Clean Rivers Cooperative (CRC) Technical Manual for the Cathlamet Planning Standard Area

Description: This manual was developed in accordance with WAC 173-182-349 and is for planning purposes only. It includes equipment appropriate for the operating environment on the Columbia River and can be used to show how recovery and storage systems could be put together and applied to the recovery and storage planning standards.

Plan Holder: Maritime Fire & Safety Association (MFSA)

Worst Case Discharge: The worst case discharge listed in the MFSA plan is 350,000 barrels.

Oil Types: The oil types handled by MFSA are 1-5.

Planning Assumptions: Clean Rivers equipment was used to create this technical manual. In certain systems non-dedicated vessels or vessels of opportunity were listed to enhance recovery operations or provide logistics. Clean Rivers Cooperative has contracts with NRC Environmental Services for additional "as-available" equipment. In addition, MFSA member equipment could be used to help deploy recovery and storage systems. Two Tidewater barges are listed as storage systems and are dedicated to spill response on the Columbia River. Several dedicated trucks exist in Portland to move equipment. However in the calculation of the travel times, equipment that moves over the road was given a default mobilization time of 3 hours. Additional Clean Rivers equipment not listed in this manual, including portable skimmers and storage bladders, can be found on the Western Response Resource List (www.wrrl.us). This additional equipment could be used for shoreside collection strategies or as portable skimmers and storage paired with non-dedicated vessels for on-water recovery as needed.

Training Levels: Response Personnel hold current 8, 24 or 40 hour HAZWOPER certification in compliance with 29 CFR 1910.120 and WAC 296-824-300. Where required by USCG regulation, personnel that have vessel crewing assignments and responsibilities hold appropriate USCG Merchant Mariner Licenses and Endorsements.

Updates and Distribution: This planning document, per WAC 173-182-349, does not bind Clean Rivers or Plan holders to use the specific tactics during a spill or drill or guarantee what will occur in an actual spill event. Information is subject to change. This manual was created on 11/11/2015 and revised on 11/04/2024.

SYSTEM RECOVERY/STORAGE							
System Type	**System Name**	**Qty**	**ETA (hours)**	**Planning Hour**	**Total Recovery**	**Total Storage (bbls)**	**Page**
On Water Recovery (w/storage)	OSRV Mark O. Hatfield	1	5	6	3,720	24	3
On Water Recovery (w/storage)	OSRV HW Zarling	1	2	6	3,720	24	5
On Water Recovery (w/storage)	OSRV MFSA 1	1	5	6	3,720	24	7
On Water Recovery (w/storage)	OSRV Clean Rivers 1	1	4	6	3,720	24	9
On Water Recovery (w/storage)	Shallow Water Recovery Barge w/Marco Belt Skimmer	3	4/5	6	10,765	300	11
On Water Recovery (w/storage)	Shallow Water Recovery Barge w/ Marco Belt Skimmer	2	5	6	7,176	200	17
Shoreside Recovery (w/storage)	2000 gallon fast tank w/36” Drum Skimmer	2	5	6	1,782	94	23
Shoreside Recovery (w/storage)	1000 gallon fast tank w/various skimmers	6	5	6	5,034	144	25
On Water Storage	Shallow Water Barge	5	4	6	0	500	27
On Water Storage	Current Buster #2	1	4	6	0	94	29
On Water Storage (w/recovery)	TBL Barge #4	1	11	12	13,371	12,000	31
On Water Storage (w/recovery)	TBL Barge #2	1	11	12	10,628	18,000	33

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- OSRV Mark O. Hatfield

Tactic purpose and description: The purpose of this tactic is on-water recovery of oil in a protected or shallow water operating environment. Swath width is enhanced using one workboat and 300 feet of boom. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is off loaded to available on-water storage. See Storage Systems, "Shallow Water Barge" or "TBL Barge" for more information.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): The OSRV's have deck lights for night time operations. Night operations are based on safety and environmental conditions.

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): When setting up the skimmer, approximately 2/4 personnel are needed. After the skimming system is set up, it will only take 2 personnel to run the OSRV safely. It takes 2 personnel to operate the workboat for enhanced skimming.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ dedicated	29033	OSRV	OSRV3	OSRV Mark O. Hatfield	34' Kvichak W/ Marco Belt skimmer (includes boom from WRRL ID 29143)	3588	24	0	2	Cathlamet	WA	Elochoman Marina

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ dedicated	29142	Boom	B2	20" Boom	American Marine	0	0	1000	0	Cathlamet	OR	Elochoman Marina
PRC/ dedicated	31080	Workboat	WB4	20' Workboat	Alumaweld III w/ 105 HP engine	0	0	0	2	Portland	OR	Trailer

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- OSRV Mark O. Hatfield

Offloading Detail

Offloading narrative and pump rate description: The oil spill response vessel may be offloaded into a barge, vacuum truck, or shoreside storage. Transfer pump is rated at 350 gpm or 8.3 bbl/min

Mobilization Detail

Mobilization method for recovery device (land/water): Water

Mobilization method for each workboat(s): Land

Transit speeds (only list if an alternative was granted by Ecology): OSRV Mark O. Hatfield, 24 kts

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 5 hours for the workboat. Hatfield is located within the Cathlamet planning standard area.

Support resources for mobilization: Pickup truck to move workboat on trailer.

Support resources for deployment: Boat launch needed to deploy workboat.

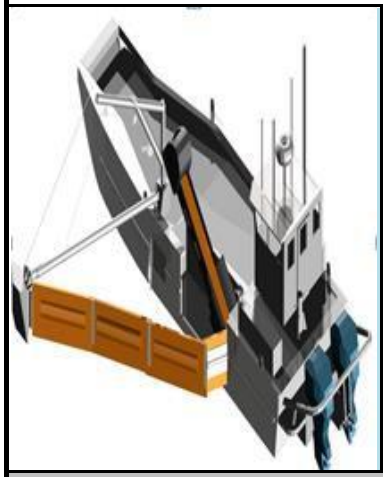
Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff working on vessel.

