), with the capability to go to a modified level "C" (adding an air purifying respirator) if needed for preventative safety concerns (the approval of the VP and the response SOFR are needed prior to). CGA will have at least one asset in each operating area with continual air monitoring capabilities. Prior to beginning any operations in the field, a complete site assessment will be conducted and documented then used to develop the 3-page site safety plan. Once developed, it is the Supervisor's responsibility to ensure all personnel review the site safety plan and sign the safety-briefing sheet prior to beginning operations for each operational period. If any action level (listed above, 1/2 the PEL) is reached during any time all operations are immediately stopped and personnel back out of the area to a safe point to reevaluate.

MEDICAL SUPPORT & INDUSTRIAL HYGIENIST

The HOSS barge will have a medic and industrial hygienist assigned to conduct continual safety oversight, medical monitoring, and to provide emergency medical services in the field as needed.

AIR MONITORING EQUIPMENT

IBRID MX-6 (measures):	Oxygen (O2)
	Lower Explosive Limit (LEL)
	Volatile Organic Compounds (VOC)
	Carbon Monoxide (CO)
	Hydrogen Sulfide (H2S)
Draeger Meter (measures):	Benzene (C6H6)

SITE ASSESSMENT EQUIPMENT

Calibration gas	Flashpoint tester
GPS	Compass
Intrinsically safe radio	Weather meter
Binoculars	Response Safety Forms

ACTION LEVELS

O2: below 19.5%	O2: above 23%
VOC: 50ppm	CO: 25ppm
H2S: 5ppm	Benzene: .5ppm

*All CGA equipment and personnel evacuate the area at lower alarm level or "Action Level".

These levels are set to be ½ of the PEL.

LOGISTICAL SUPPORT*

- 1 QTY – Safety Rep per task force
- 1 QTY – Medic (paramedic or EMT) per task force (Geographic area concerns will be considered for numbers)
- 1 QTY – Industrial Hygienist (HOSS barge or larger asset in task force)
- 1 QTY – Transport aircraft and small vessel for field surveys as needed

CONTAINMENT/ BOOMING (CON)

OCEANGOING BOOM BARGE

CON

OCEANGOING BOOM BARGE
CGA 300





DESCRIPTION

The CGA 300 is an Oceangoing Boom Barge that houses 25,000 feet of 43" air inflatable auto-boom palletized in 500' sections. Each section can be set over the side via onboard crane and handed to a support vessel for inflation and deployment. When no longer needed, each section can be attached to one of two recovery reels where it is deflated, coiled back into a roll, and pressed onto a pallet or strap for placement back in secondary containment to be stored for reuse or decontamination. The barge also has a machinery space with a generator and HPU to provide power for the two onboard cranes, a removable conex box workshop and storage space, and an air-conditioned temporary (removable) workspace for personnel assigned during a response. Below deck is a storage area for additional PPE, parts, or other items to provide logistical support as needed to support operations.

TACTICAL OVERVIEW

CONTAINMENT AT THE SOURCE

The Oceangoing Boom Barge is designed to be a transportable platform capable of providing collection and containment capabilities at the source of an oil spill with the assistance of an offshore tug. Once on-scene, the 25,000' of boom can be inflated and deployed by support vessels to provide collection and containment of any free oil on the surface.

IN SUPPORT OF MECHANICAL RECOVERY

The CGA 300 can also be deployed in support of mechanical recovery operations as enhanced skimming, either with 1,000 ' to 3,000' sections towed between two vessels in a wide swath width with a break in the center to channel oil down to skimming vessels, or with one end attached to an existing skimming vessel boom to extend the swath width and increase the effective oil encounter rate.

PROTECTION BOOMING

In areas where the water depth will facilitate the 43" boom, it can be deployed to provide protection booming, such as larger canal openings or bay inlets.

MAXIMUM SEA CONDITIONS

The CGAS Supervisor onboard, in conjunction with the support tug captain, will determine when the sea conditions have exceeded a safe level for deployment, generally 2' – 4'.

VESSEL PARTICULARS

Construction:	Steel	Size (length/beam):	180' / 54'
Draft:	2.5'	Weight:	858 tons
Range:	Gulf of America	Speed (transit):	5-7 knots
Power:	40 KW generator	Crane Capacity:	2/10 ton
Fuel:	500 gals. (diesel)		

ACCOMMODATIONS

Bunks:	N/A	Galley:	N/A
Head:	1		

COMMUNICATIONS

VHF & Portable Starlink

OIL SPILL EQUIPMENT

Boom:	25,000'/43" Auto (air inflatable) - 55,000' total (30,000' in Harvey, LA)
Recovery Reels:	2 hydraulic

SUPPORT VESSELS

Tugs (offshore):	1/1200 hp min	Utility/Crewboat:	1 (supply)

LOGISTICAL SUPPORT*

- 1 QTY – boom barge w/ 25,000' of boom (43")
- 1 QTY – tug (1,200 hp min)
- 2 QTY – PIDV per 1,000' of boom deployed
- 1 QTY – support crew boat (supply)
- 6 QTY – personnel

ADDITIONAL RESOURCES

ICS form 213 Resource Request

ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	VSL PROC. TIME	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
12HRS	N/A		N/A	NM/8 KTS	1HR

ON WATER MECHANICAL RECOVERY (OWR)

HIGH VOLUME OPEN SEA SKIMMING SYSTEM (HOSS)
PAGE 18

KOSEQ RIGID SKIMMING ARM (KOS)
PAGE 20

502 FAST RESPONSE UNIT (FRU)
PAGE 22

95’ FAST RESPONSE VESSEL (95’ FRV)
PAGE 24

46’ FAST RESPONSE VESSEL (46’ FRV)
PAGE 26

56’ SHALLOW WATER FAST RESPONSE VESSEL (56’ SW FRV)
PAGE 28

60’ SHALLOW WATER FAST RESPONSE VESSEL (60’ SW FRV)
PAGE 30

MARCO SHALLOW WATER SKIMMER (MARCO SWS)
PAGE 32

OWR

HIGH VOLUME OPEN SEA SKIMMING SYSTEM (HOSS)







DESCRIPTION

The HOSS barge is a 174' dedicated Oil Spill Recovery Barge (OSRB) with state of the art remote sensing and recovery equipment onboard. An integrated infrared camera and x-band radar system gives it day and night oil spill detection, tracking, and oil recovery capability. Three offshore tugs work in unison to hold 67" offshore capable boom (1,320' max per side) off each side in a "V" pattern with a swath width of up to 500'. The boom, channels free oil on the surface of the water to four, Lamor 5-brush oleophilic skimmers that maximize oil recovery while minimizing water collection. The rotating brushes allow the oil to be scraped off into a 250 barrel sump system that has decanting capability to minimize the amount of water that might be collected prior to it being pumped into one of four 1,000 bbl recovered oil (RO) storage tanks. The skimming system is also equipped with secondary skimmers to collect any product that might bypass the primary skimmers. Once full, the RO tanks can be pumped into a storage barge for disposal in accordance with an approved disposal plan. One of two 840 GPM pumps can offload the barge simultaneous to skimming operations. The HOSS has a 52' x 52' 20,000 lb. helicopter deck and accommodations onboard for 16 people.

TACTICAL OVERVIEW

MECHANICAL RECOVERY

The HOSS barge is a high volume designated oil spill recovery barge that provides mechanical recovery of free oil on the surface of the water in the offshore, nearshore, and inshore environments as long as the water depth can facilitate the barge draft of 6' and the draft of the supporting towing vessels. It is best utilized when positioned as near to an uncontrolled source as possible or in the heaviest concentrations of oil. It can also be used to recover large streamers of oil as needed. Remote sensing equipment gives it the capability to locate and skim oil 24 hours a day if approved by the Unified Command. The HOSS barge is most effective with an assigned aircraft to provide tactical direction and support OWR operations.

MAXIMUM SEA CONDITIONS

Under most circumstances the HOSS barge can maintain standard operations in 3' to 5' seas, with the boom onboard and utilizing only the belts up to 7' seas. Ultimately, the CGAS Supervisor onboard, in conjunction with the support tug captains, will determine at what point sea conditions have exceeded the capability of the barge.

COMMAND AND CONTROL

The advanced communication, oil spill detection, accommodations and helo support ability make the HOSS barge an ideal command and control vessel in the field.

VESSEL PARTICULARS

Construction:	Steel	Size (length/beam):	174'/52'
Draft:	6'	Weight:	1,073 tons
Range:	Gulf of America	Speed (transit):	5-7 knots
Power:	3 x 75 KW generators	Helo deck:	52' x 52' (20,000 lbs)
Crane Capacity:	2/10 ton	Fuel:	6,968 gals. (diesel)
Water:	2,000 gals. (potable)		

ACCOMMODATIONS

Bunks:	16	Galley:	1 full function
Head:	4		

COMMUNICATIONS

Radios:	Marine VHF (station & handheld), Aviation		
Satellite:	Starlink, Phone, Wi-Fi	Tracking:	AIS

OIL SPILL DETECTION

FLIR M580 (Cooled Thermal IR Camera; 4x Visible Light and Ultra-Low Light Camera) and Rutter X-band Oil Spill Detection Radar

OIL SPILL EQUIPMENT

Skimmer:	4-5 Brush Lamor	Daily Recovery Capacity:	76,285 BBLS
Boom:	2,640'/67" Sea Sentry	Swath Width:	500' (max)
RO Storage:	4,100 BBLS	Pumps:	2/500 GPM

LOGISTICAL SUPPORT*

3 QTY – Offshore tugs (2/1200 hp, 1/1800 hp)

1 QTY – Utility/Crewboat (supply)

12 QTY – Personnel

ADDITIONAL FEATURES

ICS form 213 Resource Request

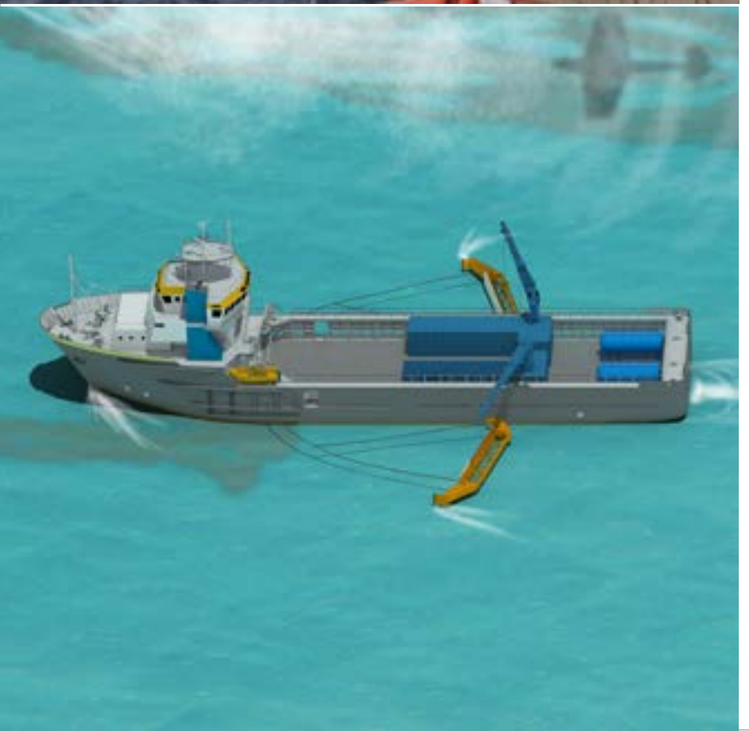
ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	VSL PROC. TIME	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
12HRS	N/A		N/A	NM/8 KTS	1HR

OWR

KOSEQ RIGID SKIMMING ARM (KOS)





DESCRIPTION

The KOSEQ Rigid Skimming Arms are skimming systems available to CGA members through a contract with T&T Marine, Inc. Each system requires a large Offshore or Platform Supply Vessel (OSV/PSV), greater than 200' with at least 100' x 50' of free deck space for deployment. A 50' long rigid framed Arm is deployed on each side of the vessel that consists of pontoon chambers to provide buoyancy, a smooth nylon face, and a hydraulically adjustable mounted weir or nylon brush skimmer. A special purpose deployment system, consisting of conex boxes with a pedestal mounted deployment arm, is used to deploy from the deck of the vessel. Once in the water, the Arm floats independently of the vessel and is attached by a tow bridle and a lead line. The movement of the vessel forward draws the rubber end seal of the arm against the hull to create a collection point for free oil directed to the skimmer by the Arm face. The skimmer is hydraulically adjusted to maximize oil recovery and minimize excess water collection. A positive displacement screw type and centrifugal transfer pump suited for highly viscous oils then pumps the recovered liquid to portable tanks and/or dedicated fixed storage tanks onboard the vessel. Once separated, and with approval from the Coast Guard, the water can be pumped off from the bottom of the portable tanks, in front of the collection arm, to be reprocessed through the system. Once full with as much pure recovered oil as possible, the oil is transferred to a temporary storage barge for disposal in accordance with an approved disposal plan.

TACTICAL OVERVIEW

MECHANICAL RECOVERY

Deployed on large Petroleum Industry Designated Vessel (PIDV) the KOSEQ Rigid Skimming Arms are high volume surge capability deployed to increase the rated daily recovery capacity at the source of a large oil spill in the offshore and outer nearshore environments. They are highly mobile and sustainable in rougher sea conditions than normal skimming vessels (3 meters / 9.8' seas). The large Offshore Supply Vessels (OSV) required to deploy the Arms are able to remain on scene for extended periods. Temporary storage on deck in portable tanks usually provides between 1,000 and 3,000 bbls. In most cases, the PIDV will be able to pump 20% of its deadweight into the liquid mud tanks in accordance with the vessels Certificate of Inspection (COI). All storage can be offloaded utilizing the vessels liquid transfer system. The skimming arms can be deployed with one or two arms per vessel

MAXIMUM SEA CONDITIONS

The Skimming Arms rated maximum deployable sea state is 3 meters (9.8'). Ultimately it will be the decision of the PIDV Captain, with input from the T&T Supervisor onboard, to determine when the sea conditions have exceeded the safe operating conditions of the vessel.

