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March 13, 2012

Ms. Christy Bohl
Regional Administrator
Bureau of Safety and Environmental Enforcement
Alaska OCS Region
3801 Centerpoint Drive, Suite 500
Anchorage, AK 99503-5823

RECEIVED

MAR 19 2012

Regional Director, Alaska OCS
Bureau of Ocean Energy Management
Anchorage, Alaska

Re: Oil Spill Response Plan: Chukchi Sea Exploration Alaska

Dear Ms. Bohl:

On February 13, 2012, ConocoPhillips Company (COP) submitted to the Bureau of Safety and Environmental Enforcement (BSEE) the Oil Spill Response Plan (OSRP) for exploratory drilling on the Devils Paw Prospect leases acquired during the Chukchi Sea Lease Sale 193. Submission of the OSRP was made in connection with the exploration plan that was submitted to the Bureau of Ocean Energy Management (BOEM) on March 1, 2012.

COP's decision to submit the final OSRP directly to BSEE was based on informal conversations with both agencies about how best to comply with the new regulations, under which BSEE has approval authority over the OSRP. Also based on those conversations, we took extra time to re-write the OSRP into BSEE's preferred format to facilitate speedy review and approval.

In a meeting with February 21, 2012, BSEE asked COP to supplement the OSRP in three areas: dispersants, logistics, and waste. In response to that request, COP now provides revised Appendices D, H, and K. Appendix D is revised to add details about COP's contractual relationships with the Marine Spill Response Corporation (MSRC) and the Association of Petroleum Industry Co-op Managers (APICOM), which allow for deployment of additional dispersant resources. Appendix K is revised to emphasize that recovered crude oil is presumed to be exempt from RCRA hazardous waste regulations, and to explain that in the event of an actual spill, an incident-specific waste management plan would be developed by COP and approved by the unified command. Appendix H is revised to add detail on aviation logistics, support logistics, and mobile command units. For administrative convenience, we propose that these three appendices be substituted for the versions contained in our February 13 submittal.

In preparing this supplemental information, we also noticed one error on an equipment list on page C-12, and the inclusion of personal phone numbers on page I-12. COP believes the inclusion of personal telephone numbers is valuable to the COP version of the OSRP, but not needed for the publically-available version. We have included with this letter revised pages C-12 and I-12, and ask that these two pages be substituted for the same pages in our February 13 submittal.

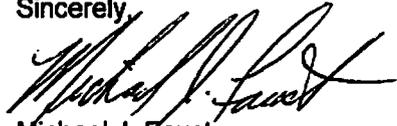
COP submitted a draft OSRP back in August 2011, and our final OSRP has now been submitted for one month. COP has not received any indication from BSEE that the plan is deficient. Timely review of our

Letter to Ms. Christy Bohl
March 13, 2012
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plan is very important, and we note that the statute¹ underlying approval of exploration plans calls for the Secretary of Interior to approve or disapprove an exploration plan within 30 days. The OSRP, as a component of the exploration plan, is subject to this time constraint. COP encourages BSEE to proceed with its review of the OSRP without delay, and to provide BOEM with whatever information it may need for timely approval of the exploration plan.

Please contact Michael Nelson at (907) 265-6027 if you have any questions or require additional information.

Sincerely,



Michael J. Faust
Chukchi Project
Integration Manager

Cc: David Johnston, BOEM
David Moore, BSEE

Enclosure: ORSP Cover Page, date stamped

¹ 43 U.S.C. § 1340(c)(1).

ConocoPhillips Company
OIL SPILL RESPONSE PLAN

RECEIVED

FEB 13 2012

Regional Director, Alaska OCS
Bureau of Safety and Environmental Enforcement
Anchorage, Alaska

**CHUKCHI SEA EXPLORATION
ALASKA**


ConocoPhillips

FEBRUARY 2012

C. Environmental Resources [30 CFR 254.26(c)]

Environmentally sensitive areas and areas of public concern include cultural resource sites, Native allotments, bird nesting areas, and marine mammal habitat. See Section 2.7.6 of the oil spill response plan (OSRP) for a detailed discussion.

Many resources exist in the Chukchi Sea coastal zone that could potentially be affected by spilled oil. The *North Slope Subarea Contingency Plan* (ARRT, 2007) includes Most Environmentally Sensitive Areas (MESA) maps and a set of North Slope Environmental Sensitivity Index (ESI) maps (Numbers 12 through 24) that summarize the biological resources at a regional scale based on existing published sources. In 2008, Alaska Clean Seas (ACS) and the Sensitive Areas Work Group identified 34 specific, high-priority sites within the potentially affected area that must be addressed in any spill planning for this project (see OSRP Figure 2-7). These priority protection sites are identified in the ACS *Technical Manual* and have been reviewed and accepted by state and federal agency biologists.

The resources and timeline of the response to the WCD scenario are presented in Section E of this appendix. The strategies to be utilized to protect environmentally sensitive areas and areas of public concern are summarized in Section E and detailed in Appendix J of this OSRP.

D. Discussion of Equipment, Personnel, and Mobilization Times [30 CFR 254.26(d) and (e)]

Tables C-3 and C-4 detail the equipment and staffing necessary to respond to the worst-case discharge. The equipment, staffing, and timeline are designed to respond in adverse conditions.

Appendix C – Worst-Case Discharge Scenario

Table C-3: Major Equipment to Contain and Recover Oil

Division	Task Force	Category	Equipment	Brand/Model
A OFFSHORE RESPONSE EQUIPMENT FOR OSRV1				
	1.0	Offshore Containment & Recovery (dedicated)	OSRV1	(1) Large OSRV with onboard recovered oil storage capacity of approximately 10,000 bbls
	1.1		Workboat	(2) 32-ft Workboats
			Containment Boom	(4) reels (660 ft / 200 m per reel; 2,640 ft total)
			Brush Skimmer	(2) Lamor LSC-6 packages
			Disc Skimmer	(1) Crucial Model 13/30 Skimmer System
			Brush Skimmer	(2) Lamor Mullimax skimming systems
			Pump	(4) Lamor GT A 115 pumps
			20-ft Connex	(5) Filled with equipment/supplies
		In Situ Burn	Fire Boom Connex	500 ft (500 ft/reel, 1 reel/container)
			Hand-held Igniters	(30) Elastec
B OFFSHORE RESPONSE EQUIPMENT FOR OSV2				
	2.0	Offshore Containment & Recovery	OSV2	(1) Large OSV with onboard recovered oil storage capacity of approximately 8,000 bbls
	2.1		Workboat	(2) 32-ft Workboats
			Containment Boom	(2) reels (660 ft / 200 m per reel; 1,320 ft total)
			Brush Skimmer	(2) Lamor LSC-6 packages
			Disc Skimmer	(1) Crucial Model 13/30 Skimmer System
			Brush Skimmer	(2) Lamor Multimax skimming systems
			Pump	(4) Lamor GT A 115 pumps
			20-ft Connex	(4) Filled with equipment/supplies
C OFFSHORE RECOVERED OIL STORAGE				
	3.0	Offshore Storage	Tanker	(1) Tanker
			Miscellaneous	Fenders, cargo hoses
D OFFSHORE RESPONSE EQUIPMENT - AERIAL DISPERSANT				
Not utilized in this scenario, but available on a contractual basis.				
E RESPONSE EQUIPMENT STORED ON NEARSHORE OSRB				
	4.0	Nearshore Open Water Containment, Recovery, & Storage	Barge	(1) storage barge (combination deck/liquid cargo)
	4.1		Tug	(1) tug
			Workboat	(4) 32-ft Workboats
			Brush Skimmer	(6) Lamor Multimax skimming systems
			Pump	(4) Lamor GT A 30 pump package
			Containment Boom	(4) reels of ILB750 inflatable boom (150 m per reel; 600 m total)
			Storage	(9) ~30 cubic meter towable bladders
			Storage	(3) ~10 cubic meter towable bladders
			20-ft Connex	(5) Filled with equipment/supplies



Appendix D – Dispersant Use Plan

Chukchi Sea Oil Spill Response Plan

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Acronyms

ACS	Alaska Clean Seas
ADDS	Aerial Dispersant Delivery System
ADEC	Alaska Department of Environmental Conservation
ANG	Alaska Air National Guard
APICOM	Association of Petroleum Industry Co-op Managers
APSC	Alyeska Pipeline Service Company
ARRT	Alaska Regional Response Team
COP	ConocoPhillips Company
EPA	U.S. Environmental Protection Agency
FOSC	Federal On-Scene Coordinator
MASS	Modular Aerial Spray System
MPA	Marine Preservation Association
MSRC	Marine Spill Response Corporation
NCP	National Contingency Plan
OSRL	Oil Spill Response Limited
SMART	Special Monitoring of Applied Response Technologies
STAR	Spill Tactics for Alaska Responders
USCG	U. S. Coast Guard

APPENDIX D DISPERSANT USE PLAN [30 CFR 254.27]**A. Overview**

ConocoPhillips Company (COP) policy and regulatory agency requirements stipulate the use of mechanical containment and recovery as the primary oil spill response method. In situations where mechanical recovery may be ineffective, result in unacceptable environmental damage, pose health and safety risks to response personnel, or not be completed before the oil migrates into sensitive areas, non-mechanical response methods would be utilized. Non-mechanical methods include the use of dispersants. Non-mechanical methods will not be used as a substitute for mechanical recovery. In an actual spill response, all response strategies are approved by Unified Command.

Dispersants are complex chemical formulations that, when applied to an oil slick or floating oil, reduce the interfacial tension between the oil and the water and, thus, allow the oil to be broken into small droplets by the action of the wind, waves, and currents. This process disperses oil into the water column and reduces hydrocarbon concentrations on the water surface. To be effective, dispersants must be applied in a timely manner. Once oil is allowed to weather on the ocean surface, it becomes difficult, if not impossible, to disperse chemically.

B. Dispersants Inventory [30 CFR 254.27(a)]

An inventory of dispersants available to COP is presented in Table D-1.

Table D-1: Regional Inventory of Dispersants

Dispersant Mobilization Contact	Location of Dispersant	Method of Storage (# of Containers)	Amount Corexit 9500 (Gallons)	Total Amount (Gallons)
CISPRI (CIRO) Nikiski, AK Todd Paxton (GM) (907) 776-5129 office Mike Watson Operations Manager Greg Edelman Operations Supervisor	Univar, Anchorage, AK	350-gallon totes (37)	11,000	13,200
	Nikiski, AK	550-gallon totes (2)	1,000	
	Nikiski, AK	-	1,200	
Alyeska Pipeline Service Anchorage, AK Jennifer Bleicher (907) 834-6963 office (907) 461-7414 cell	Univar, Anchorage, AK	Bulk storage tanks (4)	52,642	72,857
	Univar, Anchorage, AK	220-gallon totes (42)	9,240	
	Valdez, AK	ISO tanks (2)	10,095	
	Valdez, AK	55-gallon Drums (16)	880	
ASRC Energy Services, Response Operations LLC Anchorage, AK Joe LoSciuto (GM) (907) 339-7665 office Jim Rosenberg (907) 339-5488 office (907) 602-6503 cell	Univar, Anchorage, AK	350-gallon SS totes (75)	25,000	25,000

Table D-1 (Continued): Regional Inventory of Dispersants

Dispersant Mobilization Contact	Location of Dispersant	Method of Storage (# of Containers)	Amount Corexit 9500 (Gallons)	Total Amount (Gallons)
Clean Islands Council & State of Hawaii* Honolulu, HI (808) 845-8465 office	Tesoro SPM Yard 91-141 Kalaeloa Honolulu, HI	4,520-gallon ISOs (5 x 4,017 gallon: 1 x 4,015 gallon 1 x 3,330 gallon)	27,430	38,018
	Kalaeloa Airport Building 2102	5,547-gallon ISO (1)	5,277	
	Kalaeloa Airport Building 2102	5,576-gallon ISO (1)	5,311	
Marine Spill Response Corp. <ul style="list-style-type: none"> • Gulf Region 319-437-9600 • Northeast Region 908-417-0500 • Northwest Region 206-774-6772 • South Region 805-986-8384 • Southeast Region 305-375-8410 	MSRC Site Portland, Maine 04101	330 gallon totes (3)	990	990
	Wilcomico Regional Airport-Corporate #6 Salisbury, Maryland 21804	330 gallon tote (1)	330	330
	MSRC Site Chesapeake City, Maryland 21915	330 gallon totes (27) 4,560 gallon ISO (1)	8,910 4,125	13,035
	Delaware Bay River Co-Op Milford, Delaware 19963	330 gallon tote (1)	330	330
	MSRC Site Miami, Florida 33132	330 gallon totes (3)	330	990
	MSRC Site Bayamon, Puerto Rico 00961	330 gallon totes (10)	3,300	3,300
	MSRC Site Tampa, Florida 33605	330 gallon totes (16)	5,280	5,280
	Moran Environmental Savannah, Georgia 31415	330 gallon totes (21)	6,930	6,930
	Stennis International Airport Kiln, Mississippi 39566	5,283 ISO Tank 330 gallon totes (35) + 330 gallons)	4,129 11,875	16,009
	MSRC Site Galveston, Texas 77554	330 gallon totes (35)	11,550	11,550
	MSRC Site Ingleside, Texas 78362	330 gallon totes (10)	3,300	3,300
	Phoenix-Mesa Gateway Airport Mesa, Arizona 85212	5,000 gallon ISO (1) 330 gallon tote (1)	3,000 330	3,300
	Tesoro Marine Terminal Long Beach, California 90813	330 gallon totes (28)	9,240	9,240
	Long Bach PPS Yard Long Beach California 90806	330 gallon totes (11)	3,630	3,630