Photographs of equipment:

Mark O. Hatfield

Alumaweld III Workboat

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- HW Zarling



Tactic purpose and description: The purpose of this tactic is on-water recovery of oil in a protected or shallow water operating environment. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is off loaded to available on-water storage. See Storage Systems, "Shallow Water Barge" or "TBL Barge" for more information.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): The OSRV's have deck lights for night time operations. Night operations are based on safety and environmental conditions.

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): When setting up the skimmer, approximately 2/4 personnel are needed. After the skimming system is set up, it will only take 2 personnel to run the OSRV safely.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29032	OSRV	OSRV3	OSRV HW Zarling	34' Kvichak W/ Marco Belt skimmer	3588	24	0	2	Portland	OR	Aquatic Contracting

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29143	Boom	B2	20" Boom	American Marine	0	0	1000	0	Portland	OR	Aquatic Contracting

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- HW Zarling

Offloading Detail

Offloading narrative and pump rate description: The oil spill response vessel may be offloaded into a barge, vacuum truck, or land side storage. Transfer pump is rated at 350 gpm or 8.3 bbl/min

Mobilization Detail

Mobilization method for recovery device (land/water): Water

Mobilization method for each workboat(s): N/A

Transit speeds (only list if an alternative was granted by Ecology): HW Zarling, 24 knots.

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 4 hours (1 hour mobilization + 3 hour transit)

Support resources for mobilization: None

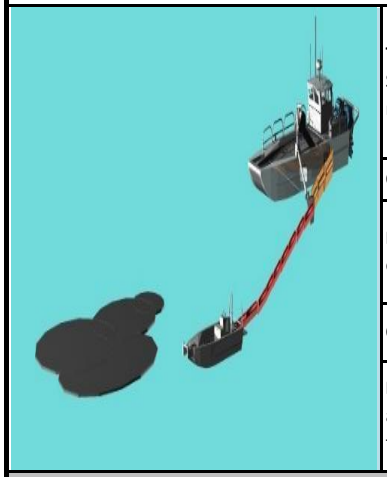
Support resources for deployment: None

Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff working on vessel.

Photographs of equipment:

H.W. Zarling

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- MFSA 1



Tactic purpose and description: The purpose of this tactic is on-water recovery of oil in a protected or shallow water operating environment. Swath width is enhanced with 300' of boom and a workboat. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is off loaded to available on-water storage. See Storage Systems, "Shallow Water Barge" or "TBL Barge" for more information.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): The OSRV's have deck lights for night time operations. Night operations are based on safety and environmental conditions.

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): When setting up the skimmer approximately 2/4 personnel are needed. After the skimming system is set up, it will only take 2 personnel to run the OSRV safely. It takes 2 people to operate the workboat for enhanced skimming.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29034	OSRV	OSRV3	OSRV MFSA 1	34' Kvichak W/ Marco Belt Skimmer (includes boom from WRRL ID 29141	3588	24	0	2	Longview	WA	Willow Grove

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29414	Boom	B2	20" Boom	American Marine	0	0	1000	0	Longview	WA	MFSA 1
PRC/ Dedicated	37400	Vessel	WB4	Freedom Response Vessel	23' North River	0	0	0	2	Portland	OR	Portland Base

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- MFSA 1

Offloading

Offloading narrative and pump rate description: The oil spill response vessel may be offloaded into a barge, vacuum truck, shoreside storage. Transfer pump is rated at 350 gpm or 8.3 bbl/min.

Mobilization

Mobilization method for recovery device (land/water): Water

Mobilization method for each workboat(s): North River Work boat mobilized via truck and trailer.

Transit speeds (only list if an alternative was granted by Ecology): 22 kts for MFSA 1

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 2 hours for MFSA 1, 5 hours for the North River

Support resources for mobilization: Pickup truck to move workboats on trailer.

Support resources for deployment: Boat ramp needed to launch workboat.

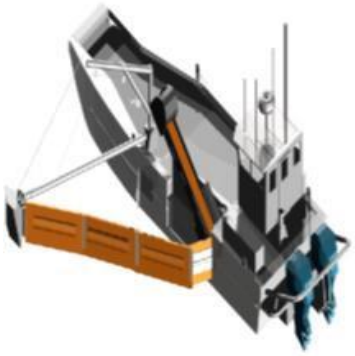
Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff working on vessel.

Photographs of equipment:

North River

MFSA 1

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Clean Rivers 1



Tactic purpose and description: The purpose of this tactic is on-water recovery of oil in a protected or shallow water operating environment. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is off loaded to available on-water storage. See Storage Systems, "Shallow Water Barge" or "TBL Barge" for more information.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): The OSRV's have deck lights for night time operations. Night operations are based on safety and environmental conditions.

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): when setting up skimmer approximately 2/4 personnel. After the skimming system is set up, it will only take 2 personnel to run the OSRV safely.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29035	OSRV	OSRV3	OSRV Clean Rivers 1	34' Kvichak w/ Marco Belt Skimmer (includes boom from WRRL ID 29144)	3588	24	0	2	Portland	OR	Sause Brothers

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29144	Boom	B2	20" Boom	American Marine	0	0	1000	0	Portand	OR	Clean Rivers 1

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Clean Rivers 1

Offloading Detail

Offloading narrative and pump rate description: The oil spill response vessel may be offloaded into a barge, vacuum truck, shoreside storage. Transfer pump is rated at 350 gpm or 8.3 bbl/min

Mobilization Detail

Mobilization method for recovery device (land/water): Water

Mobilization method for each workboat(s): N/A

Transit speeds (only list if an alternative was granted by Ecology): 22 knots

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 4 hours

Support resources for mobilization: None

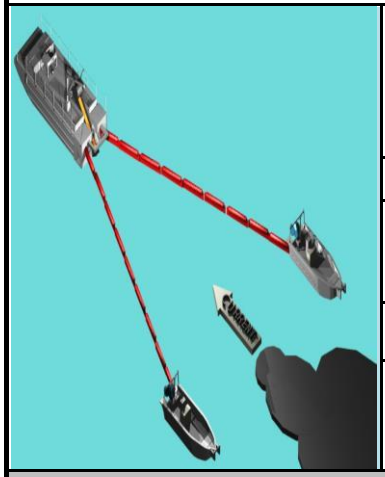
Support resources for deployment: None

Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff working on vessel.