SKIMMER PARTICULARS

Construction:	Steel	Size (l/w/d):	50'/11'9"/6'6"
Draft:	3'3" skimmer draft (not vsl)	Weight:	10,600 lbs
Range:	Gulf of America	Max Seas:	3 meters (9.8')
Speed	10 knots (planning)	Crane Capacity:	TBD
Power:	HPU 32 GPM @ 5,000 PSI		

Vessel draft and transit speed will be dependent on the selected PIDV

ACCOMMODATIONS

Dependent on PIDV specifications

COMMUNICATIONS

PIDV dependent

OIL SPILL DETECTION

PIDV dependent

OIL SPILL EQUIPMENT

Skimmer:	Weir and nylon brush inserts	Daily Recovery Capacity:	36,326 BBLS (weir set) 45,770 BBLS (brush set)
Boom:	N/A	Swath Width:	100' plus PIDV beam (max)

OF SYSTEMS & LOCATIONS

RO Storage:	2 to 6/500 BBLS portable tanks or 20% of vessels dead weight in liquid mud tanks	Pumps:	2,500 GPM
11 Sets staged in:		Harvey, LA (6 sets) Galveston, TX (5 sets)	

LOGISTICAL SUPPORT*

2 to 6 portable storage tanks (500 BBLS)	1 QTY – Skimmer Deployment System
4 QTY – Personnel	
1 QTY – 200'+ Petroleum Industry Dedicated Vessel (PIDV)	

* Multiple KOSEQ PIDVs can be deployed in a task force

ADDITIONAL FEATURES

ICS form 213 Resource Request

ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	VSL PROC. TIME	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
12HRS	MILES/35 MPH		24HRS	NM/10 KTS	1HR

OWR 502 FAST RESPONSE UNIT (FRU)







DESCRIPTION

The Koseq Compact 502 system turns almost any ship into a most effective oil recovery vessel, from a utility vessel to a large offshore supply vessel. The 20 Ft container sized system is built around a well proven and optimized Compact 5 rigid sweeping arm. Besides the sweeping arm, the system is equipped with a knuckle boom crane, a diesel driven hydraulic power pack, and an integrated equipment/toolbox, oil drip tray and outriggers with leveling jacks.

For safe and easy handling of the Compact 5 arm the knuckle boom crane possesses a specially designed hoist winch with catcher system. The catcher system reduces undesired movement of the sweeping arm while hoisting. Once the Compact 5 arm is over the side of the vessel the crane winch will lower the unit into the water. The crane winch has as well a specially designed tensioner system which makes it possible to keep the wire attached to the sweeping arm by slacking the wire, so the sweeping arm has enough space to move freely over the waves.

Due to the forward movement, the oil/water mixture is pushed into the pump well from where the hydraulically driven submersible pump delivers the recovered oil/water mixture directly to the storage tanks on-board the vessel.

TACTICAL OVERVIEW

MECHANICAL RECOVERY

The 502 FRU is designed to provide an advancing fast response skimming capability in the offshore and nearshore environment. To tow the FRU alongside the vessel, the rigid sweeping arm is connected to the ship by a tow line to a bow bollard or forward bit. The range and sustainability offshore are determined by the PIDV the unit is placed on, but generally can stay offshore for extended periods. The FRU works well independently or assigned in a task force with other skimming assets and is more efficient when UAS or aircraft are assigned to direct into recoverable oil.

MAXIMUM SEA CONDITIONS

Under most circumstances the FRU can maintain standard oil spill recovery operations in 2' to 4' seas. Ultimately, the Coast Guard licensed Captain in charge of the PIDV (with input from the CGAS Supervisor assigned) will be responsible to determine when the sea conditions have surpassed the vessel's safe operating capabilities.

SKIMMER PARTICULARS

Construction:	Steel	Max Seas:	2' to 4'
Skid Dimensions:	20 ft container, (l) 20 ft x (w) 8 ft x (h) 8.5 ft		
Skimming Arm:	(l) 17.3 ft x (w) 7.5 ft x (h) 5.25 ft		
Speed (vessel transit):	10 knots (planning)	Total Weight:	20,944 lbs.
Skimmer Type:	Compact Weir		
Skimmer Pump Type:	Submersible screw centrifugal impeller pump		
Pump capacity:	660 gpm	Weight:	2866 lbs.
Diesel powered HPU:	Spring started. 36,5 kW at 2150 rpm		
Hydraulic pumps:	Main: 16 gpm at 4200 psi		
Variable displ. pump:	LS Pilot: 3.17 gpm at 425 psi	Crane capacity:	2866 lbs. at 20 ft (offshore)
Range:	Gulf of America	Transportation:	Semi-truck
3 Personnel			

ACCOMMODATIONS

Dependent on PIDV specifications

COMMUNICATIONS

PIDV dependent

OIL SPILL DETECTION

PIDV dependent, hand held camera

OIL SPILL EQUIPMENT

Skimmer:	Weir		
Swath Width:	18' plus ½ PIDV beam (max)		
	200' in enhanced skimming mode with 440' of sea sentry boom		
Daily Recovery Capacity:	4,251 BBLS	Pumps (skimmer/offload):	620/827 GPM
Boom:	75'/53" air inflatable	RO Storage:	100/200 BBL portable tank

SUPPORT VESSELS

100' to 165' Offshore Supply Vessel

< 165' Utility Vessel (gunwale height restrict)

LOGISTICAL SUPPORT*

1 QTY – PIDV (Utility or Supply Vessel)

ADDITIONAL FEATURES

ICS form 213 Resource Request

ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	VSL PROC. TIME	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
12HRS	MILES/35 MPH		6HRS	NM/10 KTS	1HR

PIDV

LOCATION

V-LA
H-LA
L-LA
PV-LA
G-TX
AP-TX

WORK METHODS

WM

OWR 95’ FAST RESPONSE VESSEL (95’ FRV)





DESCRIPTION

The 95’ Fast Response Vessel (95’ FRV) is an aluminum hulled, designated, oil spill recovery vessel with state of the art remote sensing and recovery equipment onboard. An integrated infrared camera and x-band radar system gives it day and night oil spill detection, tracking, and oil recovery capability. On each side of the vessel, an outrigger holds a 32’ long section of air inflatable boom creating a swath width of about 65’ that directs free oil on the surface of the water to an oleophilic 3-brush skimmer deployed over the side in a track attached to the hull. These high capacity skimmers maximize efficiency by allowing the free oil to stick to the bristles while excess water is repelled. The oil is scraped off into a sump then pumped into the 249 barrel recovered oil (RO) tank. Once full, the recovered oil can be offloaded using the FRV’s 2/660 GPM offload pumps to be disposed of in accordance with an approved disposal plan.

TACTICAL OVERVIEW

MECHANICAL RECOVERY

The 95’ FRV is designed for locating and recovering oil 24 hours a day in the offshore and nearshore environments. With a top speed of 20 knots, it is a highly mobile and efficient OSRV with a rated daily recovery capacity of 22,885 barrels that can get on scene quickly and provide sustainable initial oil detection and recovery operations. Its mobility allows it to remain on scene and recover oil or follow streamers of oil as needed. It works well independently or in a task force with multiple resources. Recovery efforts will be most effective with the tactical direction of a designated aircraft making sure it is best positioned to recover free oil. It can stay out for a couple weeks at a time.

MAXIMUM SEA CONDITIONS

Under most circumstances the 95’ FRV can maintain standard oil spill recovery operations in 3’ to 5’ seas. Ultimately, the CGAS Captain onboard will be responsible to determine when the sea conditions have surpassed the vessels safe operating capabilities.

COMMAND AND CONTROL

With a transit speed of 17 knots, and its ability to locate and recover oil both day and night, the 95’ FRV is designed to be a first vessel on scene capable of maintaining the initial Command and Control function for on water recovery operations as long as needed while other assets are en route.

VESSEL PARTICULARS

Construction:	Aluminum	Size (length/beam):	95’/21’
Draft:	5’	Weight:	90 tons
Range:	Gulf of America	Speed (transit):	17 kts
Power:	65 KW generator	Crane Capacity:	2,500 lbs @ 15’
Fuel:	2,500 gals. (diesel)		
Water:	2,000 gallons (potable)		

ACCOMMODATIONS

Bunks:	6	Galley:	1 full function
Head:	2		

COMMUNICATIONS

Radios:	VHF-FM and Aviation	Tracking:	AIS
Satellite:	Phone, data, Starlink		

OIL SPILL DETECTION

FLIR M500 (Infrared Camera, HD Digital Video Camera, High Output Spotlight, and Rutter X-band Radar)

OIL SPILL EQUIPMENT

Skimmer:	2/3-brush Lamor	Daily Recovery Capacity:	22,885 BBLS
Boom:	2/32’x3’ air inflatable	Swath Width:	65’ (max)
RO Storage:	249 BBLS (Sump: 1 BBL)	Pumps:	2/660 GPM

SUPPORT VESSELS

N/A

LOGISTICAL SUPPORT*

1 QTY – Designated spotter aircraft

6 QTY – Personnel

1 QTY – Offshore tank barge

*95’ FRV is well suited to work with other skimming vessels in a single task force

ADDITIONAL FEATURES

ICS form 213 Resource Request

ESTIMATED TIME OF ARRIVAL (ETA)					
PREP (AT SITE) 2HRS	TRANSPORT (OTR) N/A	VSL PROC. TIME	LOADING(STAGING) N/A	TRANSIT (O/S) NM/17 KTS	DEPLOYMENT 1HR

OWR

46’ FAST RESPONSE VESSEL (46’ FRV)





DESCRIPTION

The 46’ Fast Response Vessel (46’ FRV) is an aluminum hulled, designated, oil spill recovery vessel with a swath width of about 50’. On each side of the vessel, an outrigger holds a 23’ long section of positive floatation hard boom that directs free oil on the surface of the water into a recovery trough via thru-hull doors at the waterline. The free communication created with the doors open allows the oil to contact a turning, oleophilic 2-brush skimmer designed to maximize efficiency by allowing the oil to stick to the nylon bristles while any excess water is repelled. The oil is then scraped off the brushes where it drops into a sump that free flows into the 65 barrel recovered oil (RO) tank. Once full, the recovered oil can be offloaded using the FRV’s 160 GPM offload pump to be disposed of in accordance with an approved disposal plan.

TACTICAL OVERVIEW

MECHANICAL RECOVERY

The 46’ FRV is designed primarily to recover oil in the nearshore (out to 20 NM) and inshore environments where water depths exceed 6’, but could go slightly beyond 20 NM at the captain’s discretion if needed. With a top speed of 25 knots, it is a highly mobile and efficient OSRV with a rated daily recovery capacity of 15,257 barrels. The FRV is well suited to be deployed at the source or chase streamers as a final attempt at recovery prior to the oil impacting the shoreline. It works well in a task force of multiple resources or independently. Recovery efforts will be most effective with the tactical direction of a designated aircraft making sure it is best positioned to recover free oil. The 46’ FRV can stay out a night or two if needed (temporary accommodations for 3 people onboard), but is better used to skim during daylight hours and return to a support platform or dock at night to offload and refuel.

MAXIMUM SEA CONDITIONS

Under most circumstances the 46’ FRV can maintain standard oil spill recovery operations in 2’ to 4’ seas. Ultimately, the Coast Guard licensed CGAS Captain onboard will be responsible to determine when the sea conditions have surpassed the vessel’s safe operating capabilities.

VESSEL PARTICULARS

Construction:	Aluminum	Size (length/beam):	46’/16’
Draft:	5’	Weight:	29 tons
Range:	350 to 470 NM (20 NM out)	Speed (transit):	17 knots
Power:	10 KW generator	Hoist Capacity:	1,500 lbs.
Davit:	1,500 PSI	Fuel:	700 to 925 gals. (diesel)
Water:	50 to 100 gals. (potable)		

ACCOMMODATIONS

Bunks:	3	Galley:	Microwave
Head:	1		

COMMUNICATIONS

Radios: VHF-FM, Satellite Phone, Aviation, AIS

OIL SPILL EQUIPMENT

Skimmer:	2/2-brush Lamor	Daily Recovery Capacity:	15,257 BBLS
Boom:	2/23’x3’	Swath Width:	50’ (max)
RO Storage:	60-65 BBLS (Sump: 1 BBL)	Offload Pumps:	160 GPM

SUPPORT VESSELS

N/A

LOGISTICAL SUPPORT*

1 QTY – Designated spotter aircraft

3 QTY – Personnel

1 QTY – 40’ shuttle barge (offloading)

**46’ FRV is well suited to work with other skimming vessels in a single task force*

ADDITIONAL FEATURES

ICS form 213 Resource Request

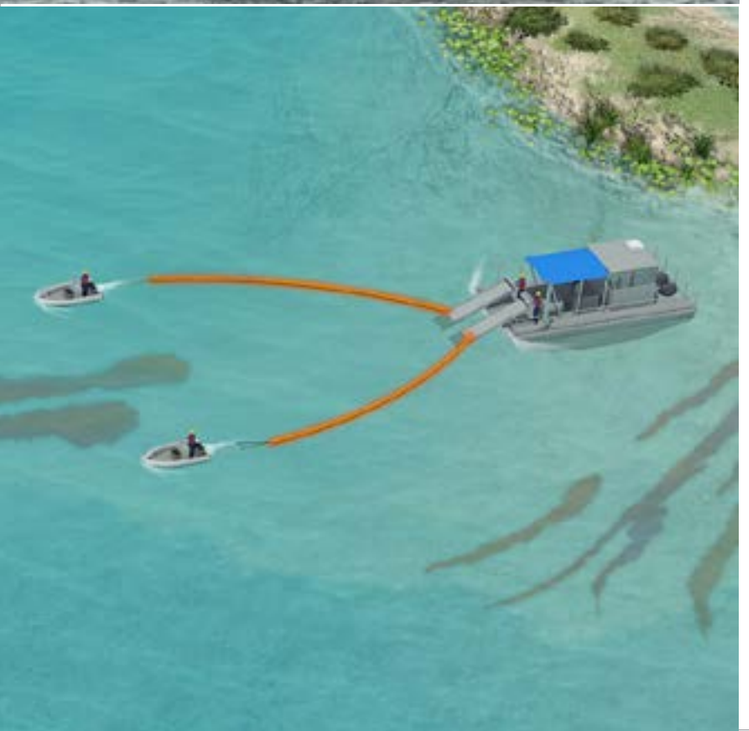
ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	VSL PROC. TIME	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
2HRS	N/A		N/A	NM/17 KTS	1HR

OWR

56’ SHALLOW WATER FAST RESPONSE VESSEL (56’ SW FRV)





DESCRIPTION

The 56’ Shallow Water Fast Response Vessel (56’ SW FRV) is an aluminum hulled designated oil spill recovery vessels with 2/36” belt skimmers on the bow and twin 350 hp outboards on the stern. Two sections of 18” containment boom will be supplied from OSRO contractors and will be deployed in a “V” pattern from each side of the vessel to direct oil to the skimmers. Without the boom, the skimmers can also be deployed over containment boom to recover oil and debris already contained. As oil and/or debris are channeled to the oleophilic skimming belts, the oil sticks to the belt and water is repelled. The belt rotates allowing the sticking oil to be scraped off into a sump and any debris to fall off into recovery disposal bags. The oil is then pumped into a 249-barrel storage tank where it can be offloaded with the vessel’s 660 gpm offload pump to temporary storage for disposal in accordance with an approved disposal plan. Any bagged debris can be offloaded to a separate vessel for transport to a disposal location.