Table D-1 (Continued): Regional Inventory of Dispersants

Dispersant Mobilization Contact	Location of Dispersant	Method of Storage (# of Containers)	Amount Corexit 9500 (Gallons)	Total Amount (Gallons)
Marine Spill Response Corp. <ul style="list-style-type: none"> • Gulf Region 319-437-9600 • Northeast Region 908-417-0500 • Northwest Region 206-774-6772 • South Region 805-986-8384 • Southeast Region 305-375-8410 	Richmond RRC Warehouse Richmond, CA 94804	330 gallon totes (3)	990	990
	Buchanan Field (CCR) Airport Concord, California 94520	330 gallon tote (1)	330	330
	MSRC Site Eureka, California 95501	330 gallon totes (2)	660	660
	MSRC Warehouse Pacific NW Everett, WA 98203	330 gallon totes (43)	14,190	14,190
	MSRC-OSRV "Hawaii Responder" Honolulu, Hawaii 96819	350 gallon totes (2)	600	600
			TOTAL:	244,059

COP is a member of Alaska Clean Seas (ACS). Through its membership in the Marine Preservation Association (MPA), COP also has access, via a service agreement, to Marine Spill Response Corporation (MSRC) resources.

ACS and MSRC are both members of the Association of Petroleum Industry Co-op Managers (APICOM). APICOM has a mutual aid agreement to provide resources to members on an as-available basis. Co-ops are under no obligation to provide resources. Resource availability may be restricted by either a co-op's member companies or regulatory obligations. A list of APICOM members is provided at the end of this appendix.

C. Toxicity Data [30 CFR 254.27(b)]

As required by Subpart J of the *National Contingency Plan* (NCP), the dispersant proposed and available for use in the Chukchi Sea Exploration project area is on the NCP Product Schedule and approved for use by the U.S. Environmental Protection Agency (EPA). In Alaska, the most probable dispersant to be used would be COREXIT® EC9500A. Toxicity and effectiveness data for these materials are presented in Table D-1.

Table D-2: National Contingency Plan Product Schedule Toxicity and Effectiveness Summary

Product (1:10 Product-to-No. 2 Fuel Oil ratio)	Toxicity (LC50 values in ppm)		Effectiveness (%)		
	Menidia (96-hr)	Mysidopsis (48-hr)	Prudhoe Bay Crude Oil	South Louisiana Crude Oil	Average of Crude Oils
COREXIT® EC9500A	2.61	3.40	45.30	54.70	50.00

Source: http://www.epa.gov/oem/content/ncp/tox_tables.htm

D. Application Equipment [30 CFR 254.27(c)]

Aerial application of dispersants would likely involve fixed-wing aircraft because helicopters have more limited payload-range capabilities. COP will have access to large fixed-wing aircraft through service agreements, and additional aircraft can be mobilized as needed. Companies contracted to COP would provide aerial platforms, with a qualified crew and operator, within 24 hours of initial notification. The aircraft would most likely operate out of Barrow.

For offshore application in the Chukchi Sea, the most practical delivery aircraft are Lockheed C-130/L-382 Hercules cargo aircraft. The only civilian operator of these aircraft in Alaska is Lynden Transport. Military versions of delivery aircraft in Alaska are operated by the U. S. Coast Guard (USCG) at the Kodiak Air Station, and the Alaska Air National Guard (ANG) at the Joint Base Elmendorf-Richardson in Anchorage. Also available are the U.S. Air Force Reserve (Youngstown, Ohio) and Safair in South Africa. Safair maintains six L-382 aircraft available for dispersant application worldwide under contracts with Oil Spill Response Limited (OSRL), a global oil spill response organization.

There are four possible aerial dispersant delivery apparatus:

- The Aerial Dispersant Delivery System (ADDS) package,
- MSRC's C-130 Hercules,
- The NIMBUS package, and
- The Modular Aerial Spray System (MASS) package.

The ADDS pack was designed and built by Beigert Aviation Incorporated, located in Arizona. The ADDS package has the biggest payload of the three. Two aviation companies, Lynden Air Cargo and Safair, operate the ADDS pack and have experience with the package. The ANG C-130s in Anchorage would require modification to allow them to carry the ADDS package. The USCG C-130s out of Kodiak can deploy the ADDS package without modification. A Memorandum of Agreement (MOA) exists between USCG District 17 and Alyeska Pipeline Service Company (APSC) for the use of the USCG C-130s and APSC ADDS packages. APSC maintains two ADDS packages in Anchorage. This MOA may be implemented in the event of a spill, but its use is limited by availability of aircraft and non-competitiveness requirements with private industry. It can only be implemented if civilian aircraft are not available or are insufficient for the spill size.

MSRC's dedicated C-130 has a built-in tank and spray system with a dispersant carrying capacity of 3,250 gallons. This platform consists of a built-in tank with removable spray arms that are positioned just forward of the tail. The booms, 15 feet on each side, deliver a swath width of 150 feet at altitudes of 50 to 100 feet.

The NIMBUS package was designed by Ayles Fernie of the United Kingdom and is currently operated by Safair under contract to OSRL. While the system is slightly less capable than the ADDS package (3,000-gallon capacity compared to 5,000 gallons for the ADDS pack), it has the advantage that it is modular, with the modules transportable by standard jet transport.

The fourth and final aerial dispersant delivery apparatus is the MASS package, operated by the 757th Airlift Squadron of the 910th Airlift Wing of the U.S. Air Force Reserve, based out of Youngstown Air

Reserve Station, Vienna, Ohio. The smallest of the three systems, the MASS package delivers a 2,000-gallon payload maximum. The package is deployed using Air Force Reserve C-130H aircraft. The MASS package was originally designed for insect control operations but is approved for oil spill dispersants. A MOA exists between the U. S. Air Force and the USCG for use of the MASS package for oil spill response.

COP will also have a vessel in the Chukchi Sea fitted with a conventional vessel based dispersant delivery system. Large vessels offer unique advantages to aerial systems including the potential for large payloads of dispersant, continuous spraying for long periods, higher dosages avoiding the need for multiple passes, and relatively simple on-site application systems. Working with spotter aircraft or multi-spectrum remote sensing equipment the vessel can be guided to the heaviest concentration of oil. With application speeds of approximately 3 to 8 knots, dispersants can be sprayed undiluted (neat) or diluted. Neat application yields higher efficiencies and is usually preferred.

The vessel-based system will consist of two spray arms, one on either side of the vessel, and multiple down-tubes with nozzles on each spray arm. The system will be fed by a small high pressure pump connected to a dispersant supply tank. Spray arm location, swath width and down-tube lengths are determined by the dimensions of the vessel. For example, a 50 foot-wide vessel equipped with two 25-foot long spray arms would have an effective swath width of 100 feet. The dosage rate can be varied by the type and size of nozzle used as well as the dispersant pump output to best match conditions.

Spray systems are designed and positioned on the vessel to give slightly overlapping spray patterns at the surface yielding droplet-sizes that are typically 250-750 microns ($\frac{1}{4}$ to $\frac{3}{4}$ millimeter). Vessel based systems make initial contact directly with the oil ahead of the vessel wake thereby utilizing the vessels wake as mixing energy. Reference ACS Tactic DT-1. Vessel-based dispersant systems offer the flexibility to operate under a broad range of operational and environmental conditions.

During dispersant application, COP would mobilize aerial monitoring contractors to the offshore site. At a minimum, Level I Special Monitoring of Applied Response Technologies (SMART) protocols would be implemented if dispersant or surfactant herder application is approved offshore. When possible, Level III SMART protocols would be performed to provide fluorometry data for real-time assessments, supplemented with water samples collected for chemical analyses. Data for on-water temperature, conductivity, and turbidity also would be captured when possible. Current-tracking devices may be deployed to delineate the dispersed oil plume.

E. Application Methods [30 CFR 254.27(d)]

Initiation of dispersant application will normally involve the following steps:

1. Activation and mobilization of aerial monitoring resources as required.
2. Mobilization of aerial or vessel-based application platforms and dispersant supply with staging out of a coastal Chukchi Sea or North Slope community. Mobilization would likely take place prior to and in anticipation of Federal On-Scene Coordinator (FOSC) approval of dispersant use.
3. Ongoing monitoring of the dispersant effectiveness.

Appendix D – Dispersant Use Plan

Whenever possible, a second aircraft (fixed-wing or helicopter) would be used to help align the Hercules with each pass over the oil, giving "start" and "stop" instructions for spraying as the aircraft enters and leaves the desired spray zone. The spotter aircraft can provide important information to the pilot of the dispersant plane regarding wind effects on targeting of the dispersant, proper overlap with previous spray paths, effectiveness of dispersion, and any other adjustments that may be needed for the flight path.

Flight crews manning aerial dispersant and spotter planes should be trained to work in tandem. The spotter aircraft can also be of help to those conducting the SMART protocols.

With good visibility there is the potential for dispersant application 24 hours per day during periods of extended daylight in the summer months.

Specific application procedures would be dependent upon the situation at the time of the spill; however, general procedures are detailed in Table D-3.

Table D-3: Application Methods

Product	Application Method (Aerial)	Concentration/ Application Rate	Conditions for Use
COREXIT 9500	Apply undiluted at altitude 30-50 ft. Careful selection of spray nozzles critical to achieve proper dose (through droplet size control). 1/4-inch open pipe with aircraft traveling at 120 mph (104 knots) or more.	2-10 gallons per acre or dispersant to oil ratio of 1:50 to 1:10 is recommended.	Timely application assures highest degree of success. Early treatment reduces mousse formation. Useful in freshwater or saltwater at any temperature. Viscous oils require higher dosage rates.

Note: Adapted from the Alaska Department of Environmental Conservation (ADEC) Spill Tactics for Alaska Responders (STAR) Manual.

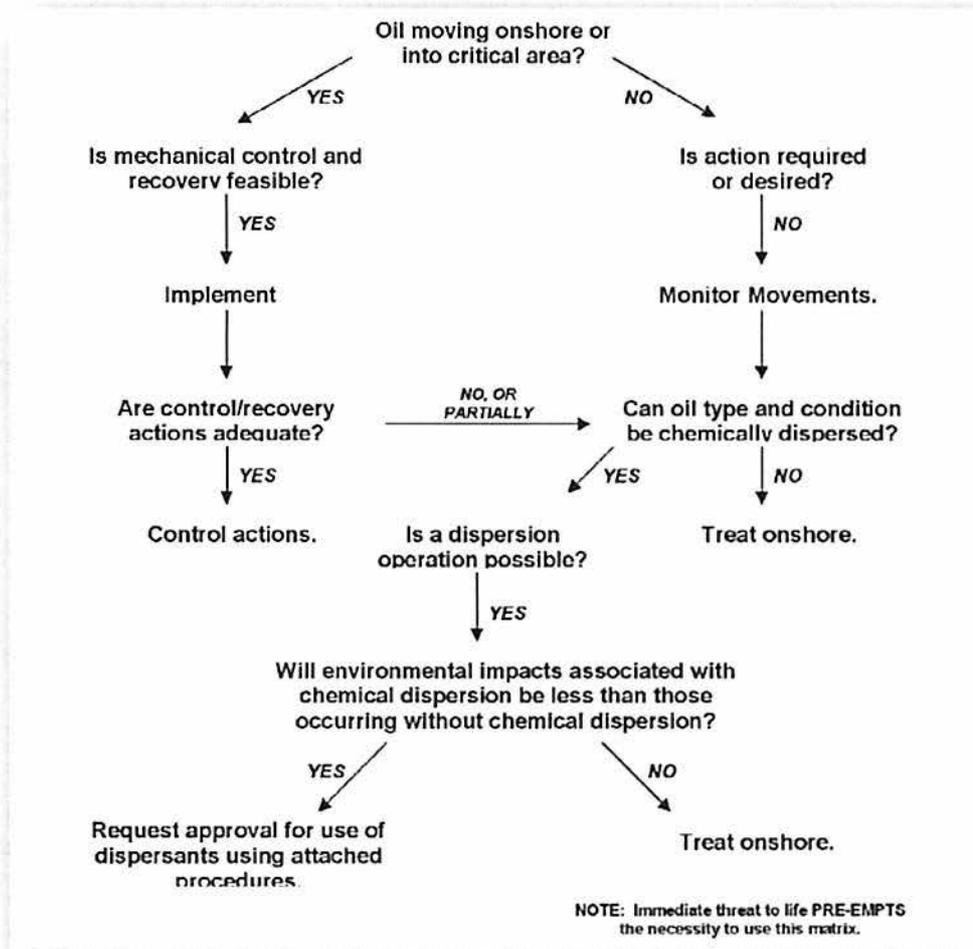
F. Conditions for Use [30 CFR 254.27(e)]

Non-mechanical response options will be considered under conditions such as the following:

- Mechanical recovery is impractical or ineffective,
- Shorelines are threatened,
- Dispersant use would augment the oil elimination capacity of mechanical recovery, or
- Dispersant use would minimize the potential environmental damage.