Photographs of equipment:

OSRV Clean Rivers 1

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 101-29



Tactic purpose and description: The purpose of this tactic is on-water recovery of oil in a protected or shallow water operating environment. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is off loaded to available on-water storage or to shoreside storage. 2 workboats from NRCES or non-dedicated workboats can be used to enhance recovery using boom stored on board the shallow water barge. It is also possible to connect 2 Shallow Water Recovery barges together to double the storage and recovery with the same amount of workboats.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): Not capable of night operations

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): when setting up the skimmer approximately 2/4 personnel are needed. After the skimming system is set up, it will only take 2 personnel to run the skimmer safely. 2 personnel are required for the pushboat, and 2 each for any workboats used to enhance recovery.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29054	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Marco Belt Skimmer (includes boom from WRRL ID 29149)	3588	100	0	2	Astoria	OR	Tongue Point

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/Dedicated	29150	Boom	B3	12" Boom	American Marine	0	0	200	0	Astoria	OR	SWRB 101-29
PRC/Dedicated	29039	Vessel	WB4	20' Workboat	20' Alumaweld	0	0	0	2	Portland	OR	Portland Base
Non-dedicated	VOO	Vessel	WB4						2	Columbia River		
Non-dedicated	VOO	Vessel	WB4						2	Columbia River		

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 101-29

Offloading Detail

Offloading narrative and pump rate description: The oil spill response vessel may be offloaded into a barge, vacuum truck, shoreside storage. Transfer pump is rated at 350 gpm or 8.3 bbl/min

Mobilization Detail

Mobilization method for recovery device (land/water): SWRB mobilized using a truck and trailer.

Mobilization method for each workboat(s): Dedicated workboat mobilized using a truck and trailer.

Transit speeds (only list if an alternative was granted by Ecology): N/A

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 4 hours for SWB, 5 hours for workboat

Support resources for mobilization: Two trucks are needed to move the trailers.

Support resources for deployment: Two non-dedicated workboats can be used to enhance skimming. Boat ramp is needed to launch the workboats.

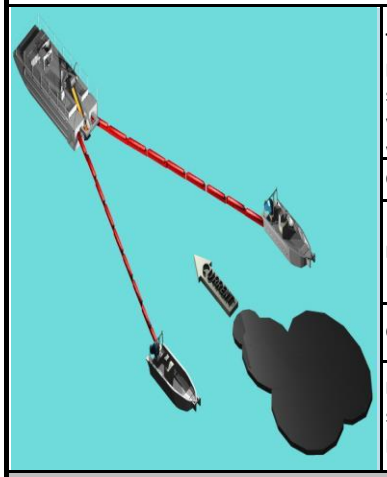
Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff working on vessels.

Photographs of equipment:

20' Workboat

Shallow Water Recovery Barge

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 102-29



Tactic purpose and description: The purpose of this tactic is on-water recovery of oil in a protected or shallow water operating environment. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is off loaded to available on-water storage or to shoreside storage. 2 workboats from NRCES or non-dedicated workboats can be used to enhance recovery using boom stored on board the shallow water barge. It is also possible to connect 2 Shallow Water Recovery barges together to double the storage and recovery with the same amount of workboats.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): Not capable of night operations

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): when setting up the skimmer approximately 2/4 personnel are needed. After the skimming system is set up, it will only take 2 personnel to run the skimmer safely. 2 personnel are required for the pushboat, and 2 each for any workboats used to enhance recovery.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29053	OSRV	OSRV3	Shallow Water Recovery Barge	30' American Eagle w/ Marco Belt Skimmer (includes boom from WRRL ID 29148)	3588	100	0	2	Clatskanie	OR	Columbia Pacific Bio-Refinery

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/Dedicated	29148	Boom	B3	12" Boom	American Marine	0	0	200	0	Clatskanie	OR	SWB 102-29
PRC/Dedicated	29030	Vessel	WB3	FRV Independence	32' Browns (includes boom from WRRL ID 29132)	0	0	0	2	Longview	WA	Willow Grove
Non-dedicated	VOO	Vessel	WB4						2	Columbia River		
Non-dedicated	VOO	Vessel	WB4						2	Columbia River		

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 102-29

Offloading Detail

Offloading narrative and pump rate description: The oil spill response vessel may be offloaded into a barge, vacuum truck, or shoreside storage. Transfer pump is rated at 350 gpm or 8.3 bbl/min

Mobilization Detail

Mobilization method for recovery device (land/water): SWRB mobilized using a truck and trailer.

Mobilization method for each workboat(s): Dedicated workboat is stored and travels to site on water.

Transit speeds (only list if an alternative was granted by Ecology): FRV Independence @ 9kts

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 3 hours for the Independence, 4 hours for the SWRB.