TACTICAL OVERVIEW

MECHANICAL RECOVERY

Used in an inshore environment, the 56’ SW FRV can be used like a mini HOSS barge with boom extended in a “V” pattern directing oil to the barge in open canals or bays, or without the boom, the belts can be lowered into contained oil for oil and debris removal. It is ideal for work just outside the jetties in and around the barrier islands, etc. because its speed allows it to get back into protected waters should weather conditions change. It can operate in waters as shallow as 2’.

MAXIMUM SEA CONDITIONS

Calm waters are ideal, anything more than a foot or so of chop and the SW FRV must return to calm waters.

VESSEL PARTICULARS

Construction:	Aluminum	**Size (length/beam):**	56’ / 14’
Draft:	2’	**Weight:**	32,000 lbs
Range:	Inland (3 NM into GoA dep wx)	**Speed (transit):**	17 knots
Fuel:	250 to 350 gals. (gasoline)	**Water:**	N/A

ACCOMMODATIONS

None — **Head:** None

COMMUNICATIONS

VHF — AIS

OIL SPILL EQUIPMENT

Skimmer:	2/36” belt	**Daily Recovery Capacity:**	21,5000 BBLS
Boom:	2/75’x3’ air inflatable	**Swath Width:**	60’ (max)
RO Storage:	249 BBLS (Sump: 9 BBLS)	**Offload Pumps:**	660 GPM

LOGISTICAL SUPPORT*

2 QTY – 14’ to 16’ flat bottom work boats for boom tending

3 QTY – Personnel

ADDITIONAL FEATURES

ICS form 213 Resource Request

ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	VSL PROC. TIME	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
2HRS	N/A		N/A	NM/17 KTS	30 MIN

OWR

60’ SHALLOW WATER FAST RESPONSE VESSEL (60’ SW FRV)







DESCRIPTION

The new 60’ Shallow Water Fast Response Vessels (60’ SW FRV) are aluminum hulled skimming vessels with slight “V” hulls and triple outboard Yamaha 350 hp engines. Each has two / three brush nylon skimmer inserts and 2/17’ 24” inflatable boom sections that use outriggers to hold a “V” pattern out in front of the vessel to direct oil to the skimmers. Oil sticks to the brushes as they rotate through a nylon scraper that releases the oil into a sump where it can be pumped to a 249 BBL recovered oil tank. Debris is removed by a grating above the sump and disposed of. All 3 vessels have offloading pumps that operate at 660 GPM.

TACTICAL OVERVIEW

MECHANICAL RECOVERY

Used in an inshore environment, the 60’ SW FRV is designed to operate in an advancing mode with boom extended in front of the vessel using outriggers to direct oil to the brush skimmers built into the bow and lowered into the oil to skim. The slight “V” shaped hull and triple outboards give it a top speed of 25 knots which provides a high level of range and flexibility. The shallow draft gives it access to shallow water skimming environments up until now reserved for smaller Marco skimmers with less than a quarter of the 60’ SW FRV’s capability while maintaining the ability of larger vessels to work offshore between barrier islands and the shoreline.

MAXIMUM SEA CONDITIONS

Calm waters are ideal, but the 60’ SW FRV’s slight “V” hull allows it work in choppier seas than other smaller skimmers.

ENHANCED SKIMMING MODE

OSRO small boats and sections of 18” contractor boom can be connected to the ends of the 60’ SW FRV boom to increase the swath width and increase the oil encounter rate.

VESSEL PARTICULARS	Construction:	Aluminum	Size (length/beam):	60’ / 16’
	Draft:	2’	Weight:	68,900 lbs
	Range:	Inland (3 NM into GoA dep wx)	Speed (transit):	25 knots
	Fuel:	950 gals. (gasoline)	Water:	N/A
ACCOMMODATIONS	None		Head:	1
COMMUNICATIONS	VHF/Aircraft, Portable Starlink		AIS	
OIL SPILL EQUIPMENT	Skimmer:	2/3 Nylon LAMOR brush	Daily Recovery Capacity:	22,885 BBLS
	Boom:	2/17’ x 3’ air inflatable	Swath Width:	75’
	RO Storage:	249 BBLS	Offload Pumps:	660 GPM
LOGISTICAL SUPPORT*	3 QTY – Personnel			
ADDITIONAL FEATURES	ICS form 213 Resource Request			

ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	VSL PROC. TIME	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
2HRS	N/A		N/A	NM/17 KTS	30 MIN

OWR

MARCO SHALLOW WATER SKIMMER (MARCO SWS)





DESCRIPTION

The Marco Shallow Water Skimmer is a designated oil spill recovery vessel with a single belt skimmer. It is powered by outboard engines for skimming in the shallow water environments of harbors, coastal areas, rivers, and lakes. A single 12" wide oleophilic marco belt recovers oil that sticks to the belt and repels water to maximize efficiency. The belt rotates and the recovered oil is scraped off into a sump where it is pumped into a 20 to 34 barrel recovered oil storage tank. It can skim in advanced or stationary modes depending on the conditions. The skimmers are stored on flatbed trailers to facilitate a rapid response. They need a permit for transport over the road.

TACTICAL OVERVIEW

MECHANICAL RECOVERY

Shallow water skimmers can be used to recover free oil in the inshore environment including the very shallow water (1.5'). Either in a fixed capacity or moving forward, free oil can be recovered. The Marco has a rated daily recovery capacity of 3,588 barrels. Once full, a shuttle barge (249 BBLS) can be used to unload the skimmer without removing it from the skimming area.

MAXIMUM SEA CONDITIONS

Shallow water skimmers must be operated in calm water conditions.

VESSEL PARTICULARS

Construction:	Aluminum	Size (length/beam):	34' to 38'/10'
Draft:	1.5'	Weight:	7,000 to 15,500 lbs
Range:	Inshore (6 hour run time)	Speed (transit):	15 to 20 knots
Fuel:	200 gal (gas)		75 gal (diesel)

ACCOMMODATIONS

Hoist Capacity:	N/A	Water:	50 to 100 gals. (potable)

COMMUNICATIONS

VHF

OIL SPILL EQUIPMENT

Skimmer:	1/12" belt	Daily Recovery Capacity:	3,588 BBLS
Boom:	N/A	Swath Width:	100' w/ contractor boom
RO Storage:	20 to 34 BBLS	Offload Pumps:	160 GPM

SUPPORT VESSELS

N/A

LOGISTICAL SUPPORT*

1 QTY – Designated spotter aircraft (if available)

2 QTY – Personnel

** MSWS is well suited to work with other skimming vessels in a single task force*

ADDITIONAL FEATURES

ICS form 213 Resource Request

ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	VSL PROC. TIME	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
4HRS	MILES/35 MPH		6HRS	NM/20 KTS	30 MIN

TEMPORARY STORAGE (STO)

STO TEMPORARY STORAGE (BARGES)







DESCRIPTION

CGA maintains an agreement with T&T Marine Salvage to provide its members with over 3 million barrels of temporary recovered oil storage. Barges can be activated via these agreements and provide barges ranging from small, inland barges (20,000 BBLS) upward to large offshore tug and barge combinations (over 100,000 BBLS) to provide temporary storage of recovered oil and transport it to the designated disposal or reuse facility as designated by the member company.

In addition, CGA maintains (4) 249-barrel aluminum hulled shuttle barges to support shallow water skimming operations by offloading at the skimmer recovery location to minimize skimmer travel.

TACTICAL OVERVIEW

Tank barges are assigned to the CGA offshore on water recovery task forces to provide on site temporary storage. Smaller barges, 22,000 barrel to 35,000 barrel capacity, remain on site with skimming assets until full and then rotate out to offload into a larger, 80,000 barrel and larger barge assigned to the on water recovery group.

The smaller 249 barrel shuttle barges are used in conjunction with CGA shallow water skimming assets to allow temporary storage on site. These barges will "shuttle" oil from the site of skimming operations to larger inland tank barges moored nearby.

CGA works with the member company's Incident Management Team (IMT), specifically the marine logistics group within the logistics section, to identify and procure Platform/Offshore Supply Vessels (PSV/OSV) capable of providing temporary offshore storage to the initial mechanical recovery assets within 12 – 24 hours. If needed, CGA can leverage an internal CGA membership vessel sharing agreement to help locate available Petroleum Industry Dedicated Vessels (PIDVs). These vessels can provide between 20% - 100% of their deadweight in recovered oil (4K - 30K BBLs) based on the vessels Certificate of Inspection (COI).

VESSEL PARTICULARS	Steel hulled USCG certificated tank barges, ocean going and inland canal, up to 3 million barrels of temporary storage. 4 – 249-Barrel CGA shuttle barges
SUPPORT VESSELS	1 tug or workboat as required by barge size
AGREEMENTS	T&T Salvage, LLC, Houston TX

ALTERNATIVE RESPONSE TECHNOLOGIES (ALT)

AERIAL DISPERSANT (DSP)
PAGE 40

SURFACE DISPERSANT MONITORING (SDM)
PAGE 42

IN-SITU BURN (ISB)
PAGE 44

ALT AERIAL DISPERSANT (DSP)







DESCRIPTION

Clean Gulf provides aerial dispersant application capabilities to its members via a contract with Aero AG located in New Iberia, LA. A CGA funded Cessna 408 SkyCourier and an Embraer EMB-110 P1 spotter aircraft are maintained at Aero AG to provide the ability to apply 600 gallons of dispersant (per load) onto oil spills in the Gulf of America within hours. Clean Gulf has a dispersant stockpile of Accell Clean DWD 2.0 totaling 75,000 gallons. The Cessna 408 SkyCourier has an adjustable spray application rate (5 gallons per acre rule of thumb). Because of relatively low application heights (less than 100') the Embraer EMB-110 P1 flies above to provide direction of spray operations. All application of dispersants is done with the approval of the Federal On-Scene Coordinator (FOSC) and monitored by the Coast Guard SMART team.

TACTICAL OVERVIEW

ALTERNATIVE RESPONSE TECHNOLOGIES

Aerial dispersant application can be used either when mechanical recovery is not feasible or when it must be augmented. Even when operating in a pre-approved zone in the Gulf of America, it is necessary make sure the initial checklist has been completed and submitted to the USCG. Once approval is given, an initial spray can be conducted and monitored by the Responsible Party and/or the Coast Guard SMART team to verify effectiveness. Aero AG is capable of being wheels up within 4 hours with an on-scene time usually within an hour, give or take, based on the location of the spill. Dispersant application is usually targeted toward the leading edge of a spill and/or in the largest quantities of freshest oil. It is important not to spray dispersants within 1 mile of mechanical recovery operations and to ensure that treated oil is given the time to break down and disperse into the water column.

Surface application can also be accomplished using a portable spray skid on a utility vessel as directed by the Unified Command, most often if suppression of VOCs is needed in particular areas.

CGA's portable dispersant skid application system mixes dispersant with potable or sea water as it is applied. The dispersant systems on the aircraft are neat systems (dispersant directly applied to the water surface). Either way, authorization must be given by the RRT before these dispersant systems are used.

MAXIMUM SEA CONDITIONS

Dispersant application is most effective when there is enough wave action to ensure the mixing of dispersant and oil. Wind and visibility are also important factors to consider.

APPLICATION AIRCRAFT PARTICULARS

Cessna 408 SkyCourier

Wingspan:	72'	Length:	55'	Height:	22'
Range radius:	50 NM with 600 gal; 100 NM with 550 gal; 150 NM with 500 gal				
Speed:	175 Kts (max)	Application:	150 Kts	Duration:	2.5 Hrs (full load)
Crew:	1 Captain	1 Co-pilot			
Capacity:	Dispersant 600 gallons			Fuel:	1,800 lbs.

SPOTTER AIRCRAFT PARTICULARS

Embraer EMB-110 P1 (Poseidon 03)

Wingspan:	50'	Length:	47'	Height:	16'
Range:	650 NM	Speed:	160 Kts	Duration:	4.5 Hrs
Crew:	1 Captain	1 Co-pilot	1 Operator, room for 2 observers		
Capacity:	Fuel: 3,000 lbs.				

DISPERSANT

Types:	Accell Clean DWD 2.0	Total Stockpile:	75,000 Gallons
Locations:	New Iberia, LA: 1,650 Gallons		Harvey, LA: 73,350 Gallons

LOGISTICAL SUPPORT*

6 – personnel for ground support (loading, etc.)

1 – Dispersant Spray Skid

ADDITIONAL RESOURCES

ICS form 213 Resource Request

ESTIMATED TIME OF ARRIVAL (ETA)

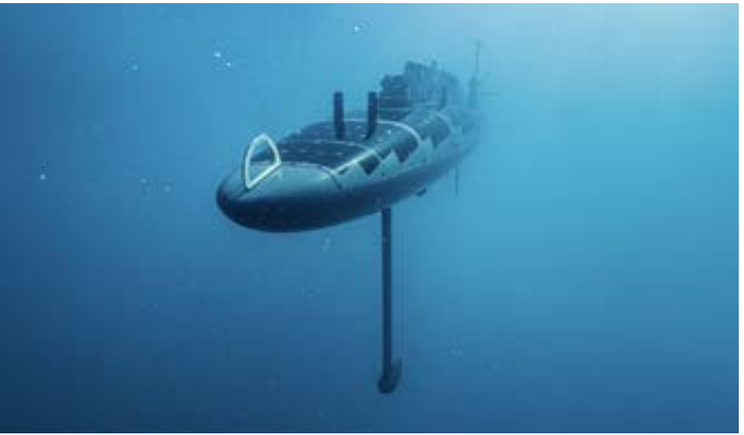
PREP (AT SITE)	TRANSPORT (OTR)	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
4HRS	N/A	2HRS	NM/160 KTS	7–10 MIN

ALT

SURFACE DISPERSANT MONITORING (SDM)







DESCRIPTION

Clean Gulf Associates, Inc. (CGA) has partnered with Ocean Aero, Inc. (OAI) to provide surface dispersant monitoring through the OAI Triton 3 (T3) Autonomous Underwater and Surface Vehicle (AUSV). This partnership aims to offer monitoring within 24 hours of dispersant use for significant spills exceeding 100,000 gallons within 24 hours, or any spill where surface dispersants have been used for over 96 hours, as mandated by the National Contingency Plan (NCP) under Subpart J (40 CFR 300.913(b)). It's important to note that the T3's use does not replace the visual (Tier 1) and surface monitoring (Tier 2) for Special Monitoring for Alternative Response Technologies (SMART) conducted by the government.