The oil dispersant guidelines for Alaska were developed by the Alaska Regional Response Team (ARRT), and are detailed in the Unified Plan (ARRT, 1986). The Dispersant Decision Matrix presented in the Unified Plan is presented in Figure D-1.

Figure D-1: Dispersant Use Decision Tree



In all cases, the use of dispersants will be based on the determination that the impact of dispersants or dispersed oil will be less harmful than non-dispersed oil.

G. Approval Procedures and Forms [30 CFR 254.27(f)]

Dispersant use will not be conducted without approval of state and federal agencies in accordance with ARRT Annex F. The COP Incident Commander will discuss the option of non-mechanical response options with FOSCs and Unified Command. In the event of a major release (e.g., blowout), COP and ACS will complete an "Oil Spill Response Checklist: Dispersant Use in Zone 2 and 3 and Undesignated Areas" is presented as Figure D-2. The "Dispersant Mission Requirements Form" is presented as Figure D-3.

Monitoring and Observation

Determining whether the dispersants have actually reached the oil in the proper dosage and with sufficient coverage and whether the dispersant is effectively breaking up the oil requires monitoring. Monitoring allows the response team to determine whether the application method needs to be modified in any way and whether application needs to be repeated in some areas. NOAA has developed a dispersant use protocol – SMART protocol – that should be used in conjunction with dispersant operations. The protocol offers three tiers of monitoring, based on the incident needs:

While observing dispersant applications, consider these important points:

- Observers should be trained in dispersant monitoring.
- The monitoring observer should not make operational decisions (e.g., how much dispersant to apply, when or where to apply it). These decisions are made by operational units.
- Oil surface slicks and plumes look different for many reasons; for example, oil or product characteristics, time of day (different sun angles), weather, sea state, and rate at which oil disperses.
- Low-contrast conditions (e.g., twilight, haze) make observations difficult.
- For best viewing, the sun should be behind you, with the aircraft at an altitude of 500-1000 feet observing the slick at a 30-degree angle.
- Appearances of dispersant action can range from brown to white (cloudy) to no visible plume. The visibility of the dispersed plume will vary according to water clarity. In some cases, remaining surface oil and sheen may mask oil dispersing under the slick and thus interfere with observations of the dispersed oil plume.
- Sometimes other things, such as suspended solids or algal blooms, may resemble dispersed oil.
- Dispersed oil plume formation may not be instantaneous after dispersant application. In some cases, such as when oil is emulsified, it can take several hours and may not show a visible plume at all.

Figure D-2: Oil Spill Response Checklist: Dispersant Use in Undesignated Areas

OIL SPILL RESPONSE CHECKLIST: DISPERSANT USE IN ZONES 2 AND 3 AND IN UNDESIGNATED AREAS

I. SPILL DATA (To be completed by responding party and submitted to Federal On-Scene Coordinator)

A. Name of Incident: _____

B. Date and time of incident: Month/Day/Year: _____ Time: _____

C. Incident: Grounding Transfer Operations Explosion
Collision: Blowout: Other: _____

D. Did source burn? Yes No
Is source still burning? Yes No

E. Spill location: Latitude _____ Longitude _____

F. Distance (in miles) and direction to nearest land: _____
nearest town: _____

G. Product released: North Slope Crude Cook Inlet Crude JP4
Chevron Residual Diesel #2 Other _____

H. Product easily emulsified? Yes No

I. Product already emulsified? No Light emulsion (0-20%)
Moderate emulsion (21-50%) Heavy emulsion (>51%) Unknown

J. Estimated volume of released product: _____ gals _____ bbls

K. Estimated volume of produce potentially released: _____ gals _____ bbls

L. Release status: Continuous Intermittent
One time only, now stopped
If continuous or intermittent, specify rate of release: _____ gals _____ bbls

M. Estimated water surface covered (square miles) _____

II. WEATHER AND WATER CONDITIONS AT THE TIME AND LOCATION OF THE SPILL (To be completed by responding party and submitted to Federal On-Scene Coordinator)

A. Temperature: Air _____ °F Water _____ °F

B. Weather: Clear Partly Cloudy Overcast
Rain Snow Fog

C. Tidal State: Slack Tide Incoming (flood) Outgoing (ebb)

D. Dominant current, net drift: Speed _____ kts Direction (from) _____

E. Wind Speed: _____ knots Direction (from) _____

F. Sea State: Calm Choppy Swell
Waves: < 1 ft. 1 - 3 ft > 3 ft

G. Water depth (fathoms _____ ft _____): 0-3 4-10 11-30 31-99 > 100

ARRT Approved 04/15/92
Dispersant Use: Zones 2 & 3

1 of 6

Figure D-2 (Continued): Oil Spill Response Checklist: Dispersant Use in Undesignated Areas

H. Ice Present: Yes No ;
 Percent coverage: < 10% 11-30% 31-50% 51-100%

I. Other considerations: Low visibility Rip tides Whirlpools
 Eddies Other

Note: (1) See Section IV for weather and water conditions forecast (to be completed by NOAA Scientific Support Coordinator).
 (2) See Section V for predicted oil behavior (to be completed by NOAA Scientific Support Coordinator).
 (3) Responding party has option of also submitting information on predicted oil behavior to Federal On-Scene Coordinator.

III. PROPOSED DISPERSANT USE PLAN (To be completed by responding party and submitted to Federal On-Scene Coordinator)

A. Reason for requesting dispersant use:

B. Dispersant zone where dispersant would be applied (check one or more):
 Zone 1 Zone 2 Zone 3

C. Location of area to be treated relative to the following, as shown on attached chart:
 Slick/Trajectory
 Dispersant zone
 Nearest Land

D. Name of the dispersant proposed for use:
 COREXIT 9527 COREXIT 9550 OFC D-609 Other

E. Application Platform(s): C-130 Helicopter Vessel
 Safety Plan for applicable Platform in place? Yes No

F. Dispersant dosage goals:
 Ratio of dispersant-to-oil: 1:20 Other
 Gallons per acre: 5 gals per acre Other

G. Total amount of dispersant to be used: gals.

H. Time of dispersant application: Start time Day
 Finish time Day

I. Estimated percentage of spill area to be treated:
 1-5% 6-20% 21-40% 41-70% 71-99% 100%

Signature of Requester:
 Printed Name of Requester:
 Title of Requester:
 Requester Affiliation:
 Requester Representing:
 Time & Date Request Submitted to FOSC:

ARRT Approved 04/15/92
 Dispersant Use: Zones 2 & 3

2 of 6

Figure D-2 (Continued): Oil Spill Response Checklist: Dispersant Use in Undesignated Areas

VI. **RESOURCES AT RISK** (To be completed by Resource Agencies)

A. **Habitats** (see attached charts):

Sheltered tidal flats

Coastal marshes

Other

B. **Biological Resources** (see attached charts):

Taxon	Distribution		Estimated # of Individuals				
	General	Concentrate	1-10	11-50	51-100	101-1000	>1000
Endangered/Threatened Species							
1.							
2.							
3.							
Non-endangered/Threatened Species							
Sea Otters							
Fur seals							
Other seals							
Toothed whales							
Baleen whales							
Polar bears							
Walrus							
Waterfowl							
Seabirds							
Diving birds							
Shorebirds							
Raptors							
Ungulates							
Bears (brown & black)							
Furbearers							

Fish:

Pelagic & Larval

Bottomfish:

Intertidal mollusks:

Crustacea:

C. **Human Resources:**

Commercial facilities and enterprises (see attached chart)

Public facilities and enterprises (see attached chart)

ARRT Approved 04/15/92
Dispersant Use: Zones 2 & 3

4 of 6

Figure D-2 (Continued): Oil Spill Response Checklist: Dispersant Use in Undesignated Areas

Historic and archaeological resources:
 Present (Appropriate information to be provided to FOSC).
 Not present Unknown

Commercial harvest areas:
 Generally distributed Concentrated (see attached chart)

Subsistence harvest areas:
 Generally distributed Concentrated (see attached chart)

VII. FEDERAL ON-SCENE COORDINATOR'S EVALUATION OF RESPONSE OPTIONS (To be completed by Federal On-Scene Coordinator)

A. Has mechanical clean-up been fully evaluated? Yes No

B. Has in-situ burning been fully evaluated? Yes No

C. Why is dispersant use necessary?

D. Will dispersants be used in addition to mechanical recovery and/or in-situ burning?
 Yes No

E. Will dispersants be used instead of mechanical recovery and/or in-situ burning?
 Yes No

VIII. ALASKA REGIONAL RESPONSE TEAM RECOMMENDATION TO FEDERAL ON-SCENE COORDINATOR REGARDING DISPERSANT USE (To be completed by Alaska Regional Response Team Co-Chairman).

Time and Date request received by Alaska Regional Response Team Co-Chairman:

A. No dispersants may be applied.

B. Dispersants may be used under noted conditions (if any) in limited or selected areas (see attached chart).

C. Dispersants may be applied as requested above in Section III.*

*Requests exceeding 20 gallons per acre require Alaska Regional Response Team approval.

Signature of ARRT Co-Chairman:

Printed Name of ARRT Co-Chairman:

Time and Date of Recommendation:

ARRT Approved 04/15/92
 Dispersant Use Zones 2 & 3

5 of 6

Figure D-2 (Continued): Oil Spill Response Checklist: Dispersant Use in Undesignated Areas

**IX. FEDERAL ON-SCENE COORDINATOR'S DECISION REGARDING DISPERSANT USE -
BASED ON ARRT GUIDELINES & DECISION MATRIX (To be completed by Federal On-
Scene Coordinator)**

Time and Date Request Submitted to Federal On-Scene Coordinator:

A. No dispersants may be applied.

B. Dispersants may be used under noted conditions (if any) and in limited or selected areas (see attached chart).

C. Dispersants may be applied as requested above in Section II.*

*Requests exceeding 20 gals/acre require Alaska Regional Response Team approval.