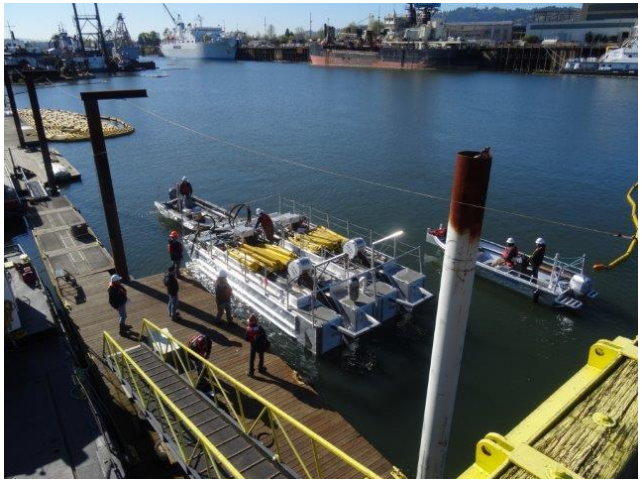
Support resources for mobilization: Truck and trailer for the SWRB.

Support resources for deployment: Two non-dedicated workboats can be used to enhance skimming. Boat ramp is needed to launch the workboats.

Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff working on vessel.

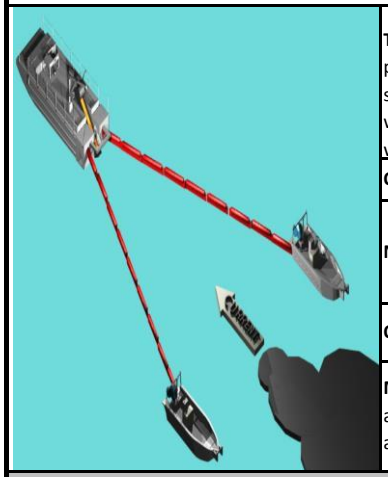
Photographs of equipment:

FRV Independence



Shallow Water Recovery Barge

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 103-29



Tactic purpose and description: The purpose of this tactic is on-water recovery of oil in a protected or shallow water operating environment. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is off loaded to available on-water storage or to shoreside storage. 2 workboats from NRCES or non-dedicated workboats can be used to enhance recovery using boom stored on board the shallow water barge. It is also possible to connect 2 Shallow Water Recovery barges together to double the storage and recovery with the same amount of workboats.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): Not capable of night operations

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): when setting up the skimmer approximately 2/4 personnel are needed. After the skimming system is set up, it will only take 2 personnel to run the skimmer safely. 2 personnel are required for the pushboat, and 2 each for any workboats used to enhance recovery.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29052	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Marco Belt Skimmer (includes boom from WRRL ID 29149	3588	100	0	2	Longview	WA	Port of Longview

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/Dedicated	29149	Boom	B3	12" Boom	American Marine	0	0	200	0	Longview	WA	SWRB 103-29
PRC/Dedicated	29029	Vessel	WB3	FRV Columbia Responder	32' Kvichak	0	0	0	2	Astoria	OR	West Mooring Basin, Port of Astoria
Non-dedicated	VOO	Vessel	WB4						2	Columbia River		
Non-dedicated	VOO	Vessel	WB4						2	Columbia River		

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 103-29

Offloading Detail

Offloading narrative and pump rate description: The oil spill response vessel may be offloaded into a barge, vacuum truck, or shoreside storage. Transfer pump is rated at 350 gpm or 8.3 bbl/min

Mobilization Detail

Mobilization method for recovery device (land/water): SWRB mobilized using a truck and trailer.

Mobilization method for each workboat(s): Dedicated workboat is stored and travels to site on water.

Transit speeds (only list if an alternative was granted by Ecology): FRV Columbia Responder @ 16kts

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 3 hours for the Columbia Responder, 4 hours for the SWRB

Support resources for mobilization: Truck and trailer for the SWRB.

Support resources for deployment: Two non-dedicated workboats can be used to enhance skimming. Boat ramp needed to deploy the recovery barge and workboats.

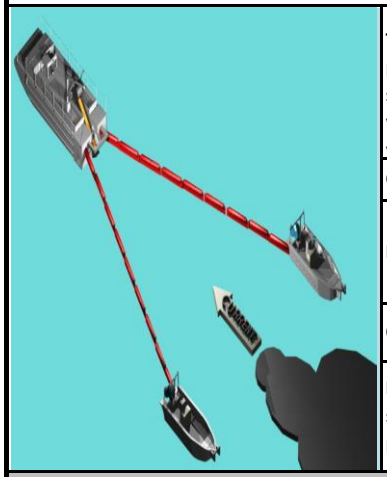
Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff working on vessel.

Photographs of equipment:

FRV Columbia Responder

Shallow Water Recovery Barge

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 105-29



Tactic purpose and description: The purpose of this tactic is on-water recovery of oil in a protected or shallow water operating environment. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is off loaded to available on-water storage or to shoreside storage. 2 workboats from NRCES or non-dedicated workboats can be used to enhance recovery using boom stored on board the shallow water barge. It is also possible to connect 2 Shallow Water Recovery barges together to double the storage and recovery with the same amount of workboats.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): Not capable of night operations

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): when setting up the skimmer approximately 2/4 personnel are needed. After the skimming system is set up, it will only take 2 personnel to run the skimmer safely. 2 personnel are required for the pushboat, and 2 each for any workboats used to enhance recovery.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29050	OSRV	OSRV3	Shallow Water Recovery Barge	30' American Eagle w/ Marco Belt Skimmer (includes boom from WRRL ID 29146)	3588	100	0	2	Portland	OR	Front Ave.

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/Dedicated	29146	Boom	B3	12" Boom	American Marine	0	0	200	0	Portland	OR	SWRB 105-29
PRC/Dedicated	29031	Vessel	WB3	FRV Protector	34' Munson	0	0	0	2	St. Helens	OR	Dillards, St. Helens Marina
Non-dedicated	VOO	Vessel	WB4						2	Columbia River		
Non-dedicated	VOO	Vessel	WB4						2	Columbia River		

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 105-29

Offloading Detail

Offloading narrative and pump rate description: The oil spill response vessel may be offloaded into a barge, vacuum truck, or shoreside storage. Transfer pump is rated at 350 gpm or 8.3 bbl/min

Mobilization Detail

Mobilization method for recovery device (land/water): SWRB mobilized using a truck and trailer.