The OAI Triton 3 (T3) AUSV is a wind and solar-powered vessel made of fiberglass, designed for remote operation. It has indefinite voyage endurance and an unlimited range in the Gulf of America (GOA). With a transit speed of 2-5 knots depending on sea conditions, the T3 can submerge for up to 8 days to a maximum depth of 100 meters. Equipped with an onboard computer processing unit (CPU) and collision avoidance software, it can be programmed to transit, sample, and collect data at different waypoints as directed by the AUSV operator under the Member company's Incident Management Team (IMT) or Qualified Individual (QI).

TACTICAL OVERVIEW

Following the application of surface dispersants, the T3 can collect surface or subsurface (<100 meters) water quality, fluorescence, and particle size monitoring data. It can transmit this data via cellular, satellite, or company WIFI networks. Additionally, it is equipped with a sampling device to collect surface or subsurface (<100 meters) samples for later lab analysis for Polycyclic Aromatic Hydrocarbons (PAH) and heavy metals.

Located at the OAI facility in Gulfport, MS, the AUSV can be deployed via boat ramp, vessel, or waterfront facility along the Gulf of America, depending on the specific response scenario. The T3 operator can be stationed in the Incident Command Post (ICP) or at the OAI facility, taking direction from designated IMT members to collect and transmit data for inclusion in the incident-specific Dispersant Monitoring Quality Assurance Project Plan (DMQAPP). Collected samples will be transferred from OAI to the Member to maintain data and sample integrity. A chain of custody process will be followed for sample collection and transport to an approved laboratory, as directed by the IMT.

AUSV PARTICULARS

Dimensions:	(l/h/w in ft) 14.5 x 15 x 2.7
Weight:	775 lbs.
Comms:	Silvus, Iridium, and cell
Battery power:	8.8 kWh
Solar collection:	200W
Max surface speed:	5 knots
Max subsurface speed:	2 knots
Submersion depth:	up to 328 ft (100 m)
Surface endurance:	14+ DAS (days at sea)
Subsurface endurance:	5+ DAS
Payload:	50 lb. body, 25 lb. keel, 8 lb. wing

DISPERSANT MONITORING EQUIPMENT

- Ocean Aero Sampler (PAH and heavy metals)
- ANB OC-300 (pH)
- Seabird Scientific CTD (conductivity, pressure, and temperature)
- Sequoia LISST-200x (oil particle size)
- Seabird Scientific ECO 190408 or Turner C3 Fluorometer (fluorescence and turbidity)

LOGISTICAL SUPPORT

Transport:	via 20' or 30' cargo trailer
Personnel:	2 to launch; 1 to operate
Launch method:	dockside, boat ramp, or from vessel

ESTIMATED TIME OF ARRIVAL (ETA) - 24 HRS

PREP (AT SITE)	TRANSPORT (OTR)	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
12HRS	MILES/35 MPH	12HRS	2-5KTS	N/A

ALT HYDRO FIRE BOOM





DESCRIPTION

The Elastec Hydro-Fire Boom system is comprised of a 500' long section of 32" specialized fire retardant boom that is water cooled via 2 1000 GPM water pumps. Each system is rated to be capable of multiple burns before it becomes necessary to refurbish. The boom is stored on a hydraulic boom reel and the water system monitored via flow meters, pressure gauges, and suction strainer manifolds. Also included in the system are two towing packages, each with 400' of towline and 400' fire hose assemblies.

TACTICAL OVERVIEW

ALTERNATIVE RESPONSE TECHNOLOGIES

Each fire boom system is designed to burn pooled oil in primarily the offshore, or outer edges of the nearshore environment to augment mechanical recovery or when mechanical recovery may not be possible. ISB is most effective when deployed as soon as possible after the spill occurs so that volatile compounds can be utilized to ensure the effectiveness of the burn. The general strategy is to use vessels of opportunity to work in tandem on each end of the boom to locate fresh pockets of oil and coral into burnable thicknesses (2-3 mm). Once approval has been obtained from the Federal On-Scene Coordinator, and an assigned wildlife observer verifies there are no animals within the burn area, an accelerant/ignition system can be floated into the oil and the operation monitored for burn control and safety. Several tons of oil an hour can be burned without the need for disposal. Once the burn is complete, any residues left over must be disposed of in accordance with a written disposal plan.

MAXIMUM SEA CONDITIONS

Sea conditions of 1' - 3' in choppy conditions can begin to affect the ability to coral and contain oil in the boom, but burning can be done as long as the contained oil is not splashing over and can be controlled. In a non choppy, rolling swell, conditions up to 6' may still be manageable and allow for burning operations, again, as long as splash over isn't a factor and the oil can be controlled.

Also, winds over 20 knots will reduce the ability to control the oil and resulting smoke plume therefore limiting the ability to conduct burning operations. Burn operations should be at least ½ mile from other operations.

SYSTEM PARTICULARS (PER SET)

Number:	2 full systems; 1 extra boom (500')	Size (l x h):	500' x 32"
Weight:	8 lbs/ft	Pumps:	2/600 GPM
Speed (vessel transit):	10 knots (planning)	Max Seas:	1' - 3'
Loadout Crane:	10 tons	Power: HPU	
Transportation:	Semi-truck	Total Weight:	8,000 lbs

ACCOMMODATIONS

Dependent on PIDV specifications

COMMUNICATIONS

PIDV dependent

OIL SPILL DETECTION

PIDV dependent

OF SYSTEMS & LOCATIONS

2 Systems: Harvey, LA

LOGISTICAL SUPPORT*

2 – PIDV boom towing vessels

2 – Utility vessels (1 Command; 1 Igniter) with 50' x 25' deck space

8 – Personnel

1 – Wildlife observer

**Multiple systems can be deployed in a task force*

ADDITIONAL RESOURCES

ICS form 213 Resource Request

ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
12HRS	MILES/35 MPH	12HRS	NM/10 KTS	2HRS

REMOTE SENSING (RS) & SURVEILLANCE

REMOTE SENSING:
INFRARED CAMERA & X-BAND RADAR &
AERIAL SURVEILLANCE
PAGE 48

RS

REMOTE SENSING: INFRARED CAMERA, X-BAND RADAR







DESCRIPTION

CGA 95' FRVs and the HOSS Barge are equipped with one of two State-of-the-Art oil spill detection systems. On these vessels a Rutter X-band oil detection radar is integrated with an Aptomar or the FLIR M500 camera system which includes a 3-axis motion stabilized pointing unit that houses a military grade nitrogen cooled infrared camera; a HD digital video camera; and a high output spotlight for detecting oil spills in limited visibility and low-or no light conditions. Both the Aptomar, FLIR M500, and Rutter X-band radar oil detection systems are displayed onto a marine touch screen user interface that can record and display real time geographic positions with video imagery overlaid onto a marine (ENC) electronic navigational chart. Together these two systems aid in on scene coordinating of resources and oil spill recovery operations, while also giving it's operator the ability of relaying its imagery and information to a shore based command by e-mail.

TACTICAL OVERVIEW

These oil spill detection systems can automatically detect, track, and outline marine oil slicks in real-time across a range of visibility conditions and sea states. This complete oil spill response and management system and nitrogen cooled infrared cameras, unlike air-cooled ones, are capable of reporting relative thickness of an oil slick making spill offshore skimming response more effective and efficient. Can facilitate 24 hour oil spill recovery operations when approved by the Unified Command and provide digital video and images via satellite link to ICPs as needed.

SYSTEM PARTICULARS

Aptomar SECurus System and the FLIR M500

Infrared Camera		Rutter X-Band Radar	
Height above waterline:	26' on the 95' FRV	Height above waterline:	39' on 95' FRV
	36' on the HOSS Barge		56' on the HOSS Barge
Oil Detection Distance:	4-6 NM	Oil Detection Distance:	9-10 NM

Can detect as little as 200 liters of oil

Resolution: 640x512

LINKS

SECurus & Rutter

The CGA-200 will maintain the Aptomar camera while the 95' FRV's will have the FLIR





ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
1HR	N/A	N/A	NM/410 KTS	N/A

RS

REMOTE SENSING:
AERIAL SURVEILLANCE



DESCRIPTION

CGA has access to Aero AG's Embraer EMB-110 P1 (Poseidon 03) spotter aircraft out of New Iberia, LA, capable of providing aerial recon information to the Incident Management Team (IMT) for consideration during the tactical direction of on-water response equipment and resources.

The Poseidon 03 may be used as needed for aerial surveillance outside of dispersant applications when practical.

SYSTEM PARTICULARS

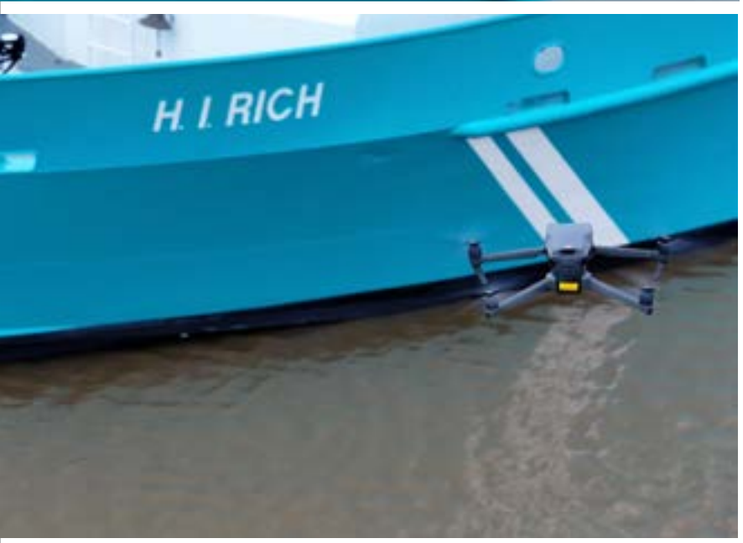
Plane Type:	
Embraer EMB-110 P1 (Poseidon 03)	Model: Bandeirante
Turboprop, twin-engine (2 x PT6A-34, 750 SHP)	
Crew: 1 Captain, 1 Co-pilot, 1 Operator	Wingspan: 50' Length: 47'
Height: 16'	Observers: room for 2
Max Takeoff Weight: 12,500 lbs.	Fuel: 3,000 lbs.
No spray capability	
Survey mode: 3,000'	Analysis mode: 1,000'
Speed: 160 knots (mission), 200 knots (max)	Range: 650 NM
Mission Endurance: 4 hours	Base: Acadiana Regional (KARA)

ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
1HR	N/A	N/A	NM/160 KTS	N/A

small UNMANNED AIRCRAFT SYSTEM (sUAS): AERIAL SURVEILLANCE





DESCRIPTION

CGA is committed to employing state-of-the-art resources to better locate and recover oil released into the Gulf of America.

One of the tools CGA uses is small Unmanned Aircraft Systems (sUAS), located on the 95' Fast Response Vessels (FRV), the HOSS barge, and individually as needed on shallow water platforms or land-based locations. The sUAS provide detailed tactical information directly to CGA equipment operators on oil location, description, and any conditions that could affect oil recovery.

In addition to their tactical use for spill response, sUAS can provide pre-assessment images (video and still pictures) of areas before any oil spill impact, including environmentally sensitive areas, and have been used several times for this mission.

CGA pilots are FAA Part 107 certified and work in tandem with trained aerial observers to provide for the safe acquisition of oil spill information.

LIVE STREAMING

sUAS video can be streamed live from the aircraft to the incident command post, CGA's shore-based team, and responders in the field through Microsoft Teams and other streaming services. Streams are recorded automatically for incident documentation, after-action review, and training. All flights are logged to a central flight-records system, so flight hours and pilot activity are tracked for every deployment.

sUAS TYPES

DJI Mavic 4 Pro (6 units)

Quad rotors
Weight- 2.3 lbs. (with battery)
Flight speed- 56 mph
Flight time- 51 min
Max wind speed- 26 mph
Max altitude 400' above ground
Flight distance within line of sight (without remote aerial observer)

DJI Mavic 3 Pro (5 units)

Quad rotors
Weight- 2.1 lbs. (with battery)
Flight speed- 47 mph
Flight time- 43 min
Max wind speed- 26 mph
Max altitude 400' above ground
Flight distance within line of sight (without remote aerial observer)

DJI Mavic 3 (3 units)

Quad rotors
Weight- 2.0 lbs. (with battery)
Flight speed- 47 mph
Flight time- 46 min
Max wind speed- 26 mph
Max altitude 400' above ground
Flight distance within line of sight (without remote aerial observer)

WILDLIFE REHABILITATION EQUIPMENT (WLE)

WLE

WILDLIFE REHABILITATION EQUIPMENT





DESCRIPTION

A mobile wildlife rehabilitation system comprised of a rehabilitation trailer, a husbandry trailer, 1 supply trailer, and 8 dozen propane fired bird scare cannons. The system is capable of being rapidly positioned in a wildlife-impacted location in order to provide logistical support to wildlife recovery and rehabilitation specialists as listed in the member companies Oil Spill Response Plan (OSRP). The self-sustainable system provides 4/4-stage wash tables and 2/2-stage rinse tables.

TACTICAL OVERVIEW

The wildlife equipment is easily mobile to be moved to any area of impact along the gulf coast. CGA personnel will be assigned to assist in the set up of the trailers, the support equipment, and the wash/rinse tables. They will then remained assigned to provide logistical support and to ensure the proper water temperatures are maintained, the needed PPE is available, and also work to support the entire wildlife rehabilitation operation. Bird scare cannons (propane fired) are also available to be placed in the field to provide bird hazing in the attempt to deter birds from entering an oil-impacted area.

SYSTEM PARTICULARS

- 1 QTY – Rehabilitation Trailer
- 1 QTY – Husbandry Trailer
- 1 QTY – Supply Trailer
- 8 QTY – Dozen bird scare cannons
- 2 QTY – Inline water heaters (electric)
- 4 QTY – Wash stations
- 2 QTY – Rinse stations
- Requires shore power or 30 KW (quiet) generator
- Refrigerator
- Freezer (carcass storage)
- Comms – None
- 1 QTY – personnel
- Rehabilitation specialists will need to be contracted to clean wildlife.