Signature of Federal On-Scene Coordinator:

Printed Name of Federal On-Scene Coordinator:

Time and Date of Decision:

ARRT Approved 04/15/92
Dispersant Use: Zones 2 & 3

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Figure D-3: Dispersant Mission Requirements Form

Spill Location: Latitude _____ Longitude _____
 Bearing: _____ °T Range _____ from Common Geographic Point

Estimated Volume to be Treated: _____ bbl
 Slick Area: _____ (sq mi/sq ft/acres), Coverage: _____ %
 Release Status: Continuous: _____ Intermittent: _____ Stopped: _____

On-Scene Weather: Temperature: Air: _____ Water: _____
 Cloud Cover: Percentage: _____ Ceiling: _____ (ft)
 Wind: Speed: _____ (kt) Direction: _____
 Turbulence: Surface: _____ Altitude (ft): _____
 Sea State: Feet: _____

Spraying Area: N _____ W _____ Corner Points
 N _____ W _____
 N _____ W _____
 N _____ W _____, or
 Length (ft/miles): _____ Orientation (°T): _____

Dispersant Dosage: Gal/Acre _____ or Dispersant to Oil Ratio _____
 Dispersant Pump Rate: Gal/Min _____ # of Nozzles: _____
 Spray Mission Start Time: _____

Spotter Aircraft Designation: Frequency: Primary _____ MHz _____
 (Secondary) _____ MHz _____

Monitoring Vessel Designation: Frequency: Primary _____ MHz _____
 (Secondary) _____ MHz _____

Recommended Spraying Speed & Altitude (Pilot's discretion): Knots: _____ Feet: _____

Aircraft Loitering Area and Altitude: NAVAID _____ Bearing (°T) _____
 Range: _____ (miles) Altitude: _____ (ft)

Post Mission Actions (i.e. reload for subsequent mission, refuel, etc.): _____

Appendix H – Logistical Support Services & Supplies

Chukchi Sea Oil Spill Response Plan

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Acronyms

ACS	Alaska Clean Seas
APICOM	Association of Petroleum Industry Co-Op Managers
ARRT	Alaska Regional Response Team
BSEE	Bureau of Safety and Environmental Enforcement
COP	ConocoPhillips Company
FLIR	Forward Looking Infra-Red
ICS	Incident Command System
lbs	pounds
MSRC	Marine Spill Response Corporation
OSRP	oil spill response plan
SAM	Staging Area Manager
UHF	ultra-high frequency
VHF	very-high frequency

APPENDIX H LOGISTICAL SUPPORT SERVICES & SUPPLIES

The information set forth in this appendix is not required for an oil spill response plan (OSRP) under 30 CFR 254 Subpart B. This supplemental information provides context for the rest of the OSRP, and may facilitate ConocoPhillips Company's (COP's) ability to respond quickly and effectively in the unlikely event of an oil spill, in compliance with 30 CFR 254.1. COP neither seeks nor opposes Bureau of Safety and Environmental Enforcement (BSEE) approval of this part of the plan.

Logistical support in the event of a large oil spill would be managed by the Logistics Section within the Incident Command System (ICS) structure. The Logistics Section Chief is responsible for services and support including facilities, transportation, communications, medical and food services, and material supply.

A. Area Logistics

The Chukchi Sea project area is located approximately 120 statute miles, or 104 nautical miles, west of Wainwright, Alaska. As presented in the worst-case discharge scenario (Appendix C), oil spill modeling trajectories indicate there is minimal possibility oil could potentially impact the nearshore environment.

COP has prepared special contingencies for the slight potential of oil impacting the nearshore region of the Chukchi Sea coast. COP has identified a nearshore response system that can be easily transported and readily deployed. Field personnel assessed the nearshore environment and identified locations amenable to equipment deployment from nearshore, vessel-based response assets.

COP has an existing logistical support infrastructure for its operations in Alaska. Transportation equipment, coordination procedures, and maintenance procedures are in place under normal operations for the North Slope, and equipment and procedures can be extended to the Chukchi Sea. COP has contracts for operational logistical support. Additionally, Alaska Clean Seas (ACS) maintains master service agreements with various contractors, which, as a member of ACS, COP may use during a spill response.

Logistical support for spill response is provided through qualified response contractors. Additional response resources, if needed, would be delivered by fixed-wing cargo transport to Wainwright Airport and transported via landing craft to the spill site.

Additional personnel and equipment resources may be accessed through ACS's membership in the Association of Petroleum Industry Co-Op Managers (APICOM) mutual aid agreement, as described in the *ACS Technical Manual*, Volume 1, Tactic L-10, and also through COP's membership in the Marine Spill Response Corporation (MSRC).

Depending on the severity of a situation, federal and state logistics may also support the response. Examples of these functions include ordering, tracking and servicing government resources, arranging for transportation and lodging for government response staff, providing communications to government oversight staff, and performing other logistical functions specifically in support of the government oversight role. Further details regarding federal and state logistical capabilities can be found in Section B

(Resources) of the *North Slope Subarea Contingency Plan*, developed by the Alaska Regional Response Team (ARRT).¹

Transport of out-of-region resources to the area would be via aviation or marine assets, as described in the following sections. Table H-1 provides distances from Anchorage and Fairbanks to nearby community airports. Transit times are given for Lockheed L-382 Hercules cargo aircraft, because they are the most likely heavy-lift aircraft used during a spill response.

Table H-1 Distance and Transit Times for North Slope Communities

Route	Distance (nautical miles)	Transit Time, Lockheed L-382 Hercules (estimated)
Anchorage to Barrow	624	2 hours - 15 minutes
Anchorage to Point Hope	612	2 hours - 12 minutes
Anchorage to Wainwright	615	2 hours - 13 minutes
Anchorage to Deadhorse	555	2 hours - 1 minute
Fairbanks to Barrow	437	1 hour - 38 minutes
Fairbanks to Deadhorse	340	1 hour - 20 minutes

B. Aviation Logistics

The area receives regular commercial flight service for cargo and personnel. The communities of Barrow, Point Hope, Point Lay, and Wainwright all have airports with regularly scheduled commercial flights; air charter services to these locations are also available.

Anchorage is the main hub airport for air cargo in Alaska. Response supplies and personnel arriving by air from outside Alaska would transit through Ted Stevens Anchorage International Airport, with additional support from the Fairbanks International Airport.

Fixed-wing aircraft can transport personnel and equipment to public gravel airstrips located at Barrow, Wainwright, Point Lay, and Point Hope. These airstrips are capable of supporting the Lockheed L-382 Hercules cargo aircraft, helicopters, and smaller fixed-wing aircraft, and can serve as logistical hubs for shoreline assessment, protection, or cleanup operations. Other runways in the region include military airstrips at Lonely Air Station and Cape Lisburne Long Range Radar Station, and the privately-owned Red Dog Airport. Table H-2 provides descriptions of area runways, along with cargo limitations for Lockheed L-382 Hercules cargo aircraft for commercially available airports.

¹ The *North Slope Subarea Contingency Plan* can be accessed online at http://dec.alaska.gov/spar/perp/plans/scp_ns.htm.

Table H-2 Chukchi Area Runway Descriptions

Runway Location	FAA Airport Code	Runway Information				Lockheed L-382 Hercules Cargo Capacity		Ownership
		Length (feet)	Width (feet)	Surface	Orientation	In (lbs)	Out (lbs)	
Barrow	BRW	7,100	150	Asphalt	7/25	40,500	45,000	Public
Cape Lisburne	LUR	4,805	135	Gravel	8/26	39,500	45,000	Private/Air Force
Icy Cape	2AK8	3,200	75	Gravel	6/24	-	-	Private/Navy
Lonely	AK71	5,000	100	Gravel	7/25	-	-	Private/Air Force
Point Hope	PHO	3,992	75	Asphalt	1/19	39,000	16,000	Public
Point Lay	PIZ	4,500	100	Gravel	5/23	41,000	0	Public
Red Dog	DGG	6,321	100	Asphalt	-	40,500	45,000	Private
Wainwright	AWI	4,494	90	Gravel	5/23	40,500	45,000	Public
Wainwright AS	AK03	3,000	100	Gravel	3/21	-	-	Private/Air Force

I. Commercial and Charter Flights for Personnel

The communities of Barrow, Point Hope, Point Lay, and Wainwright have regularly scheduled commercial air service. Alaska Airlines flies Boeing 737 series jet aircraft (typically 737-400, carrying up to 144 passengers; see Figure H-1) into Barrow and Deadhorse. COP also operates four 737 charter aircraft between Anchorage and Deadhorse under a joint contract with Shared Services Aviation. Shared Services Aviation jet aircraft can carry either 111 passengers (737-205C) or 136 passengers (737-700NG). The 737-205C aircraft are equipped to land on gravel runways, such as Kuparuk.

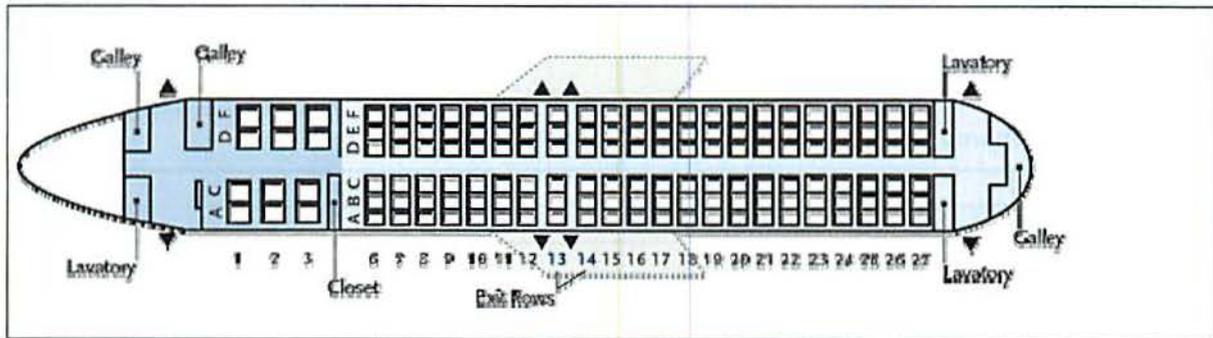


Figure H-1 Alaska Airlines 737-400 Layout

(Figure courtesy of Alaska Airlines)



Figure H-2 Shared Services Aviation 737-700 Aircraft

(Photo courtesy of ConocoPhillips Aviation)

Shared Services Aviation also operates one CASA 212 and one DeHaviland Twin Otter for intra-slope travel. The CASA is based out of Deadhorse and the Twin Otter is based out of Kuparuk. These aircraft are normally used for passenger and freight service and pipeline patrol within the North Slope. The Twin Otter is also equipped with FLIR (Forward Looking Infra-Red) equipment for oil spill detection. Table H-3 provides general capacities of these aircraft.

Table H-3 Shared Services Aviation, North Slope Aircraft

Capability	CASA 212	Twin Otter
Seating	18	15
Cargo	4,000 lbs	3,000 lbs
Pallet Capacity	Four 48"X40" on main floor up to 1,100 lbs each and one 48"X40" on cargo ramp up to 800 lbs. Max height 5'6"	One 48"x40" up to 1,000 lbs
Dimensions	20'L X 5'6"H X 5'6" W (w/seats) or 6'10" W (w/o seats)	18'4"L X 50" W X 56"H

Era Aviation operates flights from Barrow to Wainwright, Point Lay, and Point Hope on a scheduled basis, operating as Hageland Aviation, using twin-engine Piper Navajo (9-passenger capacity) or other similar aircraft. Charter flights are also available utilizing Piper Navajo or larger Beechcraft 1900C (16-passenger capacity) aircraft.

II. Air Cargo

The most common heavy-lift cargo aircraft operating within Alaska include Lockheed L-382 Hercules, Douglas DC-6, and cargo/combi versions of Boeing 737 jet aircraft.

Alaska Airlines operates one Boeing 737-400F all-cargo freighter aircraft and five 737-400C combination cargo/passenger aircraft. These aircraft are limited to airports capable of handling large jet aircraft (Anchorage, Fairbanks, Barrow, Deadhorse, Kotzebue).