Mobilization method for each workboat(s): Water

Transit speeds (only list if an alternative was granted by Ecology): None

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 9 hours for the FRV Protector (5kt speed), 5 hours for the SWRB

Support resources for mobilization: Truck and trailer for the SWRB.

Support resources for deployment: Two non-dedicated workboats can be used to enhance skimming. Boat ramp is needed to deploy the recovery barge and workboats.

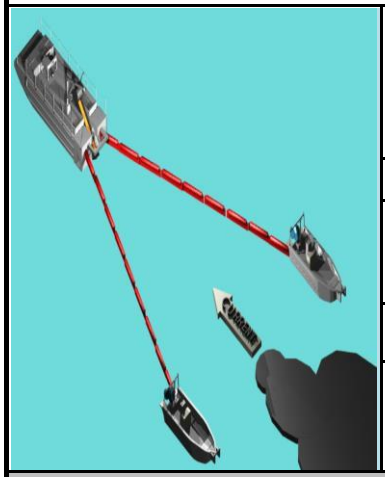
Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff working on vessel.

Photographs of equipment:

FRV Protector

Shallow Water Recovery Barge

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 100-29



Tactic purpose and description: The purpose of this tactic is on-water recovery of oil in a protected or shallow water operating environment. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is off loaded to available on-water storage or to shoreside storage. 2 workboats from NRCES or non-dedicated workboats can be used to enhance recovery using boom stored on board the shallow water barge. It is also possible to connect 2 Shallow Water Recovery barges together to double the storage and recovery with the same amount of workboats.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): Not capable of night operations

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): when setting up the skimmer approximately 2/4 personnel are needed. After the skimming system is set up, it will only take 2 personnel to run the skimmer safely. 2 personnel are required for the pushboat, and 2 each for any workboats used to enhance recovery.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29055	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Marco Belt Skimmer (includes boom from WRRL ID 29151)	3588	100	0	2	Portland	OR	Portland Base

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/Dedicated	29151	Boom	B3	12" Boom	American Marine	0	0	200	0	Portland	OR	SWB 100-29
PRC/Dedicated	31080	Vessel	WB4	20' Workboat	20' Alumaweld II w/90 hp	0	0	0	2	Portland	OR	Portland Base
Non-dedicated	VOO	Vessel	WB4						2	Columbia River		
Non-dedicated	VOO	Vessel	WB4						2	Columbia River		

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 100-29

Offloading

Offloading narrative and pump rate description: The oil spill response vessel may be offloaded into a barge, vacuum truck, or shoreside storage. Transfer pump is rated at 350 gpm or 8.3 bbl/min

Mobilization Detail

Mobilization method for recovery device (land/water): SWRB mobilized using a truck and trailer.

Mobilization method for each workboat(s): Dedicated workboat mobilized using a truck and trailer.

Transit speeds (only list if an alternative was granted by Ecology): None

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 5 hours for workboat, 5 hours for SWRB

Support resources for mobilization: Two trucks are needed to move the trailers.

Support resources for deployment: Two non-dedicated workboats can be used to enhance skimming.

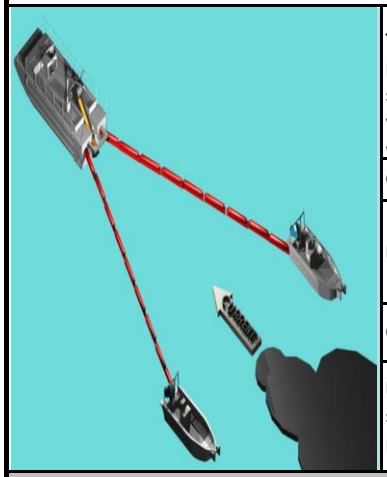
Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff working on vessel.

Photographs of equipment:

20’ Workboat

Shallow Water Recovery Barge

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 106-29



Tactic purpose and description: The purpose of this tactic is on-water recovery of oil in a protected or shallow water operating environment. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is off loaded to available on-water storage or to shoreside storage. 2 workboats from NRCES or non-dedicated workboats can be used to enhance recovery using boom stored on board the shallow water barge. It is also possible to connect 2 Shallow Water Recovery barges together to double the storage and recovery with the same amount of workboats.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): Not capable of night operations

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): when setting up the skimmer approximately 2/4 personnel are needed. After the skimming system is set up, it will only take 2 personnel to run the skimmer safely. 2 personnel are required for the pushboat, and 2 each for any workboats used to enhance recovery.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29057	OSRV	OSRV3	Shallow Water Recovery Barge	30' Kvichak w/ Marco Belt Skimmer (includes boom from WRRL ID 29147)	3588	100	0	2	Portland	OR	Portland Base

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/Dedicated	29147	Boom	B3	12" Boom	American Marine	0	0	200	0	Portland	OR	Portland Base
PRC/Dedicated	29039	Vessel	WB4	20' Workboat	Alumaweld I	0	0	0	2	Portland	OR	Portland Base
Non-dedicated	VOO	Vessel	WB4		w/115 hp				2	Columbia River		
Non-dedicated	VOO	Vessel	WB4						2	Columbia River		

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Shallow Water Recovery Barge 106-29

Offloading Detail

Offloading narrative and pump rate description: The oil spill response vessel may be offloaded into a barge, vacuum truck, or shoreside storage. Transfer pump is rated at 350 gpm or 8.3 bbl/min

Mobilization Detail

Mobilization method for recovery device (land/water): SWRB mobilized using a truck and trailer.

Mobilization method for each workboat(s): Dedicated workboat mobilized using a truck and trailer.

Transit speeds (only list if an alternative was granted by Ecology): None

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 5 hours for workboat, 5 hours for SWRB

Support resources for mobilization: Two trucks are needed to move the trailers.