SUPPORT VESSELS

1 QTY – Utility Vessel – Impacted wildlife recovery

EQUIPMENT LOCATIONS

- 1 QTY – Rehabilitation Trailer (Harvey, LA)
- 1 QTY – Husbandry Trailer (Harvey, LA)
- 1 QTY – Supply Trailer (Harvey, LA)

ADDITIONAL RESOURCES

ICS form 213 Resource Request

ESTIMATED TIME OF ARRIVAL (ETA)

PREP (AT SITE)	TRANSPORT (OTR)	LOADING(STAGING)	TRANSIT (O/S)	DEPLOYMENT
4HRS	MILES/35 MPH	N/A	N/A	2HRS

TASK FORCE MODEL (TFM)



TASK FORCE MODEL (TFM)

ON WATER RECOVERY GROUP

When the first skimming vessel arrives on scene, a complete site assessment will be conducted before recovery operations begin. Once it is confirmed that the air monitoring readings for O2, LEL, H2S, CO, VOC, and Benzene are all within the permissible limits, oil recovery operations may begin.

As skimming vessels arrive, they will be organized into Task Forces (TF) to ensure the proper span of control is maintained within the Incident Command Structure (ICS) and assigned to work in areas that allow for the most efficient vessel operation and free vessel movement in the recovery of oil. Each Task Force will vary in structure as determined by the Operations Section of the Unified Command, but could generally consist, at a minimum, of the following dedicated assets:

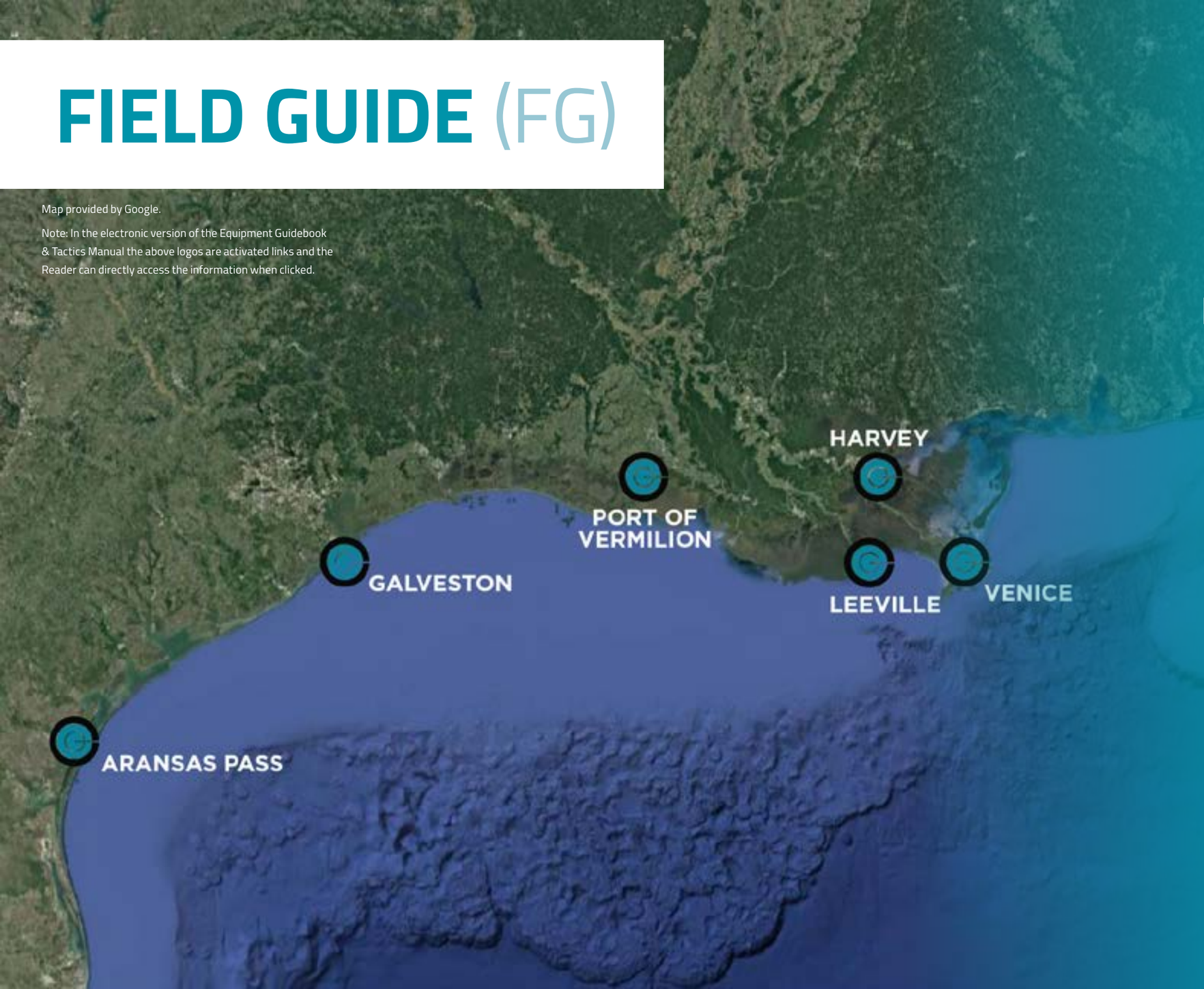
- 4 QTY – Offshore skimming vessels (recovery)
- 1 QTY – Tank barge (temporary storage)
- 1 QTY – Air asset (tactical direction)
- 2 QTY – Support vessels (crew/utility for supply)
- 6 QTY – Boom vessels (enhanced booming)



FIELD GUIDE (FG)

Map provided by Google.

Note: In the electronic version of the Equipment Guidebook & Tactics Manual the above logos are activated links and the Reader can directly access the information when clicked.



ARANSAS PASS, TX (AP-TX)
PAGE 64

GALVESTON, TX (G-TX)
PAGE 66

PORT OF VERMILION, LA (PV-LA)
PAGE 68

LEEVILLE, LA (L-LA)
PAGE 70

HARVEY, LA (H-LA)
PAGE 72

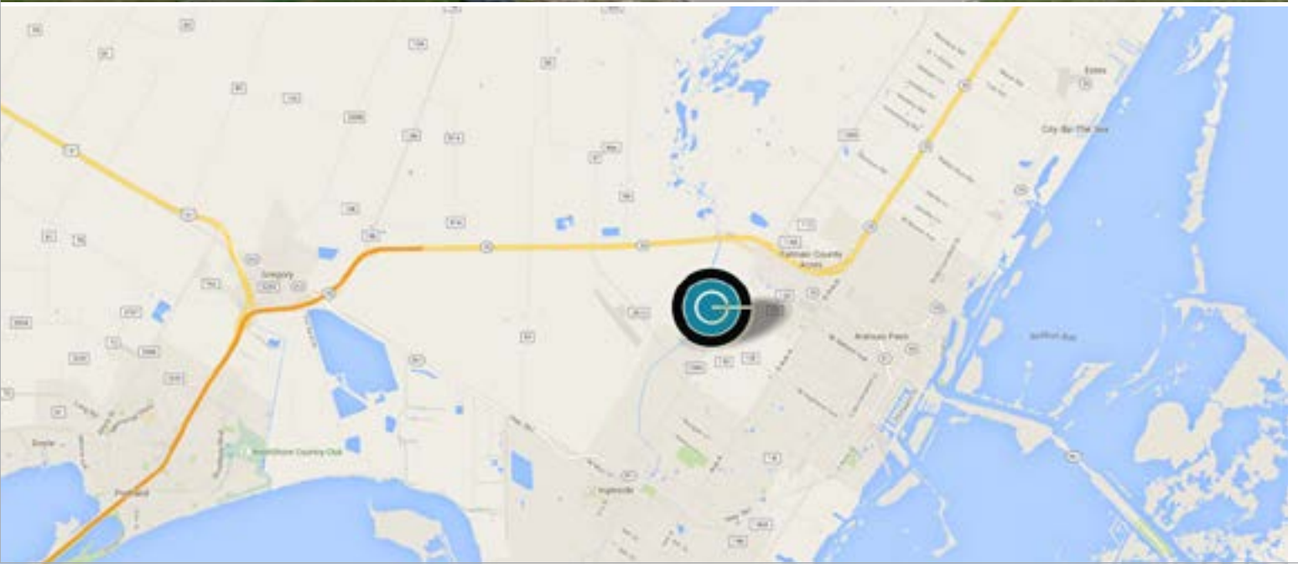
VENICE, LA (V-LA)
PAGE 74

FIELD GUIDE ARANSAS PASS, TX (AP-TX)



SITE INFORMATION 4150 FM 1069, Aransas Pass, TX 78336

Office Telephone:	888.242.2007
24 Hour Telephone:	888.242.2007



CONTRACTOR SUPPORT

COMPANY NAME	PHONE
Miller Environmental	361.289.9800
T&T Marine	409.744.1222
Corpus Christi Area Oil Spill Control Association	361.882.2656
Gainco	361.643.4378
Shelton Services	866.527.6780
Sea Level Marine (Spill Support & Diving Services)	361.758.7487

TRUCKING SERVICE

ACME Truck Line Inc.	361.289.0844
Ainsworth Trucking	361.241.0616
Sharkey Trucking [Goose Neck Trailers/Hot Shot Only]	361.215.5885

CRANE SERVICE

Bay	361.693.2854
TNT Crane	361.289.5438
JM Davidson	361.758.3447
Martin Midstream (Port O'Connor) 361.983.2631	

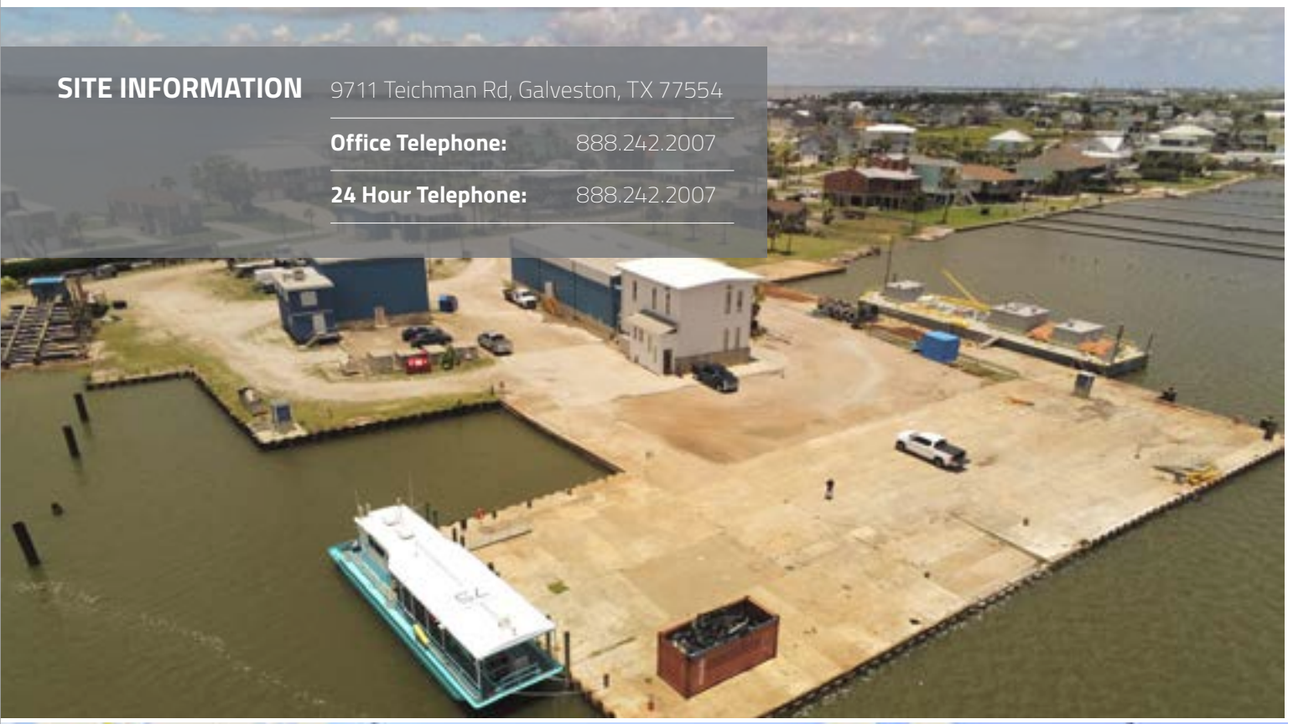
FUEL DOCKS

Martin Energy (Aransas Pass at Harbor Island)	361.758.0296
Redfish Bay Marina (Gasoline) (Conn Brown Harbor)	361.758.9000

EQUIPMENT LIST

NAME	QTY	WM
46' FRV (Timbalier Bay)	1	WM
Wildlife Scare Cannons (12)	1	
56' SW FRV (CGA 71)	1	WM

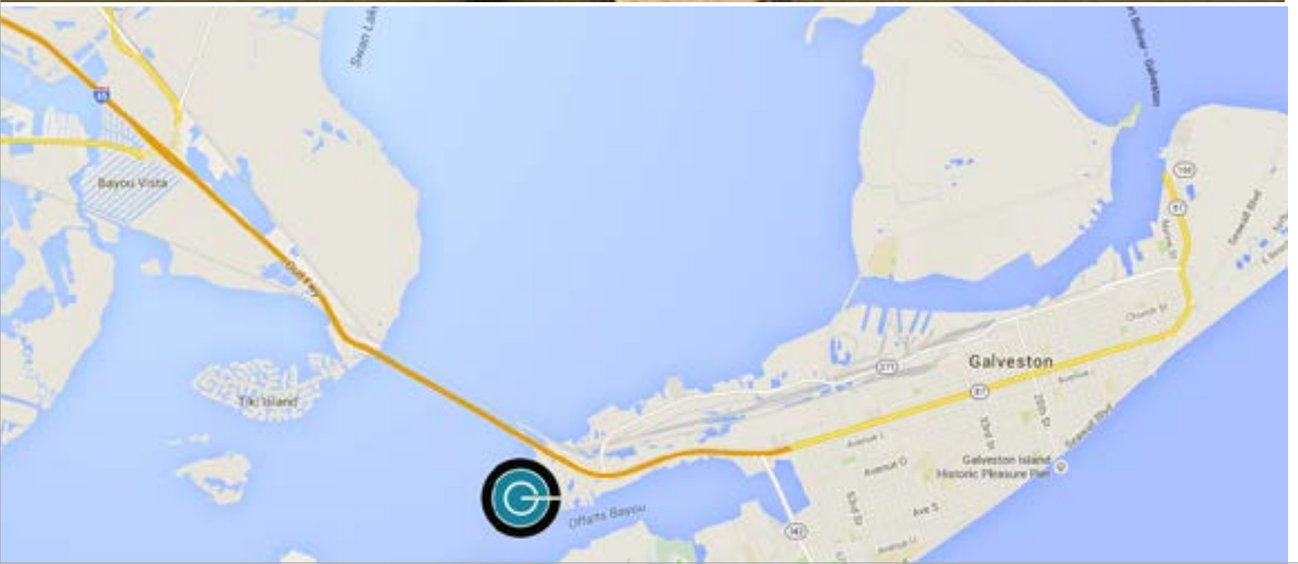
FIELD GUIDE GALVESTON, TX (G-TX)