Figure H-3 Alaska Airlines 737-400C Combi Aircraft

(Photo courtesy of Alaska Airlines)

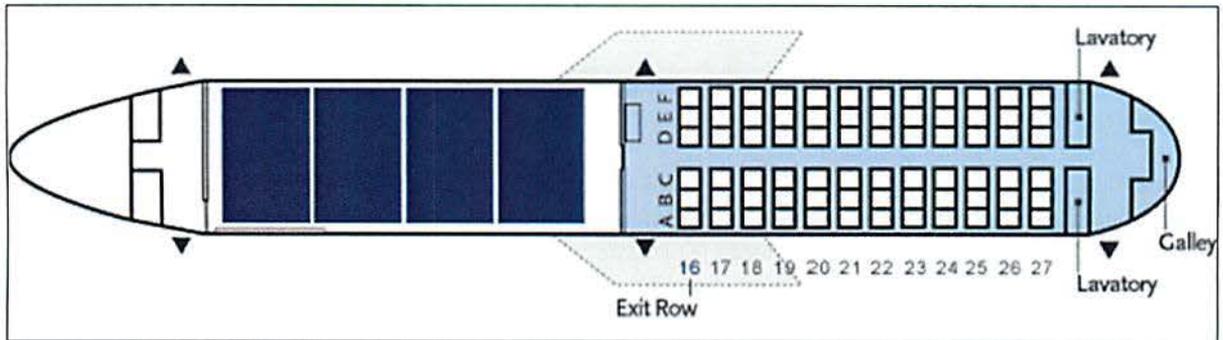


Figure H-4 Alaska Airlines 737-400 Combi Cabin Layout

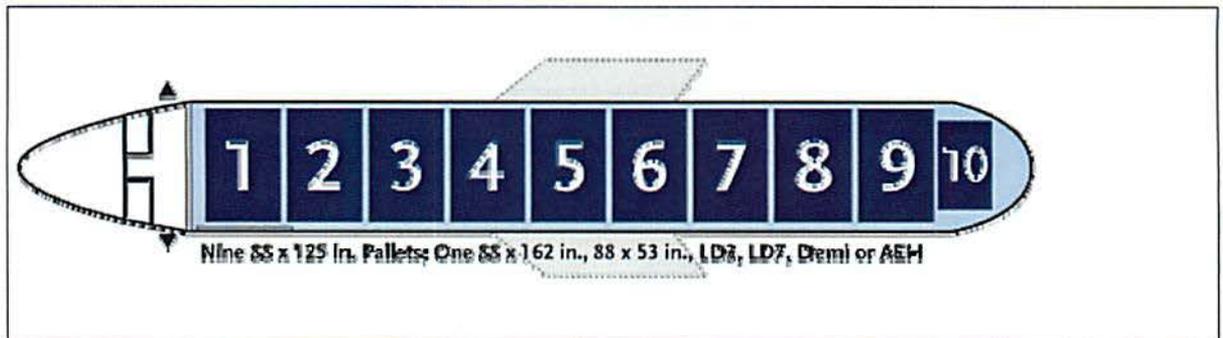


Figure H-5 Alaska Airlines 737-400 Freighter Cabin Layout

(Figures courtesy of Alaska Airlines)

Heavy-lift civilian air freight is generally handled by Lynden Air Cargo, which operates six L-382 aircraft (Figure H-6). Lynden maintains a minimum of one Hercules aircraft in Alaska, supplemented by a second large cargo aircraft during the spring and fall, depending on forecasted usage. The U.S. Coast Guard and the Alaska Air National Guard also operate military variants of the L-382 (C-130) in Alaska. Maximum payload capacity of the Lockheed L-382 Hercules is 48,000 pounds, but runway length and composition limit the payload into to the smaller communities. The L-382 can accommodate eight pallets or containers; the first seven with dimensions of 108 inches in length, 88 inches wide, and 96 inches high, and one with dimensions of 108 inches in length, 88 inches wide, and 75 inches high.



Figure H-6 Lyndon Air Cargo L-382 Aircraft

(Photo courtesy of Lyndon Air Cargo and Wikipedia)

Everts Air Cargo operates up to eight DC-6 aircraft in Alaska, depending on the season. The DC-6 has a smaller capacity than the L-382, but can land on smaller airstrips. Everts Air Cargo also operates Curtis Wright C-46 (ex-military) and McDonnell Douglas DC-9 cargo aircraft.

Table H-4 Everts Air Cargo Aircraft

Aircraft	Quantity	Average Payload	Minimum Runway Length
DC-6	8	3,000 cubic feet / 28,000 lbs	3,500 ft
C-46	2	1,500 cubic feet / 12,000 lbs	3,500 ft
DC-9	5	3,500 cubic feet / 32,000 lbs	5,900 ft



Figure H-7 Everts Air Cargo DC-6

(Photo courtesy of Everts Air Cargo)



Figure H-8 Everts Air Cargo C-46

(Photo courtesy of Everts Air Cargo)

Other cargo aircraft are operated by Evergreen Aviation, Northern Air Cargo, and Era Aviation. Table H-5 gives a brief description of heavy-lift cargo aircraft generally available within Alaska.

Table H-5 Alaska Heavy-Lift Cargo Aircraft

Aircraft	Inventory	Payload (pounds)	Operator	Location
Boeing 737-400F	1	45,000	Alaska Airlines	Anchorage / Seattle
Boeing 737-400C	5	20,000		
Boeing 747-200	11 to 12	247,000	Evergreen Aviation	Anchorage
DC-9	7 to 8	34,000		
CASA 212-200	5	4,000		
DC-6 (all cargo)	8	28,600	Everts Air Cargo	Fairbanks/ Anchorage
C-46 (all cargo)	2	14,000		
DC-9 (all cargo)	5	32,000		
Embraer EMB 120	1	7,000		
Lockheed L-382	6	48,000	Lyndon Air Cargo	Anchorage
727-100	1	39,000	Northern Air Cargo	Fairbanks
ATR42	1	7 to 11,000		
Shorts SD330	3	5,000	Era Aviation (Arctic Circle Air)	Fairbanks

C. Marine Logistics

Barge and landing craft are the primary marine transport service to the coastal communities in the Chukchi Sea area. Marine logistical traffic occurs during the open-water season, typically from July through late October.

Appendix H – Logistical Support Services & Supplies

Table H-6 Distances and Response Times Within Area

Distances (in nautical miles)					
Location	West Dock	Barrow	Red Dog	Nome	Dutch Harbor
Wainwright	266	80	285	500	1050
Kasegaluk Lagoon	325	140	235	420	1050
Drill Location	350	166	250	435	1060
Point Lay	360	160	205	420	970
Cape Lisburne	450	250	115	325	860
Red Dog	560	-	-	-	-
Response Times (in Days at 5 nautical miles per hour)					
Location	West Dock	Barrow	Red Dog	Nome	Dutch Harbor
Wainwright	2.2	0.7	2.4	4.2	8.8
Kasegaluk Lagoon	2.7	1.2	2.0	3.5	8.8
Drill Location	2.9	1.4	2.1	3.6	8.8
Point Lay	3.0	1.3	1.7	3.5	8.1
Cape Lisburne	3.8	2.1	1.0	2.7	7.2
Red Dog	4.7	-	-	-	-

Table H-7 provides typical steaming distances from typical west coast load-out ports to the Chukchi Sea area.

Table H-7 Ocean Travel Distances

	Anchorage, AK	Point Hope, AK	Point Lay, AK	Wainwright, AK
Long Beach, CA	2,223	3,199	3,329	3,410
San Francisco, CA	1,882	2,858	2,988	3,069
Portland, OR	1,520	2,579	2,709	2,790
Seattle, WA	1,428	2,512	2,642	2,723
Ketchikan, AK	1,656	3,273	3,403	3,484
Port Valdez, AK	385	1,629	1,759	1,840
Dutch Harbor, AK	824	793	923	1,004

D. Support Logistics

Support services will include lodging, meals, sanitation, communications, emergency medical and safety services, and waste management. The existing support logistics infrastructure present on the North Slope, as well as a master services agreement with ACS for support logistics response during spill operations, can be extended to the Chukchi Sea.

Personnel for onshore oil spill response will be stationed at Barrow, Wainwright, remote camps, and on vessels. The exact location of the camps will be dictated by the trajectory and potential landfall of the spill. Where needed, options for remote lodging will include the use of expeditionary-type tents and onboard vessels. Setting up remote camps will require land-use permits. North Slope Borough land-use permits

Appendix H – Logistical Support Services & Supplies

can be accessed via ACS. COP has contacted several vendors regarding logistical support for remote camps. In the event of a spill, COP would immediately contact these vendors and begin mobilization of equipment. Table H-8 provides a brief overview of potential remote site lodging options.

Table H-8 Remote Site Lodging Options

Type of Lodging	Capacity	Setup Time	Potential Suppliers
Rigid-Frame Tent Remote Camp (Air-Transportable)	5 to 500	Minimum 2 weeks, plus transport time	Arctic Structures Taiga Ventures Western Shelter
ATCO-style Camp	5 to 1,500	Minimum 2 weeks, plus transport time	Arctic Structures Doyon Northern Trailer
Accommodation Barge	20 to 100	3 weeks to 2 months	Bering Marine Alaska Solutions
Chartered Ferry	44 to 320	2 weeks	Alaska Marine Highway System
Floatel or Floating Camp	400 to 500	1 to 2 months	Adaltec Technologies Inc.
Chartered Cruise Ship	100 to 1,200	3 months to 2 years	Various

Vessel-based lodging will avoid onshore permitting issues and can be located close to the nearshore and onshore response operations to reduce transit time. Vessel-based lodging could include floating logging or fishing camp facilities, small cruise vessels, ferries, and public vessels.

Lodging accommodations in the communities of Point Hope, Point Lay, Wainwright, and Barrow are limited but include hotels, schools, churches, public health clinics, and village facilities. None of the Chukchi Sea coastal communities have the capacity to support an extended stay by a shore-based oil spill response crew estimated between 250-300 personnel. Accommodations will also be available at Deadhorse/Prudhoe Bay and include hotels and personnel camps operated by the producers and private entities. Table H-9 provides rough estimates of lodging in the area. In the event of a large oil spill, additional temporary camps or offshore housing onboard vessels would be required.

Table H-9 Chukchi Area Lodging

Location	Accommodations	Room Availability	Personnel Capacity
Point Hope	Whalers Inn	24	48
	Public Health Clinic	4	4
	School	Gym and 15 classrooms	200
	North Slope Borough Housing	4-bedroom house can accommodate 8 people	8
Point Lay	Cully Camp	15 + 4 summer in conex	30 + 4
	Public Health Clinic	only medical	
	Kall School	Gym and 8 classrooms	100
	Water treatment facility	2 bedroom apartment	4
Wainwright	Olgoonik Hotel	28 rooms	40
	Public Health Clinic	2 rooms	4
	North Slope Borough Housing	4 bedroom house can accommodate 8 people	8
	Olgoonik Corporation	24 bed camp	24

Appendix H – Logistical Support Services & Supplies

Table H-9 (Continued): Chukchi Area Lodging

Location	Accommodations	Room Availability	Personnel Capacity
Barrow	King Eider Inn	19 rooms	38
	Barrow Airport Inn	16 rooms plus 3 rollouts	32 + 3
	Top of the World Hotel	44 rooms	70
	High School	Gym and classrooms	200

Table H-10 provides a listing of logistical support contractors that may be used in support of a large oil spill incident.

Table H-10 Logistical Support Contractors

Company	Services	Contact
Transportation		
Era Helicopters 6160 Carl Brady Drive Anchorage, AK 99502	Rotary-wing passenger transport, medevac, small cargo, aerial ignition	(907) 248-4422 (907) 550-8600
Air Logistics Alaska, LLC 1915 Donald Avenue Fairbanks, AK 99701	Rotary-wing passenger transport, medevac, small cargo, aerial ignition	(907) 452-1197
Peninsula Airways, Inc. 6100 Boeing Avenue Anchorage, AK 99502	Fixed-wing passenger transport, cargo transport, medevac	(907) 243-2485
Era Alaska 4700 Old International Airport Road Anchorage, AK 99502	Fixed-wing passenger transport, cargo transport, medevac	(800) 866-8394 (907) 248-4422
Carlisle Transportation Systems 1800 East 1st Avenue Anchorage AK 99501	Ground transportation to/from Deadhorse/Anchorage	(907) 276-7797 (800) 478-1853
Lynden Transport 3027 Rampart Drive Anchorage, AK 99501	Ground transportation to/from Deadhorse/Anchorage	(907) 276-4800 (800) 326-5702
Lynden Air Cargo 6441 South Airpark Place, Anchorage AK 99501	Heavy-lift, fixed-wing air cargo including C130	(907) 243-7248, (877) 243-7248
Bering Marine Corporation 6400 S. Airpark Place, Suite 1 Anchorage, Alaska 99502	Marine services to remote areas	(907) 248-7646 (800) 922-7501
Bowhead Transport 4025 Delridge Way SW, Suite 160 Seattle, WA 98106	Marine cargo transportation Barge and lighterage services Vessel leasing and operations Logistics support	(800) 347-0049 (206) 957-5260 Barrow: seasonal
Northland Services 4025 Delridge Way SW, Suite 100 Seattle, WA 98106	Tug and barge service	(800) 426-3113 (206) 763-3000