Support resources for deployment: Two non-dedicated workboats can be used to enhance skimming. Boat ramp is needed to deploy workboats and recovery barge

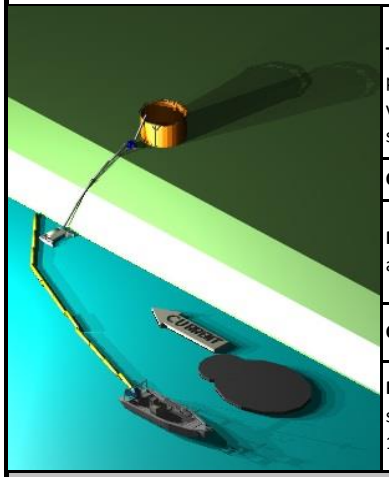
Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff working on vessel.

Photographs of equipment:

20’ Workboat

Shallow Water Recovery Barge

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- 36" Coated Drum Skimmer



Tactic purpose and description: The purpose of this tactic is shoreside recovery of oil in a protected or shallow water operating environment. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is collected in a portable fast tank and then removed via vacuum truck. Length of boom can vary based on conditions between 100' and 1000'. Equipment listed below is for two shoreside skimming systems.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): Capable of night operations as long as location is in a lighted area. Shoreside operation of skimmer is possible during the night.

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): when setting up skimmer, shoreside storage and deploying the boom approximately 3 personnel are needed. It would only take 2 people after the system is set up for each 12 hr shift.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29121 or 29120	Skimmer Portable	SK3	36" Coated Drum Skimmer (Unit ID 544-56)	Yanmar Diesel Hydraulic Power Unit (ID 800-58) and 3" Hydraulic Diaphragm Transfer Pump (636-57)	891	0	0	0	Portland	OR	Portland Base

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	30500	Vessel	WB4	18' Skiff	18' Skiff w/ 25hp	0	0	0	1	Portland	OR	Kinder Morgan Warehouse
PRC/ Dedicated	31675 or 31676	Storage	PS4	2000 gal. Portable Storage Tank	Fast Tank Storage Tank	0	47	0	0	Portland	OR	Portland Base
PRC/ Dedicated	29138	Boom	B2	20" Boom	American Marine	0	0	2500	0	Skamokawa	WA	28' Trailer, Vista Park

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- 36" Coated Drum Skimmer

Offloading Detail

Offloading narrative and pump rate description: Fast tank would be pumped out by a vacuum truck.

Mobilization Detail

Mobilization method for recovery device (land/water): Mobilized via truck over land.

Mobilization method for each workboat(s): Skiff would be launched from the shore to deploy boom in order to deflect oil to the skimmer.

Transit speeds (only list if an alternative was granted by Ecology): N/A

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 5 hours

Support resources for mobilization: Pickup trucks needed to transport the skiff and skimmers.

Support resources for deployment: Anchors for deployment of boom would vary based on the operating environment. Boom-vane could also be used.

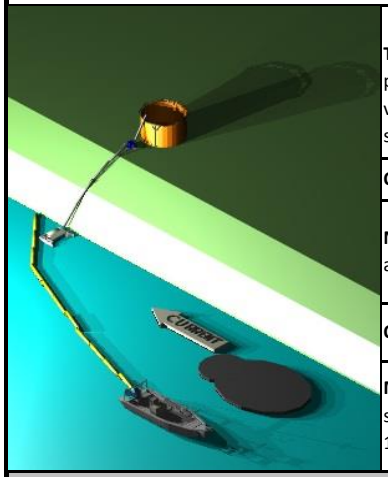
Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff.

Photographs of equipment:

18’ Skiff

Portable Storage and Drum Skimmer

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Various Skimmers w/ 1000 gallon fast tank



Tactic purpose and description: The purpose of this tactic is shoreside recovery of oil in a protected or shallow water operating environment. To promote the ability for continuous recovery operations, the tactic assumes that recovered oil is collected in a portable fast tank and then removed via vacuum truck. Length of boom can vary based on conditions between 100' and 1000'. Equipment listed below is for six shoreside skimming systems.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): Capable of night operations as long as location is in a lighted area. Shoreside operation of skimmer is possible during the night.

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): when setting up skimmer, shoreside storage and deploying the boom approximately 3 personnel are needed. It would only take 2 people after the system is set up for each 12 hr shift.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	4 -total (2-36" 2-12")	Skimmer Portable	SK3	36" or 12" Coated Drum Skimmer	Yanmar Diesel Hydraulic Power Unit and 3" Hydraulic Diaphragm Pump	891	0	0	0	Portland	OR	Portland Base
PRC/ Dedicated	29114	Skimmer Portable	SK4	Ro-Clean Rope Mop Skimmer	Hatz Diesel	30	0	0	0	Portland	OR	Kinder Morgan Warehouse
PRC/ Dedicated	31773	Skimmer Portable	SK3	Portable Skimmer	13/30 Coated Disc Skimmer	1440	0	0	0	Portland	OR	Portland Base

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	various- 7 total	Storage	PS4	1000 & 1500 gal. Portable Storage Tanks	FastTanks Storage Tank	0	24	0	0	Portland	OR	Portland Base
PRC/ Dedicated	various- 6 total	Skiff	WB5	14' or 16' skiff	15 or 25 HP engine	0	0	0	1/per	Portland	OR	Portland Base

Cathlamet Technical Manual- (6 hour)- Recovery System Detail	Recovery System- Various Skimmers w/ 1000 gallon fast tank

Offloading Detail

Offloading narrative and pump rate description: If storage is a fast tank, it would be pumped out with a vacuum truck. If storage was a vacuum truck it would be rotated out when full.

Mobilization Detail

Mobilization method for recovery device (land/water): Mobilized via truck over land.