SITE INFORMATION 9711 Teichman Rd, Galveston, TX 77554

Office Telephone: 888.242.2007

24 Hour Telephone: 888.242.2007



CONTRACTOR SUPPORT

COMPANY NAME	PHONE
T&T Marine	409.744.1222
Garner	985.639.3591
Ampol	504.361.4321
ES&H	713.921.7600
E3	844.333.0939
USES	888.279.9930 or 281.867.4100
Phoenix	281.838.3400
Clean Harbors	281.478.7703
CTI	855.774.5669

TRUCKING SERVICE

ACME Trucking, Galveston, TX	409.933.0015 or 888.662.1249

CRANE SERVICE

T&T Marine, Pelican Island	409.744.1222
Martin Marine & Fuel; Dispatch Pelican Island	409.744.7126
Ryan Marine, Galveston Island	409.763.1269
Pier 77 Marine Service, Galveston Island	409.740.4000

FUEL DOCKS

Martin Marine Lube & Fuel, Pelican Island (Dispatch 24/7)	409.744.2888 409.744.7126
Galveston Yacht Basin (Afterhours)	409.539.9775
Pier 19 Marine Fuels	409.763.5423
Pelican Rest Marina, Galveston Island	409.744.2618

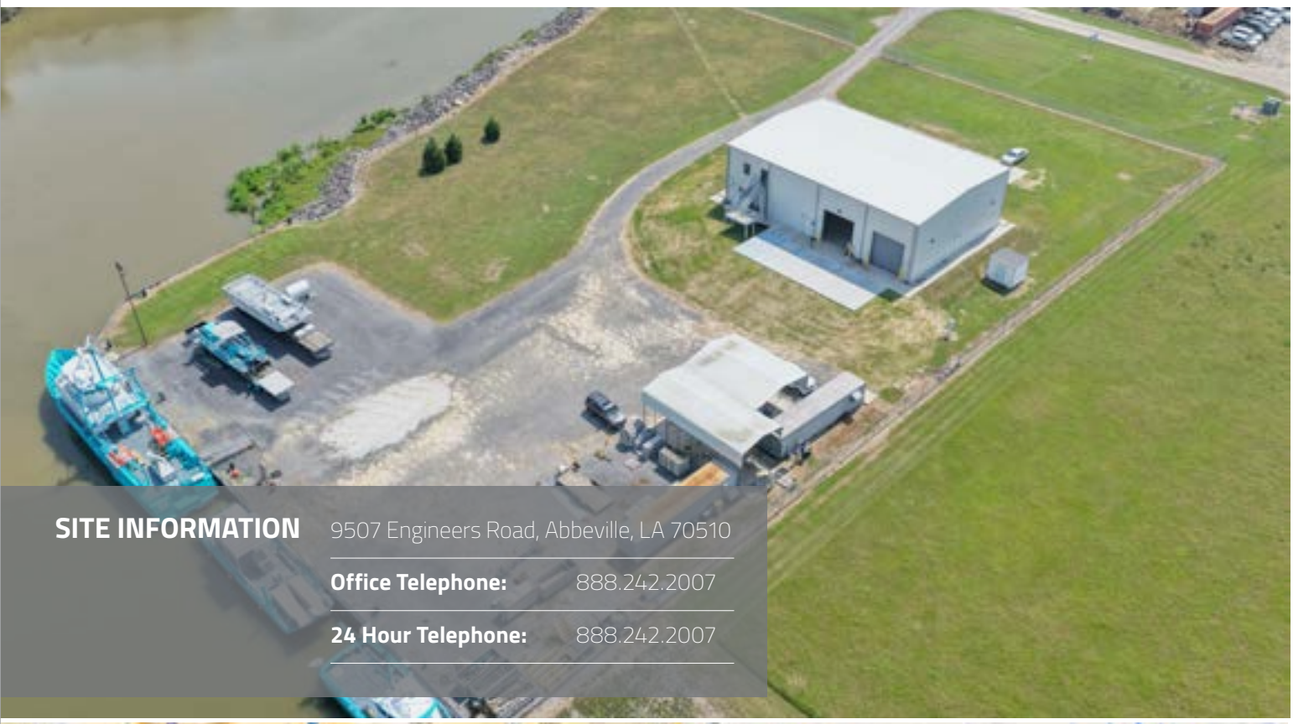
BOATS

Ryan Marine, Galveston, TX	409.763.1269 (Dispatch)
Otto Candies, LA	504.469.7700 (Dispatch)

EQUIPMENT LIST

NAME	QTY	WM
95' FRV (Galveston Island)	1	WM
Fast Response Unit (FRU 8335)	1	WM
Rigid Skimming Arms (KOSEQ)	6	
Foilex Skim Package (TDS 150)	1	
Aqua Guard Skimmer	2	
440'/67" Sea Sentry boom reel	1	
Tank – 100 bbl. (Secondary)	1	
Tank – 50 bbl.	1	
249 Barrel Storage Barge (CGA 10)	1	
Wildlife Scare Cannons (12)	1	
Tank - 100 bbl. (Secondary)	1	
4,000' Containment Boom 43"(oil stop)	1	

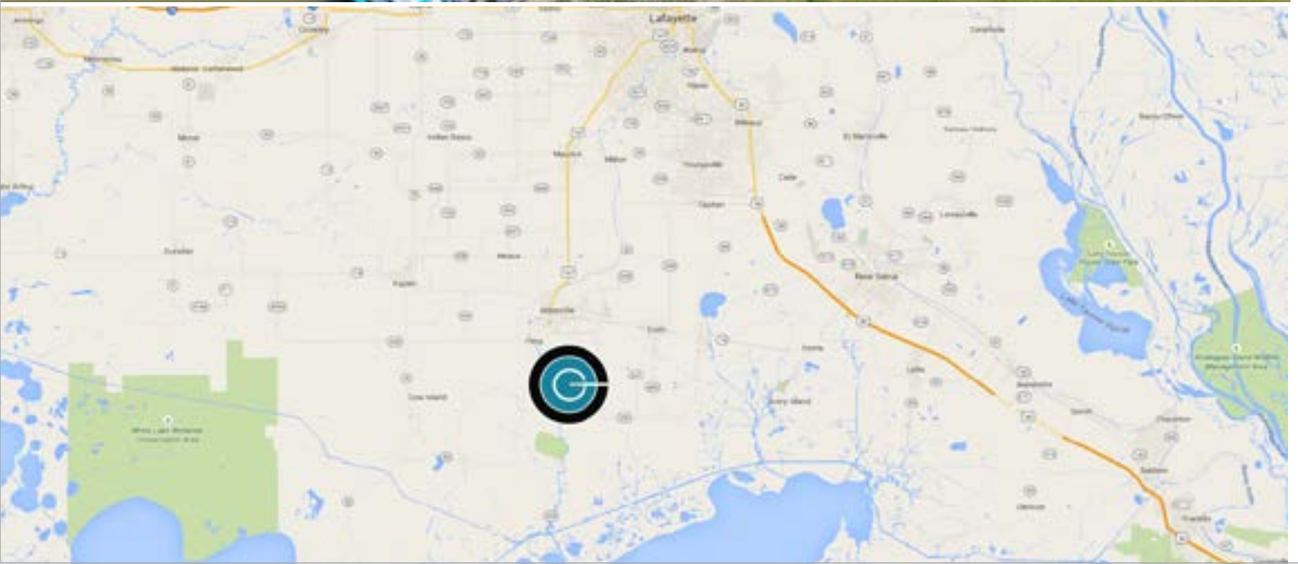
FIELD GUIDE PORT OF VERMILION, LA (PV-LA)



SITE INFORMATION 9507 Engineers Road, Abbeville, LA 70510

Office Telephone: 888.242.2007

24 Hour Telephone: 888.242.2007



CONTRACTOR SUPPORT

COMPANY NAME	PHONE
Ampol	504.361.4321
E3	844.333.0939
T&T Marine	409.744.1222
ES&H	877.437.2634
Legacy Environmental	833.653.4229

TRUCKING SERVICE

United Vision – Lafayette	337.291.6700
ACME Truck Line – Abbeville	337.892.6749
Venture Transport	800.880.8482
Broussard	337.839.0828

CRANE SERVICE

Grand Isle Shipyard	337.893.6511
Gulf Coast Marine Fab	337.893.1799
EPS Dock	337.893.5660

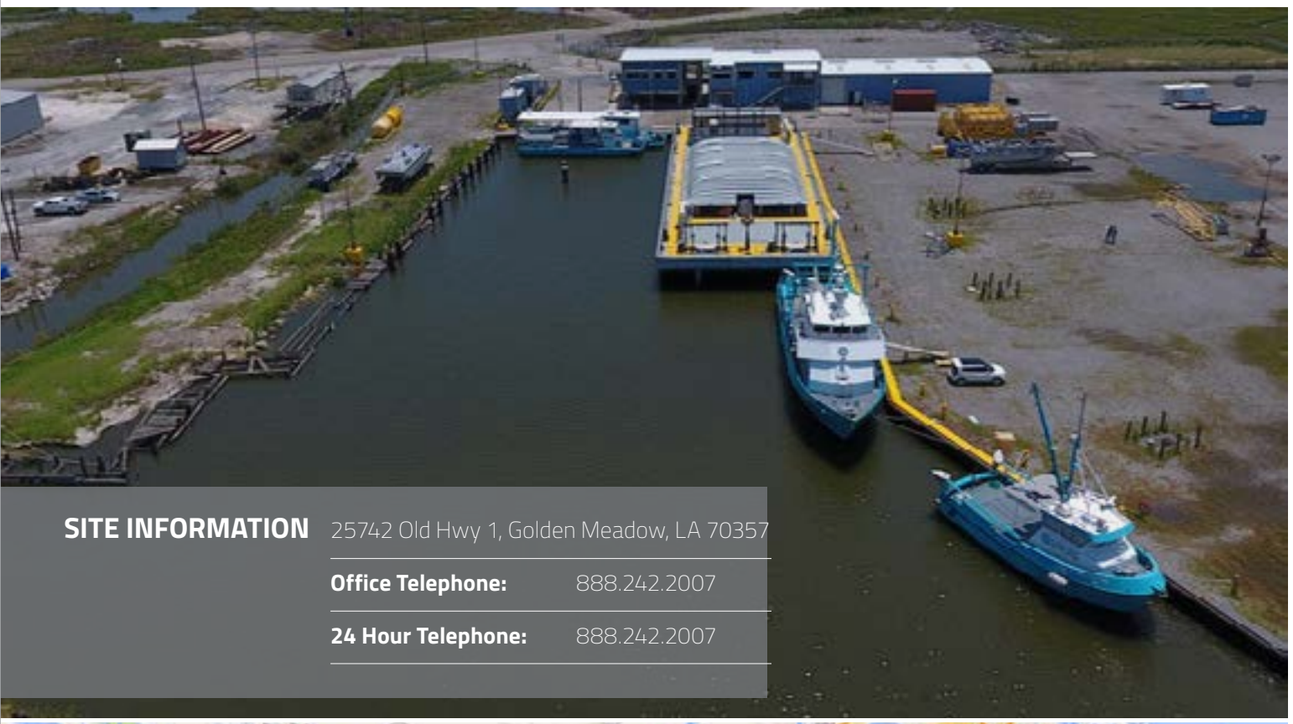
FUEL DOCKS

L&L Abbeville	337.893.6084
Stone Fuel	337.893.1069
Shell Morgan	337.893.1211

EQUIPMENT LIST

NAME	QTY	WM
56' SW FRV (CGA 74)	1	WM
95' FRV (H.I Rich.)	1	WM
46' FRV (Bastian Bay)	1	WM
Marco (CGA 51)	1	WM
249 Barrel Storage Barge (CGA 9)	1	
Foilex TDS 150	1	
TDS 118	1	
4 Drum Skimmer	1	

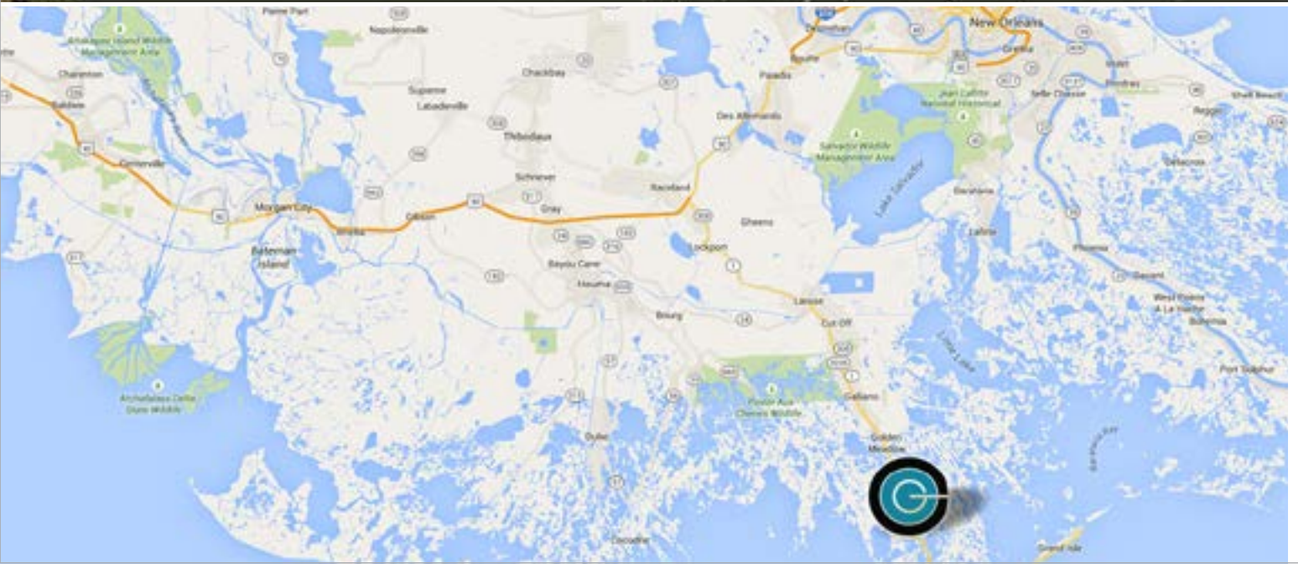
FIELD GUIDE LEEVILLE, LA (L-LA)