Appendix H – Logistical Support Services & Supplies

Table H-10 (Continued): Logistical Support Contractors

Company	Services	Contact
Crowley 201 Arctic Slope Ave Anchorage, AK 99518	Harbor ship assist and tanker escort, ocean toting, heavy-lift barge transportation, fuel sales, and distribution	(907) 777-5505 (800) 977-9771
Vitus Marine LLC 113 W. Northern Lights Blvd, Suite 200 Anchorage, AK 99503	Marine cargo and fuel delivery	(907) 278-6700
Maritime Helicopters, Inc. 3520 F.A.A. Road, Homer, Alaska 99603	Helicopter (Bell 206 and 407)	(907) 235-7771
Everts Air Cargo 6111 Lockheed Avenue Anchorage, AK 99502	Air cargo (including fuel)	(907) 243-0009 (866) 242-0009
Dunlap Towing Company 617 North First Street La Conner, WA 98257	Marine transportation	(360) 466-3114
Communications		
Alaska Telecom 6623 Brayton Drive Anchorage, AK 99507	Remote site systems, microwave/satellite radio systems, handheld radios, satellite, and cellular telephones	(907) 344-1223
Wire-Com - UIC 6700 Arctic Spur Road Anchorage, AK 99518	Communications, data and electrical	(907) 563-2240
ProComm/Motorola 4831 Old Seward Hwy Suite 111 Anchorage, AK 99507	Radio communications Motorola service Wireless	(907) 563-1176
North Slope Telecom 2020 E Dowling #3 Anchorage, AK 99507	Telecommunications services Feasibility studies and system design Operations and maintenance services Aviation, marine, and power systems	(907) 562-4693
GCI 2550 Denali Street, Suite 1000 Anchorage, AK 99503	Cellular services, local and long-distance telephone service, WAN connectivity within Alaska and the Lower 48, Internet service (dial, DSL, T1)	(907) 265-5600
ASTAC 4300 B Street, Suite 500 Anchorage, AK 99503	Local and long-distance telephone service, Internet service (DSL, dial, wireless), cellular service	(907) 563-3989
AT&T Alascom 505 E. Bluff Drive Anchorage, AK 99501	Long-distance telephone service, Internet service, and WAN connectivity within Alaska and the Lower 48.	800-620-6520
Facilities		
Marsh Creek LLC 2000 E. 88 th Avenue, Suite 100 Anchorage, AK 99507	Housekeeping and catering	(907) 258-0050
Arctic Structures 9312 Vanguard Dr Anchorage, AK 99507	Planning, design, and construction of remote camps Metal and modular buildings	(907) 522-2425

Appendix H – Logistical Support Services & Supplies

Table H-10 (Continued): Logistical Support Contractors

Company	Services	Contact
Taiga Ventures 2700 S Cushman St Fairbanks, AK 99701	Remote camps Camp services Drilling supplies	(907) 452-6631
Pacific Rim Logistics 3201 C Street, Suite 300 Anchorage, Alaska 99503	Remote logistics Transportation services	(907) 261-9440
Bering Marine 6441 S. Airpark Place Anchorage, AK 99502	Barge camps	(907) 248-7646
Doyon Universal Services, LLC 701 W Eighth Ave, Suite 500 Anchorage, AK 99501	Camps and catering	(907) 522-1300
Well Control		
Well control specialist	Well control and relief well operations	TBD

Mobile Command Centers and Staging Area Manager Offices

COP has the ability to mobilize a Mobile Command Centers and Staging Area Manager (SAM) Offices located on the North Slope. Some of these facilities are owned by COP, and others are available through ACS. Command Centers and SAM Offices are all uniquely equipped but generally have the resources to conduct command and control operations from remote areas or away from permanent infrastructure. COP owns a highly evolved 50-foot-long Mobile Command Center located in Kuparuk, which is equipped with the following:

- 17 kilowatt generator;
- An array of radio equipment including air-to-ground, ultra-high frequency (UHF), very-high frequency (VHF), single side band, and marine VHF;
- Staging area laptop computer loaded with SAM software;
- Multiple phones, faxes, and copy machines;
- Wireless communication throughout the module;
- Remote camera system with large flat panel display;
- Various white boards and easels for use in conducting meetings and establishing a situation status board;
- Weather station;
- Multiple office chairs and workstations; and
- Hot and cold beverage capability.

D. PERMITS AND INFORMATION REQUIREMENTS

During a responsible-party response to an oil spill, the Federal On-Scene Coordinator (FOSC) will call upon representatives of appropriate wildlife resource agencies (Table 4) for input on important habitat and wildlife concentration areas for response actions regarding the protection of wildlife (ARRT, 2010). In addition, permits are usually required to conduct secondary and tertiary responses by responsible party representatives. These permits are based on the activity and species involved and are submitted to the Incident Command System who then submits them to the agency with jurisdiction over the affected species (Table 5); these checklists and permit applications are provided in Annex G of ARRT's Unified Plan located at the ARRT website: <http://www.akrrt.org/UnifiedPlan/index.shtml>.

ACS holds the following permits from ADF&G:

- Permit FG05-III-0012: Hazing, capture, stabilization, transport, and rehabilitation of birds.
- Permit FG05-III-0013: Hazing terrestrial mammals.
- Permit FG05-III-0014: Stabilization, transport, and disposition of large terrestrial mammals

In addition, ACS holds a permit from the FWS that covers hazing, capture, stabilization, and treatment of migratory birds. This permit provides the required federal authorization to perform the functions allowed in the ADF&G permit. To date, permits have not been developed for secondary and tertiary responses involving marine mammals; as such, ACS does not hold permits to haze or handle marine mammals. Protocols for secondary and tertiary responses for marine mammals are currently in the process of development by state and federal agencies, Alaska Clean Seas, industry, and the Alaska SeaLife Center.

**TABLE 4:
WILDLIFE RESOURCE AGENCY CONTACT INFORMATION**

SPECIES	AGENCIES/CONTACTS	
Migratory Birds (FWS)	U.S. Fish and Wildlife Service	Alaska Department of Fish and Game
Pacific Walrus (FWS)	<i>Primary Contact</i>	<i>Primary Contact</i>
Polar Bears (FWS)	Catherine Berg	Brad Dunker
Caribou (ADF&G)	Fax: 907-271-2786	Fax: 907-267-2499
Muskoxen (ADF&G)	Work: 907-271-1630	Work: 907-267-2541
Moose (ADF&G)	[REDACTED]	[REDACTED]
Brown and Black Bears (ADF&G)	Catherine.berg@fws.gov	Bradley.dunker@alaska.gov
	<i>Alternate Contact</i>	<i>Alternate Contact</i>
	Philip Johnson	Jack Winters
	Fax: 907-786-3350	Fax: 907-456-3091
	Work: 907-786-3483	Work: 907-459-7285
Wolves (ADF&G)	[REDACTED]	[REDACTED]
	Philip.johnson@fws.gov	winters@fishgame.state.ak.us
	<i>Primary Contact</i>	
Ringed Seals (NMFS)	Brad Smith	
Harbor Seals (NMFS)	Fax: 907-271-3030	
Spotted Seals (NMFS)	Work: 907-271-5006	
Bearded Seals (NMFS)	[REDACTED]	
Ribbon Seals (NMFS)	Brad.smith@noaa.gov	
	<i>Alternate Contact</i>	
	Matt Eagleton	
	Fax: 907-271-3030	
Cetaceans (NMFS)	Work: 907-271-6354	
	[REDACTED]	
	Matthew.eagleton@noaa.gov	

Source: ARRT (2010), Appendix 26. Contact information updated and verified August 4, 2011.



Appendix K - Waste Management Plan for Emergency Response

Chukchi Sea Oil Spill Response Plan

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Acronyms

ACS	Alaska Clean Seas
ADEC	Alaska Department of Environmental Conservation
ADNR	Alaska Department of Natural Resources
AIC	Anchorage Interstate Construction LLC
ARRT	Alaska Regional Response Team
ASR	Alaska Soil Recycling, Inc.
BPXA	BP Exploration (Alaska) Inc.
BSEE	Bureau of Safety and Environmental Enforcement
CFR	Code of Federal Regulations
COP	ConocoPhillips Company
EPA	U.S. Environmental Protection Agency
FOSC	Federal On-Scene Coordinator
FWS	U.S. Fish and Wildlife Service
IMT	Incident Management Team
LOSC	Local On-Scene Coordinator
McCoy	McCoy and Associates, Inc.
NMFS	National Marine Fisheries Service
OCS	Outer Continental Shelf
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
OSRP	oil spill response plan
PPE	personal protective equipment
RCRA	Resource Conservation and Recovery Act
RP	Responsible Party
SHPO	State Historic Preservation Officer
SOSC	State On-Scene Coordinator
TSD	treatment, storage, and disposal
UC	Unified Command
USCG	United States Coast Guard
WMP	Waste Management Plan

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APPENDIX K. INTRODUCTION

The information set forth in this appendix is not required for an oil spill response plan (OSRP) under Title 30 of the Code of Federal Regulations (CFR), Part 254, Subpart B. This supplemental information provides context for the rest of the OSRP, and may facilitate ConocoPhillips Company's (COP) ability to respond quickly and effectively in the unlikely event of an oil spill. COP neither seeks nor opposes Bureau of Safety and Environmental Enforcement (BSEE) approval of this part of the OSRP.

The collection, storage, transportation, treatment, and disposal of waste generated from a COP Outer Continental Shelf (OCS) spill response effort would be conducted in a safe and environmentally sound manner and would be handled in accordance with federal and state solid and hazardous waste regulations.

A spill event occurring from COP's Chukchi Sea exploration activities may generate wastes offshore, nearshore, or onshore. During an actual spill event, an incident-specific waste management plan (WMP) would be developed to address the necessary resources required to manage generated wastes using known spill conditions and volumes. The WMP would be approved by Unified Command (UC) prior to implementation.

In general, COP will follow the *Alaska Waste Disposal and Reuse Guide* (commonly called the "Red Book") for safe waste-handling practices. The "Red Book" was developed in a joint effort between BP Exploration (Alaska) Inc. (BPXA) and COP to provide consistent waste management guidance for employees and contractors working on the North Slope of Alaska.

Additional information and an electronic template for a WMP can be found on the Alaska Department of Environmental Conservation (ADEC) website at:

http://www.dec.state.ak.us/SPAR/perp/permits/pdf/UC_WasteManagement.pdf

A. Drilling Operations Solid and Liquid Waste and Discharge Information

Hazardous waste and other regulated waste routinely generated during COP offshore exploration drilling operations are not addressed in this WMP. Waste management planning for drilling operations is incorporated into COP's *Chukchi Sea Exploration Plan* as Section 7.0, "Solid and Liquid Waste and Discharge Information."

B. Emergency Response Recovered Oil and Waste Management Plan

This WMP is developed to assist spill response and/or incident management personnel in submitting a WMP to UC. The pre-identification of potential waste streams allows waste management options to be established. In the event of a spill, the UC would approve an incident-specific WMP.

Organization and Personnel

The Environmental Unit Leader within the Planning Section of the Incident Management Team (IMT) would prepare the WMP for UC approval. The Environmental Unit Leader or designated Waste

Appendix K–Waste Management Plan for Emergency Response

Management Specialist would liaise with regulatory agencies, coordinate with the Operations Section, and monitor field operations to ensure proper management of waste.

The Waste Management Task Forces under the Operations Section would coordinate the handling, storage, and disposal of waste. COP and Alaska Clean Seas (ACS) provide personnel for receiving, sampling, and coordinating transport of oily and/or hazardous wastes. The Decontamination Unit decontaminates tools, equipment, and boats and vessels.

In the event of a spill response from state land, the Lands Specialist would coordinate with the Alaska Department of Natural Resources (ADNR) and State Historic Preservation Office (SHPO) to identify and protect any potentially affected cultural resource sites.

Any encounters with oiled wildlife or recovery of animal carcasses would be coordinated with the Wildlife Unit Leader. Oiled wildlife would be handled in accordance with *Annex G* of the Alaska Regional Response Team (ARRT) *Unified Plan*.

In the event of a spill, the options and processes presented in this WMP will be used to create the incident-specific WMP. During an actual event, the Waste Management Specialist working within the IMT may adjust waste volumes based on incident-specific information.

The approved plan(s) would be distributed to supervisory personnel responsible for recovered oil and waste management activities. Task force personnel would be briefed on the elements of the plan that apply to their areas of responsibility.

Role of the Unified Command

The UC leads the IMT, directing all aspects of incident response, including approval of the incident-specific WMP. Whenever there is an incident involving more than one agency with jurisdiction, a UC is implemented (ARRT, 2010).

For a significant spill event, there would typically be On-Scene Coordinators (OSC) from the federal, state, and local governments, and the Responsible Party (RP). Each of these parties represent their organization within the UC.

The Federal OSC (FOSC) will have ultimate authority for incidents under federal jurisdiction; the State OSC (SOSC) will have ultimate authority for incidents not involving federal jurisdiction. In the case of a spill occurring offshore in federal waters, and involving activities onshore under state jurisdiction, the FOSC and the SOSC would provide a coordinated effort. The Local OSC (LOSC) would have command authority if there is an immediate threat to public safety.