Mobilization method for each workboat(s): Skiff would be needed to deploy boom to collect oil shoreside.

Transit speeds (only list if an alternative was granted by Ecology): N/A

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 5 hours

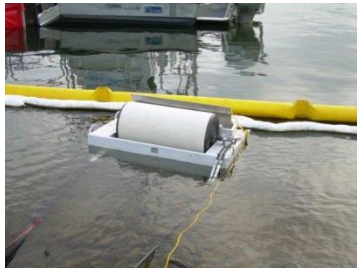
Support resources for mobilization: Pickup trucks needed to transport the skiff and skimmers.

Support resources for deployment: Anchors for deployment of boom would vary based on the operating environment. Boom-vane could also be used.

Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff.

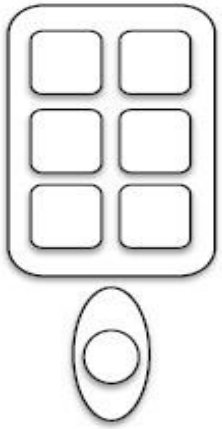
Photographs of equipment:






Various Portable Skimmers and Portable Storage

Cathlamet Technical Manual- (6 hour)- Storage System Detail	Storage System- Shallow Water Barge



Tactic purpose and description: The purpose of this tactic is storage of oil that has been collected on-water. Barge can operate in shallow environments and requires a workboat to move the barge to the desired location. The barge could also be anchored in a stationary position or moored to a dock and used to store recovered oil. Equipment listed below is for 5 systems.

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): Barge itself doesn't have lights but is capable of night operations as long as location is in a lighted area.

Oil type storage is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): The shallow water barge requires at least one workboat with a minimum of 2 people. 2 additional people are also initially needed to help deploy the barge.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	various- 5 units are available	Storage	TB4	Shallow Water Barge	30' American Eagle	0	100	0	2	Portland	OR	Portland Base

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
Non-dedicated	VOO	Vessel	WB3	Workboat	Workboat	0	0	0	2	Columbia River	WA/OR	Water/Land

Cathlamet Technical Manual- (6 hour)- Storage System Detail	Storage System- Shallow Water Barge

Offloading Detail

Offloading narrative and pump rate description: There are no pumps on board the shallow water barge. They are pumped off where they offload their product. Pumping rates will depend on the location of offload.

Mobilization Detail

Mobilization method for storage device (land/water): Mobilized via truck over land.

Mobilization method for each workboat(s): Either land or water.

Transit speeds (only list if an alternative was granted by Ecology): N/A

Time for the entire system to arrive on scene (mobilization for all resources detailed above):

Support resources for mobilization: Pickup truck to move barge which is stored on a trailer.

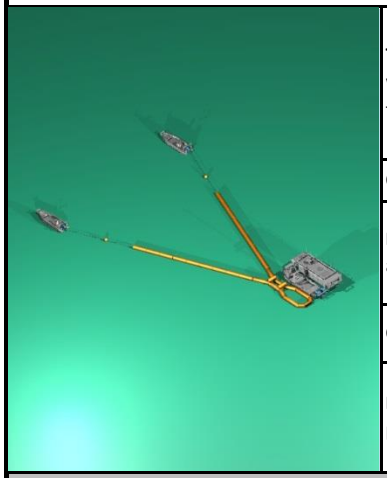
Support resources for deployment: Requires a workboat to move the barge once deployed in the water.

Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff.

Photographs of equipment:

Shallow Water Barge and Trailer

Cathlamet Technical Manual- (6 hour)- Storage System Detail	Storage System- Buster #2



Tactic purpose and description: The purpose of this tactic is calm/protected/or fast water collection and storage. This tactic assumes the Buster will be deployed using two workboats capable of towing the unit. To promote the ability for continuous recovery operations, the tactic assumes that collected oil is off loaded to available on-water storage.

Operating environment: Calm Water, Protected Water, or Fast Water

Night Operations (describe how this system is capable of supporting night ops): This storage system is capable of night operations using lighting and navigation equipment of VOO vessels. Night operations are subject to safety, weather, and other considerations.

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): Estimated that there will be 2 people for each towing vessel and 2 people to help deploy the buster.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	31774	Boom	B2	Boom (Current Buster 2)	NOFI Current Buster 2	0	94	136	0	Portland	OR	Portland Base

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
Non-dedicated	VOO	Vessel	WB4	workboat	workboat	0	0	0	2	Columbia River	WA/OR	Water/Land
Non-dedicated	VOO	Vessel	WB4	workboat	workboat	0	0	0	2	Columbia River	WA/OR	Water/Land

Cathlamet Technical Manual- (6 hour)- Storage System Detail	Storage System- Buster #2

Offloading Detail

Offloading narrative and pump rate description: Buster may be offloaded to on-water storage when full. Transfer pump options and rates vary.

Mobilization Detail

Mobilization method for recovery device (land/water): Mobilized via truck over land.

Mobilization method for each workboat(s): Workboats could either be mobilized via land or water.

Transit speeds (only list if an alternative was granted by Ecology): N/A

Time for the entire system to arrive on scene (mobilization for all resources detailed above):

Support resources for mobilization: PRC/dedicated truck

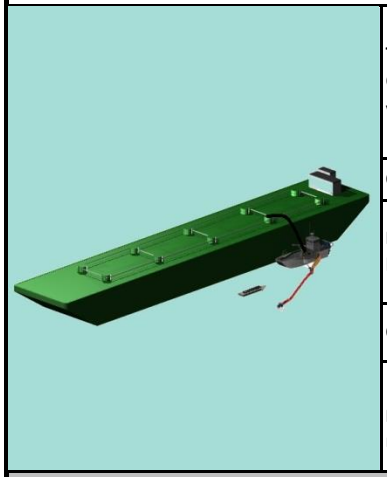
Support resources for deployment: Two non-dedicated workboats (VOO) or NRCES vessels may be used to deploy the Buster.

Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff.

Photographs of equipment:

NOFI Current Buster 2

Cathlamet Technical Manual- (12 hour)- Storage/Recovery System Detail	Storage/Recovery System- Tidewater Barge 4



Tactic purpose and description: The purpose of this tactic is the bulk recovery and on water storage of oil. Barge holds 23,000 barrels and a Countervac is stored on board that can connect to 3 skimmer heads for the recovery of oil. Moving the barge relies on a non-dedicated towing vessel available under letter of intent (LOI).

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): Capable of night operations if in a lighted area or if portable lights are set up on the barge.

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): Two Tidewater personnel are required to run the barge, and 2-4 personnel to run the tug. 3 additional personnel are needed to run the skimmers.

Storage/Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	29116	Storage	TB2	Barge 4	208' x 40' x 9.9'	0	12,000	0	0	Vancouver	WA	TIC Upper
PRC/ Dedicated	29194	Equipment	SR0	CounterVac 3315	21' pull on 3" hose	0	12	0	1	Vancouver	WA	Tidewater Barge 4
PRC/ Dedicated	61120	Skimmer Portable	SK2	Slickbar "High Capacity Oil Skimmer"	For use with CounterVac	4457	0	0	0	Vancouver	WA	Tidewater Barge 4
PRC/ Dedicated	29102	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac	4457	0	0	0	Vancouver	WA	Tidewater Barge 4
PRC/ Dedicated	29103	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac	4457	0	0	0	Vancouver	WA	Tidewater Barge 4

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
Non-dedicated	LOI	Tug	TUG2	LOI	>1,500 HP	0	0	0	4	Columbia River	WA/OR	In Water

Cathlamet Technical Manual- (12 hour)- Storage/Recovery System Detail	Storage/Recovery System- Tidewater Barge 4

Offloading Detail

Offloading narrative and pump rate description: Barge can be offloaded to shoreside storage when full.

Mobilization Detail

Mobilization method for recovery device (land/water): Water

Mobilization method for each workboat(s): Tug must be in-water.

Transit speeds (only list if an alternative was granted by Ecology): N/A

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 11 hours

Support resources for mobilization: Tug needed to mobilize the barge.

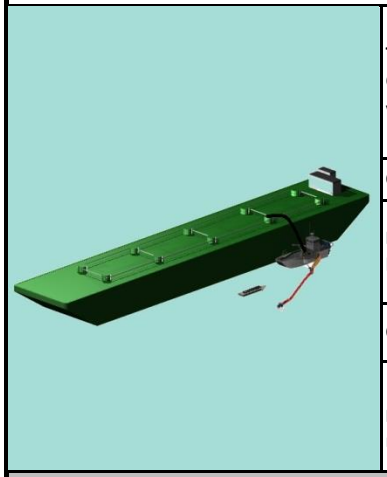
Support resources for deployment: N/A

Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff. Staff on barge must hold qualifications for transferring oil.

Photographs of equipment:

Tidewater Barge, Douglas 1800 SkimPak and Countervac 3315

Cathlamet Technical Manual- (12 hour)- Storage/Recovery System Detail	Storage/Recovery System- Tidewater Barge #2



Tactic purpose and description: The purpose of this tactic is the bulk recovery and on water storage of oil. Barge holds 23,000 barrels and a Countervac is stored on board that can connect to 3 skimmer heads for the recovery of oil. Moving the barge relies on a non-dedicated towing vessel available under letter of intent (LOI).

Operating environment: Calm Water, Protected Water, or Shallow Water

Night Operations (describe how this system is capable of supporting night ops): Capable of night operations if in a lighted area or if portable lights are set up on the barge.

Oil type skimmer is optimized for: Group I, II, III and IV

Minimum number of personnel for a 12 hour shift (also list 24 hour shift if the system conducts night operations): Two Tidewater personnel are required to run the barge, and 2-4 personnel to run the tug. 3 additional personnel are needed to run the skimmers.

Recovery Device Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
PRC/ Dedicated	30972	Storage	TB2	Barge #2	242' x 42' x 16.6'	0	18000	0	0	Wauna	OR	GP Wauna Mill
PRC/ Dedicated	29100	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac	4457	0	0	0	Wauna	OR	Tidewater Barge # 2
PRC/ Dedicated	29101	Skimmer Portable	SK3	Douglas 18000 Skim-Pak	For use with CounterVac	4457	0	0	0	Wauna	OR	Tidewater Barge # 2
PRC/ Dedicated	29195	Equipment	SR0	CounterVac 3315	21' pull on 3" hose	0	12	0	1	Wauna	OR	Tidewater Barge # 2

Associated Vessel and Boom Detail

Ownership	wrrlID	Resource	Kind Type	Identification	Specifications	Recovery EDRC	Liquid Storage	Boom	People	Home Base	State	Staging
Non-dedicated	LOI	Tug	TUG2	LOI	>1,500 HP	0	0	0	4	Columbia River	WA/OR	In Water

Cathlamet Technical Manual- (12 hour)- Storage/Recovery System Detail	Storage/Recovery System- Tidewater Barge #2

Offloading Detail

Offloading narrative and pump rate description: Barge can be offloaded to shoreside storage when full.

Mobilization Detail

Mobilization method for recovery device (land/water): Water

Mobilization method for each workboat(s): Tug must be in-water.

Transit speeds (only list if an alternative was granted by Ecology): N/A

Time for the entire system to arrive on scene (mobilization for all resources detailed above): 11 hours

Support resources for mobilization: Tug needed to mobilize the barge.

Support resources for deployment: N/A

Training of personnel for deployment: OSHA 24 hour HAZWOPER training for all staff. Staff on barge must hold qualifications for transferring oil.

Photographs of equipment:

Tidewater Barge with Douglas 1800 Skimpak and Non-Dedicated Tug