SITE INFORMATION 25742 Old Hwy 1, Golden Meadow, LA 70357

Office Telephone: 888.242.2007

24 Hour Telephone: 888.242.2007



CONTRACTOR SUPPORT

COMPANY NAME	PHONE
Ampol	504.361.4321
Danos	985.258.9267
E3	844.333.0939
GIS	985.278.1475
T&T Marine	409.744.1222
ES&H	985.851.5350

TRUCKING SERVICE

United Vision	985.209.2326
Venture Transport	800.880.8482
ACME	985.868.7600

CRANE SERVICE

Gator Equipment and Crane Services	985.991.9929
Pitre Industries	985.475.6888
Allegiance Crane & Equipment	337.234.9435

FUEL DOCKS LEEVILLE, LA

Griffin's Station Marina (Diesel/Gas)	985.396.2415
Bobby Lynn's Marina (Gas Only)	985.396.2678

FUEL DOCKS FOURCHON, LA (DIESEL ONLY)

L&L Oil and Gas Services	985.396.2035
Martin Energy Services	985.396.2177
Martin Energy Services Dock 15	985.396.2846
Midstream Fuel Services	985.396.2742
John W. Stone Fuel and Oil	985.396.2210
Talens Marine & Fuel	985.396.3843 or 985.396.3804

EQUIPMENT LIST

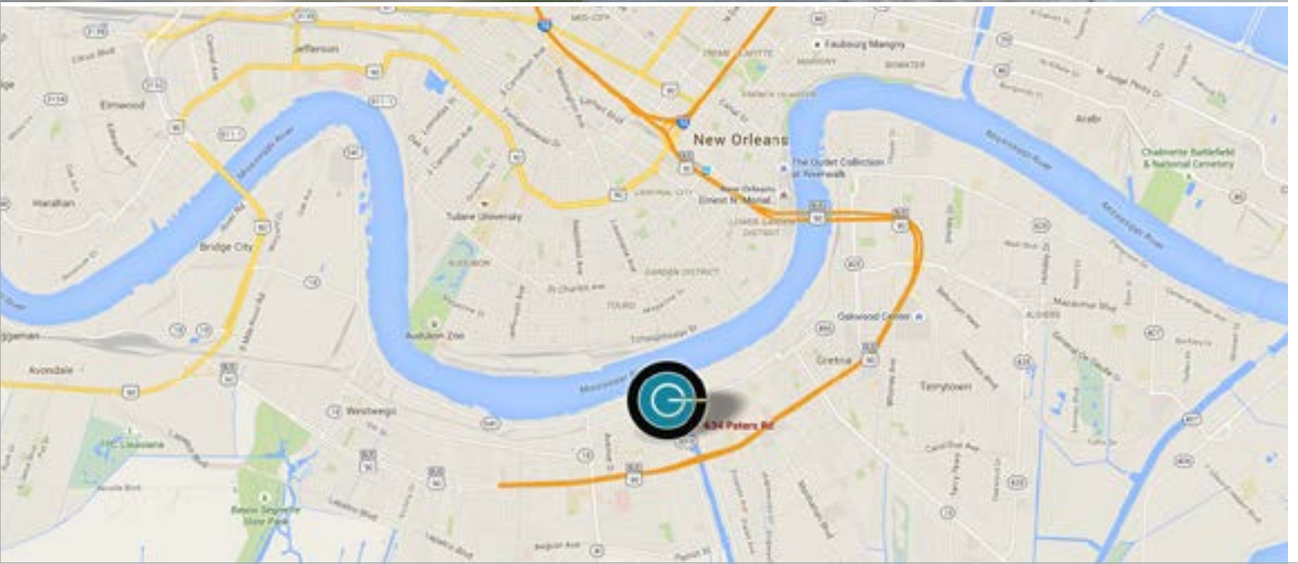
NAME	QTY	WM
95' FRV (J.L. O'Brien)	1	WM
46' FRV (R.W. Armstrong)	1	WM
60' SW FRV (CGA 76)	1	WM
56' SW FRV (CGA-72)	1	WM
Marco SWS (CGA 52)	1	WM
249 Barrel Storage Barge (CGA 8)	1	
Boom Barge (CGA 300)	1	
25,000'/43" Autoboom	1	

FIELD GUIDE HARVEY, LA (H-LA)



SITE INFORMATION 634 Peters Rd, Harvey, LA 70058

Office Telephone:	888.242.2007
24 Hour Telephone:	888.242.2007



CONTRACTOR SUPPORT

COMPANY NAME	PHONE
ES&H	877.437.2634
Ampol	504.361.4321
E3	844.333.0939
T&T Marine	409.744.1222
AEIS	833.571.0495

TRUCKING SERVICE

United Vision: Al Domangue	985.209.2326
Venture Transport	800.880.8482
ACME	985.868.7600

CRANE SERVICE

G&T Crane Service	504.367.7464

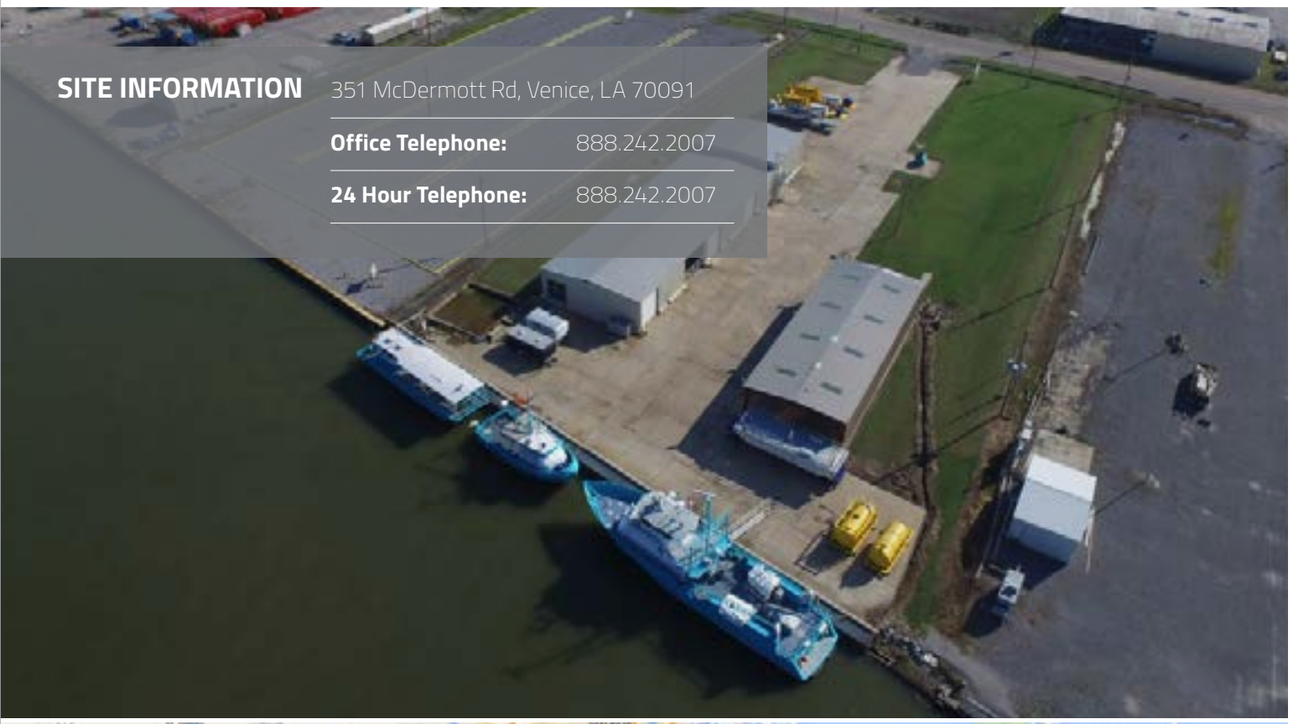
FUEL DOCKS

Stone Fuel Service	504.366.3401

EQUIPMENT LIST

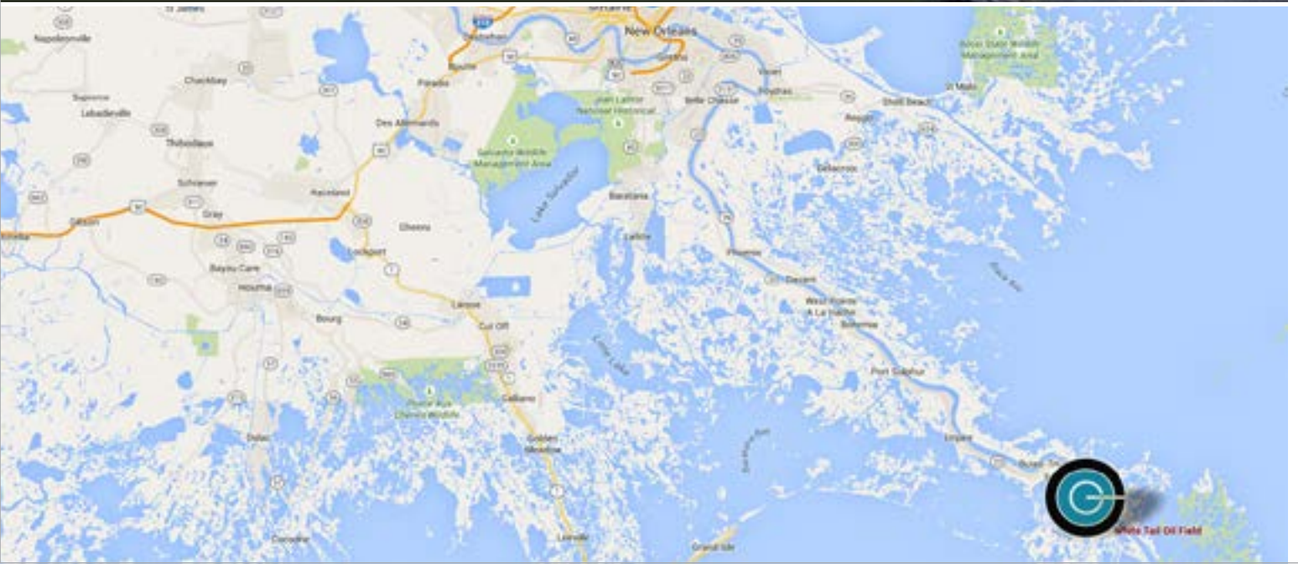
NAME	QTY	WM
HOSS	1	WM
Rigid Skimming Arms (KOSEQ)	6	
Foilex Skim Package (TDS 150)	1	
Foilex 250 Skimmer	3	
Drum Skimmer Package "4-Drum"	1	
1,430' Containment Boom–67" (Sea-Sentry)	1	
12,000' Containment Boom–43" (Oil Stop)	1	
Fire Boom	2	
Dispersant Spray Skid	1	
Primary Rehabilitation Trailer	1	
Husbandry Trailer	1	
Supply Trailer	1	
Wildlife Scare Cannons (Sets of 12)	2	
Corexit 9527 (Tote Tank)	1	
Dispersant Spray Skid	1	

FIELD GUIDE VENICE, LA (V-LA)



SITE INFORMATION 351 McDermott Rd, Venice, LA 70091

Office Telephone:	888.242.2007
24 Hour Telephone:	888.242.2007



CONTRACTOR SUPPORT

COMPANY NAME	PHONE
Oil Mop	504.912.6092
USES	504.279.9934 or 504.654.9007
Ampol	504.361.4321
E3	844.333.0939
T&T Marine	409.744.1222

TRUCKING SERVICE

United Vision	504.915.1957 or 985.209.2326
Venture Transport	800.880.8482
ACME	985.868.7600

CRANE SERVICE

Newman Crane	985.534.7507
Premier	504.390.3446
Grand Isle Shipyard	985.258.6952

FUEL DOCKS

Martin Fuel Dock	504.534.7402
John W. Stone	504.534.2613 or 504.394.5158

EQUIPMENT LIST

NAME	QTY	WM
46' FRV (Grand Bay)	1	WM
95' FRV (Breton Island)	1	WM
60' SW FRV (CGA 77)	1	WM
Marco SWS (CGA 53)	1	WM
249 Barrel Storage Barge (CGA 7)	1	
56' SW FRV (CGA 73)	1	WM

WORK METHODS



INITIAL SITE ASSESSMENT &
SITE SPECIFIC SAFETY PLAN (SSSP)
PAGE 78

CGA 300 BOOM BARGE AUTO BOOM
PAGE 80

HIGH VOLUME OPEN SEA SKIMMING SYSTEM (HOSS)
PAGE 82

502 FAST RESPONSE UNIT (FRU)
PAGE 84

KOSEQ ARM WORK METHODS
PAGE 86

95' FAST RESPONSE VESSEL (95' FRV)
PAGE 88

46' FAST RESPONSE VESSEL (46' FRV)
PAGE 90

56' SHALLOW WATER FAST RESPONSE VESSEL (56'SW FRV)
PAGE 92

60' SHALLOW WATER FAST RESPONSE VESSEL (60' SW FRV)
PAGE 94

MARCO SHALLOW WATER SKIMMER (MARCO SWS)
PAGE 96

INITIAL SITE ASSESSMENT & SITE SPECIFIC SAFETY PLAN (SSSP)



INITIAL SITE ASSESSMENT

These steps are for the initial site assessment once a CGA asset has arrived on scene. All response operations must be completed in accordance with CH 25 of the CGA Health and Safety Manual. These steps MUST be completed prior to beginning oil recovery operations. The recovery of oil cannot be started until a SSSP has been created and approved by the CGA Safety Officer and ALL crewmembers have reviewed and signed.