Waste Handling

Although some exemptions apply when operating under emergency conditions, there are still Resource Conservation and Recovery Act (RCRA) requirements that must be met for preparedness, prevention, and contingency planning. The RCRA emergency provision is found in the 40 CFR 270.1(c)(3), which states that “treatment and containment” activities do not require a RCRA permit if conducted during an immediate response. Treatment and containment activities conducted in immediate response to hazardous waste discharges and spills (including the use of emergency structures such as tanks used for emergency secondary containment) are exempt from RCRA regulation. The U.S. Environmental

Appendix K–Waste Management Plan for Emergency Response

Protection Agency (EPA) created the immediate response exemption in order to encourage timely and effective responses to incidents. Once immediate response actions are complete, the exemption ends (McCoy, 2009).

Recovered crude oil and debris contaminated with recovered crude oil will be assumed to possess the *Exploration and Production* exemption from the RCRA Subchapter C Hazardous Waste Regulations. Reference 40 CFR section 261.4(b)(5). Waste determinations based on this exemption should be made with the understanding that crude oil and debris contaminated with crude oil may still exhibit characteristic hazard.

Waste would be characterized and handled only by trained personnel who perform waste handling tasks. Proper labeling and manifesting would also be managed by trained personnel.

Permitting and Approvals

The method of disposal for oil and contaminated materials from spill recovery operations must be approved and permitted by appropriate state and federal agencies. The Operations Section Chief, in consultation with the Environmental Unit Leader, determines the reuse, recycle, or disposal method best suited to the state of the oil, the degree of contamination of recovered debris, and the logistics involved in these operations. Applications for agency approvals and permits are completed before the determined method of disposal is implemented. An initial determination must be made regarding the classification of the waste as exempt, hazardous, or non-hazardous. This classification can be made on a case-by-case basis. The Environmental Unit Leader provides assistance in determining the classification if the status of the waste material is in question (ARRT, 2010).

ACS maintains pre-approved emergency and non-emergency use permits to aid in immediate spill response, including boom deployment and transportation of hazardous material. Disposal and processing of recovered fluids would be in accordance with ACS *Technical Manual* disposal tactics D-1 through D-5.

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C. Waste Identification and Characterization

Expected Waste Stream Categories

This section identifies waste streams that may be generated during an oil spill response effort. Table K-1 provides a list of waste categories that may be encountered during an oil spill response, along with examples of typical waste streams generated for each waste category. COP has dealt with many of these waste categories during routine operation and maintenance activities.

**TABLE K-1
RECOVERED OIL AND WASTE CATEGORIES EXPECTED FROM
A SPILL RESPONSE EFFORT**

WASTE CATEGORIES	EXAMPLES OF WASTE GENERATED
Recovered Oil	Free product Product containing debris Decant water Product containing water Product recovered from processing
Oily Liquid Wastes	Oily water (recovered or skimmed mixtures) Bilge water/ballast water from vessels Used engine oil and hydraulic fluids Fuels contaminated with water Decontamination water (from cleaning boats and equipment) Wash water from cleaning oiled wildlife
Oily Solid Wastes	Spent sorbents Oiled personnel gear and clothing Oiled response equipment (large amounts of oiled boom, sorbent pads, rags) Oily debris Shoreline / beach debris Oil-contaminated vegetation Oil-contaminated sand, gravel, soil Empty drums and containers with oily residue
Non-Oily Solid Waste / Garbage	Food waste Paper waste Used equipment Construction debris Non-oiled debris Domestic trash and garbage
Hazardous Waste	Sorbents/personal protective equipment (PPE) covered in fresh crude oil Batteries Solvents Aerosol cans Coolant filters Laboratory waste Light bulbs Paint waste
Domestic Wastewater	Portable toilets Sewage Gray water
Other Wastewaters	Storm water runoff Containment runoff Hydrostatic testing Excavation dewatering
Animal Carcasses	Oiled birds and mammals Oiled and non-oiled fish

Characterization

Sorbents, oiled personal protective equipment (PPE), soils, and debris that have been contaminated with fresh crude oil could exhibit a hazardous waste characteristic for benzene during the early hours of the initial response. The evaporation of volatile hydrocarbons occurs during the first 24 to 72 hours; as a result, it may be necessary to obtain analytical testing of sorbents, PPE, and debris contaminated with fresh crude oil during the initial spill response phase. Recovered crude oil and debris contaminated with recovered crude oil will be assumed to possess the *Exploration and Production* exemption from the RCRA Subchapter C Hazardous Waste Regulations. Reference 40 CFR section 261.4(b)(5).

Oily solid waste generated on subsequent days would be segregated and characterized based on the results of the first day of sampling and generator knowledge. Waste streams would continue to be sampled and analyzed until the data statistically supports characterization of the waste stream as non-hazardous.

To minimize the secondary impact of an oil spill, dead oiled wildlife should be removed from the environment as quickly as possible under the authorization of U.S. Fish and Wildlife Service (FWS) and/or the National Marine Fisheries Service (NMFS). The FWS and/or NMFS would recommend to the FOSC an appropriate incident-specific approach for the retrieval and dispositions of dead oiled wildlife in accordance with their respective areas of responsibility, including information about not collecting animal parts for personal use. Additional information concerning handling oiled wildlife can be found in Appendix I of this oil spill response plan and Annex G of the ARRT *Unified Plan*.

D. Recovered Oil and Waste Management Processes

Waste Segregation

Waste segregation minimizes the potential for cross-contamination and provides an opportunity for recycling and source reduction. To the extent possible, recovered oil, oily waste, and non-oily waste would be segregated during on-water, nearshore, and shoreline containment and recovery activities.

To ensure wastes are safely and properly disposed of, they would be placed in properly labeled storage containers, lined containment areas, or color-coded plastic bags so personnel can easily identify the contents. Contents of color-coded plastic bags are described as follows:

Clear Bags – Oily waste and debris (lightly oiled rags, sorbents, oiled PPE, and drained or crushed oil filters); oiled and non-oiled animal and fish carcasses

Blue Bags – domestic waste and garbage (food, plastic, etc.)

Individual bags, consolidated in Super Sacks[®], and 55-gallon drums would be used to store the majority of the oily and non-oily solid waste in a lined containment area. Additional lined containment would be used for stockpiling contaminated soils. All containers would be in good condition and compatible with the waste they hold.

Different waste types require different disposal methods. Oily wastes can be separated into liquid and solid components with various physical and mechanical separation methods. Table K-2 shows options available for oil, water, and debris separation. Wastes would be separated by type for temporary storage prior to transport.

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**TABLE K-2
OIL, WATER, AND DEBRIS SEPARATION METHODS**

TYPE OF MATERIAL	SEPARATION METHODS
LIQUIDS	
Non-Emulsified oils	Gravity separation of free water
Emulsified oils	Water can be released from oil by breaking the emulsion with: <ul style="list-style-type: none"> • Chemical treatment • Heat treatment • Centrifuge • Filter/belt press
SOLIDS	
Oil mixed with sand / Tar balls	Collection of leached liquid oil Removal of solids with sieves Extraction by washing with water or solvent Mechanical cleaning of sand
Oil mixed with cobbles and pebbles	Screening / Sieving Collection of leached liquid oil Extraction by washing with water or solvent Mechanical cleaning of sand/gravel
Oil mixed with wood, plastics, beach material, and sorbents	Screening Collection of leached liquid oil Flushing with water

Temporary Waste Storage Areas

In the unlikely event that oil makes it to shore, temporary waste storage areas would be set up to handle waste collected from beach cleanup activities. These temporary waste storage areas would allow waste management to proceed while preventing contamination from response-related activities.

Solid wastes may be consolidated in 55-gallon drums and Super Sacks[®], which can be slung with a helicopter or transported via landing craft from response vessels to shore-based facilities, to the nearshore response barge, or to the oil storage tanker for ultimate disposal. Recovered oil from shoreline and onshore cleanup activities would be stored in tanks.

Table K-3 summarizes the temporary storage methods used for handling waste generated from an offshore oil spill. All containers would be properly labeled with contents in accordance with applicable regulations. All waste transferred from vessels would be recorded on a waste log.

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**TABLE K-3
TEMPORARY STORAGE METHODS**

CONTAINER	ONSHORE	OFFSHORE	SOLIDS	LIQUIDS	NOTES
Drums	√	√	√	√	Open top or tight head, various sizes.
Lined Super Sacks®	√	√	√		Smaller bags are consolidated into lined Super Sacks® (can be slung with helicopter).
Lined Fish Totes or Soft-Sided Bulk Bins	√	√	√		Smaller bags can be consolidated in lined containers for storage.
Barges		√	√	√	A dedicated waste barge may be assigned. Only liquids would be stored in tanks. Solids would be stored on deck in designated areas.
Oil Storage Tanks/Tank Vessel	√	√		√	Decanting would eliminate some of the recovered water. Must be approved by the UC.
Bladders	√	√		√	Bladders of various sizes to be stored on nearshore response assets (i.e., nearshore oil spill response barge).
Pits	√		√	√	Pits would be lined.
Mobile Tanks	√	√	√	√	Portable, can be deployed easily.

Waste material would be controlled when entering and leaving the waste storage area. The Waste Tracking Sheet would be used to track waste generated from an oil spill event (Table K-4).

E. Recovered Oil and Waste Management Tactics

Offshore / Nearshore

Most offshore and nearshore response activities would focus on the containment and recovery of oil using various on-water tactics. Oil and oil-and-water emulsion would be collected with skimmer vessels and would be stored temporarily in portable tanks onboard the recovery vessels or barges. Decanting may be used to maximize storage capacity by draining off recovered water. If approved, decant water from skimming operations could be discharged into boomed containment for secondary recovery.

When recovery barges, mini barges, skimmer vessels, and bladders reach storage capacity, the oil and water mixture would be gauged, and oil and free water volumes would be measured. Recovered fluids would be transferred to an oil storage tanker. Ultimate disposal of recovered oil may be at a foreign refinery in accordance with COP environmental policy and relevant local laws and regulations.

Offshore and nearshore wastes would also include oiled PPE and gear, oiled debris, spent sorbents and boom. These wastes would be segregated using a color-coded bagging system. Oily solids would be collected in clear bags and consolidated in lined Super Sacks[®] or lined, soft-sided bulk bins, and/or leak-proof, covered containers (e.g., fish totes, drums). All contaminated material would be double bagged, secured, labeled accordingly, and stored in an approved location.

Barge and/or air transportation would be arranged for materials and wastes to be transported from the Chukchi Sea Exploration project area.

Shoreline

Shoreline wastes may include oiled sand, cobbles, debris, driftwood, kelp, and other beach materials. If contaminated material is determined to be present, UC would consider shoreline cleanup techniques detailed in the *ACS Technical Manual*, Volume 1, Tactics SH-1 through SH-12. Most tactics involve in situ remediation. If removal of oiled shoreline materials is required, they would be temporarily stored in lined Super Sacks[®]. Lined containment areas also may be used to temporarily store contaminated gravels and soils.

Shoreline operations would also generate oiled PPE and gear, oiled debris, spent sorbents, and domestic and human wastes. These wastes would be segregated using a color-coded bagging system. Oily solids would be collected in clear bags and consolidated in lined Super Sacks[®] and/or leak-proof, covered containers (fish totes, soft-sided bulk bins, drums). See Section D, Recovered Oil and Waste Management Processes.

The Super Sacks[®] and/or totes would be transferred to an onshore waste storage area or a waste staging area on a barge. The barge would have waste handlers trained in characterizing and properly segregating and labeling the waste.

Table K-6 shows waste categories; specific waste types; and transfer, storage, treatment, and disposal options.

Offsite disposal of soil is addressed by ADEC on a site-specific basis. There are several probable disposal/treatment options:

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- Transport materials to the North Slope DS-4 Material Transfer Station 1 waste cell for ultimate disposal at the Grind and Inject facility;
- Transport materials to an ADEC-approved soil treatment facility (Table K-7);
- Mobilize an ADEC-approved portable soil treatment facility to a location near the stored materials (Table K-8).

Specific types and capacities of temporary storage, cleanup materials, and disposal methods are described in the ACS *Technical Manual*, Volume 1, Tactics D-1 through D-5.

Waste Management Timeline

Day 1 Shift 1:

- Develop WMP.
- Submit Draft WMP for review by UC.
- Request resources needed to support the WMP.

Shift 2:

- Receive approval of Draft WMP.
- Supervisory personnel obtain and implement the WMP.
- Assign waste handling vessels.
- Set up shore-based waste handling areas.
- Mobilize vessel decontamination resources.
- Provide night shift vessel decontamination as needed.