1. From a safe, upwind position, assign a minimum 2 member site assessment team
2. Designate a Team Leader and complete the Preliminary Evaluation Form
3. Establish who will take air monitoring readings and who will record findings
4. Once preliminary for is completed, team leader shall brief his team on hazards
5. Entire team must sign the preliminary evaluation form
6. Ensure meters are calibrated and bump tested, primary and backup
7. Ensure evacuation plan is discussed and necessary equipment is available if needed
8. Approach from upwind after a visual survey of area and approval to enter is granted
9. Ensure meter is functioning properly, take continuous readings on approach
10. A minimum of 6 readings shall be documented (unless Safety Officer deviates)
11. A minimum of 2 Benzene readings shall be taken (at the source and leading edge, and when total VOC > 5 PPM)
12. Ensure visual survey of area completed for additional, non respiratory, hazards
13. With help of Safety Officer, use findings to create the SSSP
14. Review approved SSSP with ALL response personnel and sign safety meeting roster
15. Begin skimming operations, continue air monitoring as directed by Safety Officer
16. Review SSSP daily, before each operational shift change and go over with response team. All changes in plan must be covered
17. Forward a copy of SSSP with Ops Manager and Safety Officer, keep hard copy accessible to crew and regulatory personnel on vessel at all times

CGA 300 BOOM BARGE AUTO BOOM





DEPLOYMENT

These are the steps to deploy 42" auto boom rapid packs from the boom barge.

1. Energize the barges hydraulic system
2. Use barge crane to remove aft hopper cover utilizing both set of slings attached to the lifting eyes and tag lines for control. Place on dock
3. Move palletized rapid pack (500' of 42" auto boom) to deck area with a pallet jack
4. Remove cover (and shrink wrap if applicable) and inspect for damage or missing caps
5. Loosen tied end of tow line and unravel for deployment vessel
6. Connect 2 "D" rings (same side) from lifting sling, place remain hooks in quick disconnect hook
7. Ensure all caps are tight
8. Lift boom from deck slowly and place in water
9. Pass tow line to deployment vessel, have them secure on deck
10. Repeat steps 3 – 9 with a second rapid pack, using separate deployment vessel
11. Deployment vessels will inflate and connect, if needed, using cable gate in apex
12. Repeat operation as many times as needed to support booming operations

RECOVERY

1. Energize boom recovery reel hydraulic power unit (HPU)
2. Loosen throttle knob and move to start position
3. Depress compression release lever on top of engine
4. Turn key to start position and adjust throttle lever to desired speed (rpm)
5. Install boom reel crossbars
6. Use hydraulics to move reel side inward (enough to allow install and removal of cross pieces)
7. Have second person hold all bars in place and close sides to secure bars
8. Attach towline from boom roll to crossbars and retrieve boom
9. Wind line around reel slowly taking slack until boom is reached
10. Wind with caps upward and chain to the port side
11. One person operate controls, two tend boom as it winds in
12. Remove END caps to allow air to escape prior to reaching reel
13. Loosen and retighten caps as needed to release trapped air
14. Remain tension on the towline to ensure a tight wrap and tie off end to coiled line
15. Move pallet into place at base of reel (in line with lifting table)
16. Place lifting harness where boom will fall in center
17. Raise lifting table and take on boom roll weight
18. Open both sides of reel and pull pins, rotate 90 degrees
19. Remove cross bars and ensure line is tight around boom
20. Lower lifting table so boom falls slowly onto pallet
21. Place lifting slings on top of roll and place cover over rapid pack
22. Move back into storage area with pallet jack

HIGH VOLUME OPEN SEA SKIMMING SYSTEM (HOSS)



DEPLOYMENT

1. Assemble team and assign roles; conduct safety/JSA briefing.
2. Verify communication system with team on deck (line of sight for daytime; radio/headsets for night ops).
3. Energize the barges pneumatic and hydraulic systems.
4. Unspool first section of boom onto deck and inflate (attach boom and buoy lights for night ops if applicable)
5. Deploy first section and secure boom with hold back deck chain and inflate boom (ensure lights used on tow line and sea anchor buoys if needed for night ops).
6. Repeat steps 3 and 4 until boom has been deployed to desired length for specific scenario.
7. Secure last section with safety chain and prepare transition skirt/ end connector for use with crane (labelled port/starboard).
8. Using crane to assist, barge personnel attach end connector with nuts and bolts
9. Secure boom to stern of barge.
10. Repeat steps 4-9 for opposite side boom to create a "V" configuration (both sides may be deployed simultaneously at the discretion of the barge supervisor considering conditions and response scenario).
11. Barge supervisor direct tugs to grab tow line, disconnect sea anchor and secure to vessel tow bit.
12. Tugs pull boom out into a "V" pattern.
13. Lower skimmers and begin skimming operations.

RECOVERY

1. Assemble team and assign roles; conduct safety/JSA briefing.
2. Verify communication system with team on deck (line of sight for daytime; radio/headsets for night ops).
3. Energize the barges pneumatic and hydraulic systems.
4. Raise and secure skimmers.
5. Direct tugs to individually release tow line and verify sea anchor has been removed (may be done independently or simultaneously depending on situation).
6. Use crane to remove boom end connector from barge stern.
7. Secure on deck with safety chain.
8. Remove transition skirt/end connector nuts and bolts and place on stern of barge.
9. Secure stern boom towline to boom reel.
10. Remove safety chain and begin spooling boom onto reel.
11. Remove the boom air chamber inflation valve covers immediately once on deck.
12. Complete boom recovery.
13. Repeat steps 6-12 on opposite side of barge (may be done simultaneously if needed considering the situation).

502 FAST RESPONSE UNIT (FRU)





These steps are for the loadout, deployment and recovery of the FRU skimming equipment deployed on the back deck of a utility vessel and using the outrigger booming configuration.

LOADOUT, DOCKSIDE

1. Inspect Mini Koseq 502 Self-contained Skid
2. Using dockside crane, load Koseq 502 skid on appropriately USCG certified vessel (see deck layout picture)
3. Load associated equipment and support box.
4. Remove pins and pull-out outriggers, crank down to stabilize.
5. Chain down skid and associated boxes, bind items to vessel.

DEPLOYMENT, ON SCENE

1. Start HPU by priming the engine and use hand crank to wind starter (See Startup Attached to HPU)
2. Unlock Peck and Hale Locks on boom arm from skid.
3. Apply discharge hose to skimmer pump on top of skimmer.
4. Using attached crane, lift skimmer arm over the side of the vessel and lower into the water.
5. Secure lines from skimmer to the boat.

RECOVERY

1. Release lines from boat.
2. Retrieve skimmer boom arm with crane attached to skid.
3. Place skimmer boom arm on skid, secure with Peck and Hale locks.
4. Saddle crane and shut down HPU.

OFFLOAD

1. Unchain skid and associated boxes.
2. Crank up stabilizers for outriggers push in, reinstall pins.
3. Using dockside crane offload associated equipment and support box.
4. Offload Koseq 502 skid.
5. Ensure all equipment inventoried and inspected HPU.

WM KOSEQ RIGID SKIMMING ARM (KOS)



LOADOUT AND ASSEMBLY

1. Mobilize the equipment to the load-out dock from storage
2. Inspect the selected vessel and mark deck positions
3. Offload containers from the trailers
4. Unload the 40 ft container onto the dock
5. Lift containers onto the vessel in required sequence
6. Install the 2 pedestal sections together on the 20 ft pedestal container
7. Connect the 40 ft and 20 ft containers together
8. Lash both containers to the deck of the vessel
9. Fill the water ballast tank
10. Lift the skimming arm onto the 40 ft support container
11. Lift the crane onto the pre-mounted pedestal
12. Connect hydraulics and control stands
13. Connect cables from crane arm to skimming arm
14. Function test all systems prior to departing dock

OPERATION

1. Connect towing bridle and bow line
2. Connect aft stabilizing line
3. Energize hydraulic power unit and energize equipment
4. Move the skimming arm over the side of the vessel and lower into the water
5. Guide the hydraulic hoses and towing lines over the side
6. Secure hydraulics to the railing
7. Move out the crane arm and skimming arm slowing while checking all fasteners
8. Lower the skimming arm into the water
9. Test hydraulic function of skimming arm
10. Position vessel in the oil and begin skimming operations

RECOVERY

1. Retrieve the skimming arm vertically from the water
2. Move the crane and skimming arms in slowly while recovering hydraulic hoses and the towing bridle
3. Move the skimming arm into position over the 40 ft. container and lower into support cradles
4. Secure arm via twist locks, return to the dock

DISASSEMBLE IN THE REVERSE ORDER OF ASSEMBLY

95’ FAST RESPONSE VESSEL (95’ FRV)



DEPLOYMENT

These steps are for deployment and recovery of the boom and skimming equipment once the vessel has arrived on scene.

1. Energize the vessels hydraulic system
2. Remove covers from boom box and skimmers
3. Remove boom blower, rigging, and hydraulic hoses
4. Fasten outrigger cables to outriggers
5. Pull line end around “A” frame to swing outrigger
6. Pull boom line through float blocks then through mid-ship bit guide and tie off
7. Secure line to float through top hole, then go over rail and secure to stern bit (use to pull back on outrigger once deployed and secured to bow)
8. Deploy out riggers and secure to bow
9. Tighten stern line
10. Deploy boom and inflate using blower
11. Lift skimmer using hydraulic control and secure with angle brackets
12. Pull boom tight to float using mid-ship line and secure to bit
13. Repeat steps 5-12 for other side of vessel
14. Once in oil, adjust skimmer speed as needed

RECOVERY

1. Un-tie boom from mid-ship bit and raise skimmer out of water
2. Remove angle brackets and lower skimmer on deck
3. Deflate each boom section as you pull end over roller and onto the deck
4. Rack outrigger back in cradle by letting stern line loose and releasing bow cable
5. Flake boom on top of skimmer
6. Repeat steps 1 – 5 for other side of vessel
7. Disconnect and stow all lines, cables, and hydraulic hoses
8. Cover skimmers and boom box.

46’ FAST RESPONSE VESSEL (46’ FRV)



DEPLOYMENT

These steps are for deployment and recovery of the boom and skimming equipment once the vessel has arrived on scene.

1. Energize the vessels hydraulic system
2. Use davit to pull boom out of storage and place on deck
3. Place the port and starboard boom ends in the outrigger floats
4. Unstrap and open the skimming doors
5. Lift one float into water using davit then disconnect davit cable
6. Connect davit cable to boom end with sling
7. Insert boom into stern skimmer door using the davit
8. Secure boom to bit above door with a strap
9. Pull outrigger cable to bow and secure
10. Repeat steps 5 – 9 for other side of vessel
11. Once in oil, adjust skimmer speed as needed

RECOVERY

1. Secure power to skimmers
2. Disconnect outrigger cable
3. Walk cable aft and secure in hole at outrigger pivot assembly
4. Connect davit cable to sling on boom
5. Using davit, pull boom out of skimmer door and secure on deck
6. Connect davit cable to line on outrigger float and secure back in cradle
7. Close and secure skimmer doors
8. Repeat steps 2 – 7 for other side of vessel
9. Secure vessel hydraulic system
10. If not contaminated, stow boom back in stowage

WM

56’ SHALLOW WATER FAST RESPONSE VESSEL (56’ SW FRV)



DEPLOYMENT

These are the steps to deploy the 56’ SW FRV skimming system.

1. Close the air tank valves on the hydraulic power unit (HPU) and the compressor
2. Start generator, plug in air compressor and start, build up air pressure
3. Ensure boom reel hydraulic shut off valve is closed
4. Verify boom reel controls are all in neutral position
5. Energize the HPU
6. Once on scene, maneuver vessel into place and set spud to hold position
7. For advancing skimming ops, ensure support boats have blowers
8. Open the hydraulic shut off valve and feed boom section off the reel with valves facing aft
9. Support vessels will inflate boom as it is being deployed
10. Once deployed, attach boom end to skimmer
11. Repeat steps 8 – 10 for the other section of boom
12. Close boom reel hydraulic shut off valve
13. Attach skimming pads to the skimmer belts.
14. Slightly raise skimmers and remove stands located underneath
15. Manually slide the skimmers forward
16. Use hydraulic controls to lower skimmers into water
17. Lift spud, tow boom into “V” configuration in front of skimmer as needed
18. Remove & secure sump trough hatch covers on both sides of vessel
19. Attach yellow skirts which will funnel the oil into the sump troughs
20. Attach decantation pipe at bow using the cam locks, verify that it overlaps the skimmer
21. Align valves (use diagram) in pump room to pump oil from sumps to recovered oil tanks
22. Set skimmers to optimal recovery speed

RECOVERY

1. Cease skimming operations
2. Remove decanting pipe
3. Remove yellow skirts under the skimmers
4. Replace sump trough covers
5. Raise skimmers
6. Manually pull the skimmers back onto deck and set on stands
7. Detach boom from skimmer and secure to boom reel
8. Recover boom onto reel with the chain facing aft and the valves forward
9. Repeat steps 7 – 8 for other section of boom
10. Close hydraulic shut off valve
11. If necessary, raise and secure spud; retrieve anchor at stern

60’ SHALLOW WATER FAST RESPONSE VESSEL (60’ SW FRV)



DEPLOYMENT

These steps are for deployment and recovery of the boom and skimming equipment once the vessel has arrived on scene.

1. Energize the hydraulic system
2. Unspool boom off reel
3. Attach Port/STBD boom to outrigger floats, hang boom on side of outriggers
4. Inflate Port/STBD boom
5. Attach Port/STBD outrigger cables
6. Put backup lines on Port/STBD outriggers
7. Lower bow skimmer door (remember to pull pins & ratchet strap)
8. Lift outrigger, swing out until it is positioned forward of the vessel. Install hanging boom end connector into the boom adapter plate slot.
9. Unhook Safety chain and lower skimmer
10. Add water to sump as needed for ballast

RECOVERY

1. Loosen backup line and swing outrigger forward
2. Remove boom end connector from boom adapter plates.
3. Remove outrigger cable and swing outrigger back to vessel’s stern, lift outrigger with winch and secure in cradle
4. Ensure boom adapter plates are folded in before raising bow skimmer door
5. Raise and secure bow door.
6. Deflate and remove Port & STBD boom
7. Reel boom back onto reel.
8. Remove and stow outrigger cables and lines.

WM

MARCO SHALLOW WATER SKIMMER (MARCO SWS)



DEPLOYMENT

These steps are for deployment and recovery of the boom and skimming equipment once the vessel has arrived on scene.

1. Energize the vessel hydraulic system
2. Crank hand winch to lower skimming swath into water
3. Place pins through skimming swath to secure it to the vessel
4. Remove metal plate (splash guard while underway) from under skimming belt
5. Place pads onto Velcro skimming belt
6. Crank hand winch to lower skimming belt into the water.
7. Activate induction pump to draw oil into skimming belt.
8. Activate skimming belt to begin oil collection

RECOVERY

1. Disengage hydraulics to skimmer belt and induction pump
2. Shut down hydraulic power pack
3. Crank hand winch to raise skimmer belt
4. Remove pads from skimmer belt (If not contaminated, store on board)
5. Remove pins from skimming swath
6. Crank hand winch to raise skimming swath out of water
7. Place splash guard back under skimming belt