Day 2

- Continue setup of shore-based waste handling areas.
- Set up shore-based and vessel decontamination areas.
- Begin receiving waste from night shift on waste handling vessels.

Days 3 to 5

- Revise WMP, if necessary (with Environment Unit Leader), and submit to agencies for approval.
- Continue waste collection, segregation, and handling offshore.
- If necessary, begin shoreline cleanup effort.

Days 6 to 11

- Begin receiving out-of-area resources.
- Continue waste collection, segregation, and handling on and off shore.
- Continue shoreline cleanup effort, if needed.

Days 12 to 30

- Transfer segregated onshore waste to a dedicated waste barge for ultimate disposal.

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- **First barge leaves for TSD facility (if using waste handling contractor); beginning a 12-day rotational cycle.**

Appendix K–Waste Management Plan for Emergency Response

**TABLE K-6
POTENTIAL RECOVERED OIL AND WASTE STREAM PROCESSES**

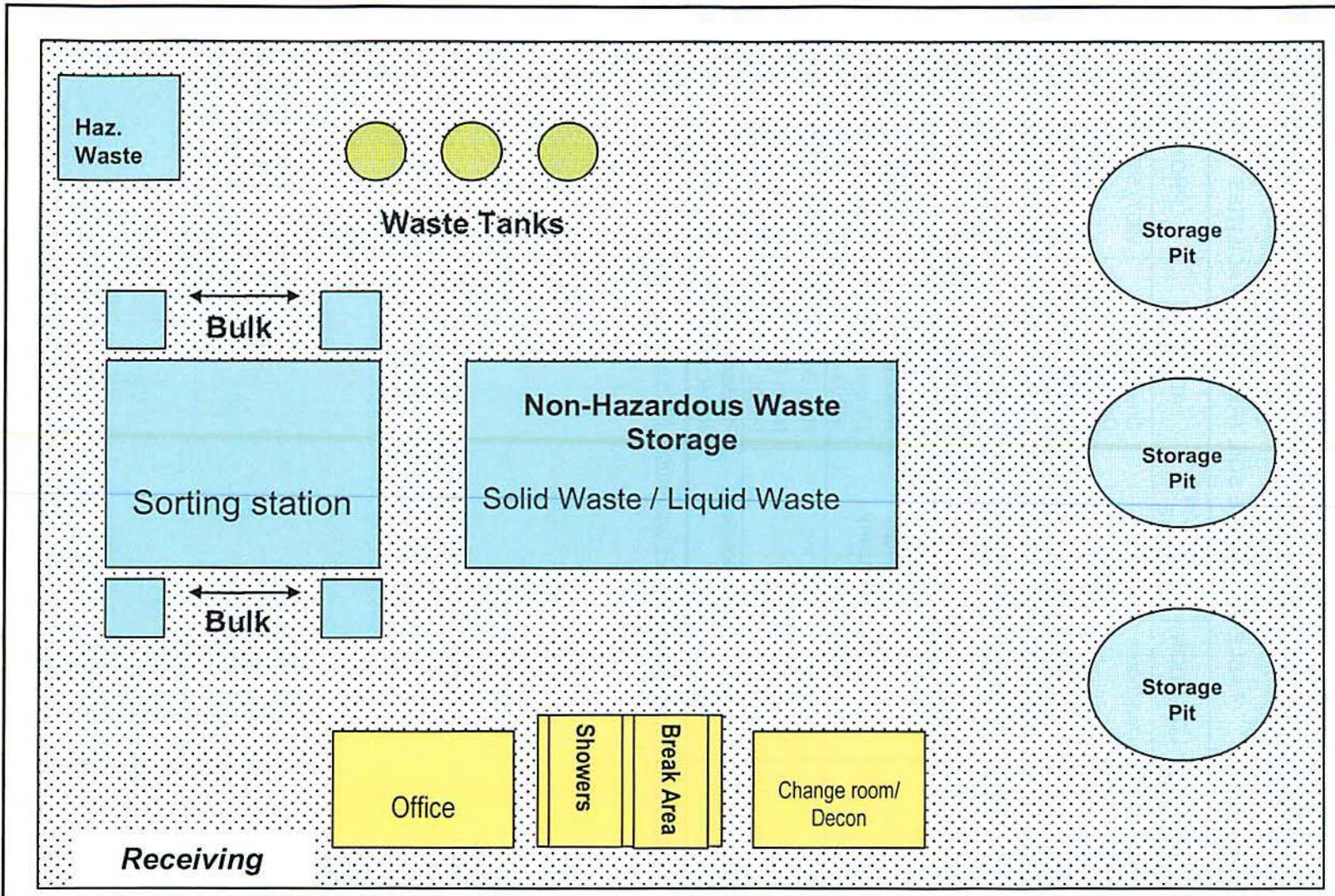
CATEGORY	SPECIFIC WASTE	SOURCE	STORAGE	TRANSFER, TREATMENT, AND/OR DISPOSAL
Recovered Oil	Not a waste	Oil recovery sites	Temporary storage tanks Recovery barges Mobile skimmers Mini barges Piping, pumps, and hoses Oil storage tanker	Collect recovered oil on mini barges, recovery barges, skimmer vessels, or bladders; potentially decant water to maximize storage capacity; gauge oil and water content. Transfer recovered oil to barge or oil storage tanker. Oil may be shipped to a foreign refinery.
Oily Liquid/ Wastewater	Water recovered with crude oil	Oil Recovery sites	Temporary storage tanks Vacuum trucks Recovery barges Mobile skimmers Mini barges Piping, pumps, and hoses Oil storage tanker	Decant application and plan approval from SOSOC if decant is used. Collect recovered oil in recovery barges, mini barges, bladders, or skimmer vessel; gauge oil and record oil and water content. Recovered oil would be transferred to barges or oil storage tanker. Recovered oil and oily liquid would be shipped to refinery.
	Oily decontamination and waste storage pit water	Decontamination areas Wildlife treatment areas	Portable tanks or drums Vessels Oil storage tanker	Collect oily water from vessels, decon areas, and wildlife treatment in covered containers.
	Bilge water	Vessels	On-board vessel storage Temporary storage tanks Bladders	Separate oil and water onboard vessel. Offload vessel bilge water onshore into temporary storage.
Non-Oily Liquid/ Wastewater	Sewage and gray water	Porta-potties Wildlife treatment areas Response vessels	Porta-potties Wildlife facilities Sewage system tanks	Marine sanitation devices, portable toilets, or holding tanks for vessels. Transfer sewage from vessel portable toilets or holding tanks to sewage pumping contractor at onshore recovery sites. Gray water collected in bladders or tanks for disposal offsite.

Appendix K – Waste Management Plan for Emergency Response

**TABLE K-6 (CONTINUED):
POTENTIAL RECOVERED OIL AND WASTE STREAM PROCESSES**

CATEGORY	SPECIFIC WASTE	SOURCE	STORAGE	TRANSFER, TREATMENT, AND/OR DISPOSAL
Oily Solids	Spent sorbents and PPE Spent boom Other oiled equipment or gear Oiled soil, gravel, tundra	Oil recovery, cleanup, and decontamination sites Wildlife treatment areas	Vessels Deck barge Consolidated in lined Super Sacks Lined fish totes Lined 9-cubic yard soft-sided bulk bin on vessel	Collected by vessels or onshore cleanup personnel. Pick up by Waste Management Task Force at onshore cleanup sites. Transferred in lined or sealed containers to waste storage area. Spent boom would be cut up for consolidation. Test, as needed, during first 24 hours of spill. If tested, manage as hazardous waste until test results are available. Non-hazardous: Ship to landfill or TSD facility. Hazardous: Ship to TSD facility.
Oily Solids (continued)	Vegetation and debris (kelp, shoreline debris, logs, and driftwood)	Oil recovery, cleanup sites	Clear bags Lined Super Sacks [®] Drums Vessels Lined Fish totes	Individual bags of waste consolidated in Super Sacks [®] Onsite open burning with SOSC approval; or collected on water or onshore by cleanup personnel. Picked up by Waste Management Task Force from response vessels or shallow draft collection vessels or at on shore recovery sites; Recoverable oil content: processing.
Non-Oily Solid Waste	Garbage Construction debris	Oil recovery, cleanup sites	Blue bags Lined Super Sacks [®] or Fish totes Lined 9-cubic yard soft-sided bulk bin on vessel	Collected in bags and consolidate in lined Super Sacks [®] . Collected in other lined containers.
Oiled animal and/or fish carcasses	Oiled sea life, birds, mammals	Oil recovery, cleanup sites	Clear bags Lined Fish totes Lined 9-cubic yard soft-sided bulk bins	Oiled deceased wildlife and fish would be bagged, labeled, and transferred to U.S. Fish and Wildlife personnel. Bag carcasses individually in clear plastic bags. Oiled, live wildlife would be immediately reported to the Wildlife Unit.

FIGURE K-1 TYPICAL WASTE HANDLING SITE



F. Waste Management Contacts

TABLE K-7 OFFSITE SOIL TREATMENT FACILITIES

FACILITY NAME	LOCATION	COMPANY NAME	ADDRESS	PHONE	CONTACT
Anchorage Interstate Construction LLC (AIC)	Deadhorse	AIC	One Lake Colleen Road Deadhorse, AK 99734	(907) 562-2792	Dave Chaput, Project Coordinator
Alaska Soil Recycling (ASR)	Anchorage	Alaska Soil Recycling, Inc.	1040 O'Malley Road Anchorage, AK 99515	(907) 349-3333	Brad Quade
Everett Soil Remediation		Rinker Materials Company	6300 Glenwood Avenue Everett, WA 98203	(425) 356-6619 (425) 346-6614 – fax	Larry Baker
OIT, Inc.	Moose Creek	OIT, Inc.	P.O. Box 55878 North Pole, AK 99705	(907) 488-4899 (907) 488-4823 – fax	Mark Sanford
YK Solutions	Bethel	YK Solutions, Inc.	PO Box 2807 Bethel, AK 99559	(907) 545-1775	Tom McCallson

Source: http://www.dec.state.ak.us/SPAR/csp/remed_off.htm

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TABLE K-8 APPROVED PORTABLE SOIL TREATMENT FACILITIES

FACILITY NAME	COMPANY NAME	ADDRESS	PHONE	CONTACT
Alliance Steel Construction	Alliance Steel Construction	3500 N. 12 th Street Superior, WI 54880	(715) 392-2433	Fred Paine
Cascade Environmental Inc.	Cascade Environmental, Inc.	P.O. Box 770189 Eagle River, AK 99577	(907) 696-2953	Henry Williams
Drake Construction, Inc.	Drake Construction, Inc.	P.O. Box 338 Kotzebue, AK 99752-0338	(907) 442-3512	Toby Drake
HAVE Soil Remediation	AGVIQ, Inc.	2121 Abbott Road Anchorage, AK 99507-4453	(907) 365-6299	Chris Olds
Soil Processing, Inc.	Soil Processing, Inc.	207 E. Northern Lights Blvd., Ste. 103-A Anchorage, AK 99503	(907) 274-3000	George Cline
Brady Environmental, Inc.	Brady Environmental, Inc.	P.O. Box 657 Sisters, OR 97759	(541) 280-5218 (541) 588-6093 fax	Patrick Brady prbrady@covad.net

Source: http://www.dec.state.ak.us/SPAR/csp/remed_port.htm

Currently, Alaska Soil Recycling, Inc. (ASR) is the only bonded soil treatment facility in Alaska. As a bonded facility, they are allowed to co-mingle contaminated soil for treatment under their approved facility operations plan. Post-treatment soil samples are collected and analyzed at regular intervals to ensure that contaminants are successfully treated. Because the post-treatment analytical results for co-mingled soils are provided directly to ADEC, the RP does not have to provide a separate copy of the post-treatment analytical results (ADEC <http://dec.alaska.gov/spar/guidance.htm>).

G. Decontamination

Overview

The Safety Officer would develop the site-specific Health and Safety Plan, which would address all the requirements in Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response Regulations (29 CFR 1910.120). One of the required elements of the site-specific Health and Safety Plan is decontamination.

The Safety Officer answers directly to the Incident Commander and has the authority to suspend any operation deemed unsafe or in violation of safety regulations.

The decontamination zones would act as control points for personnel entering and exiting a spill area to minimize the spread of contamination to clean areas. These zones would be set up near the waste staging areas. Decontamination areas would be lined with Visqueen and matting or materials that can be disposed of after the decontamination areas have been closed.

Personnel Decontamination

Contaminated personnel and personnel entering contaminated areas shall be decontaminated in accordance with the instructions of the Site Safety and Health Supervisor.

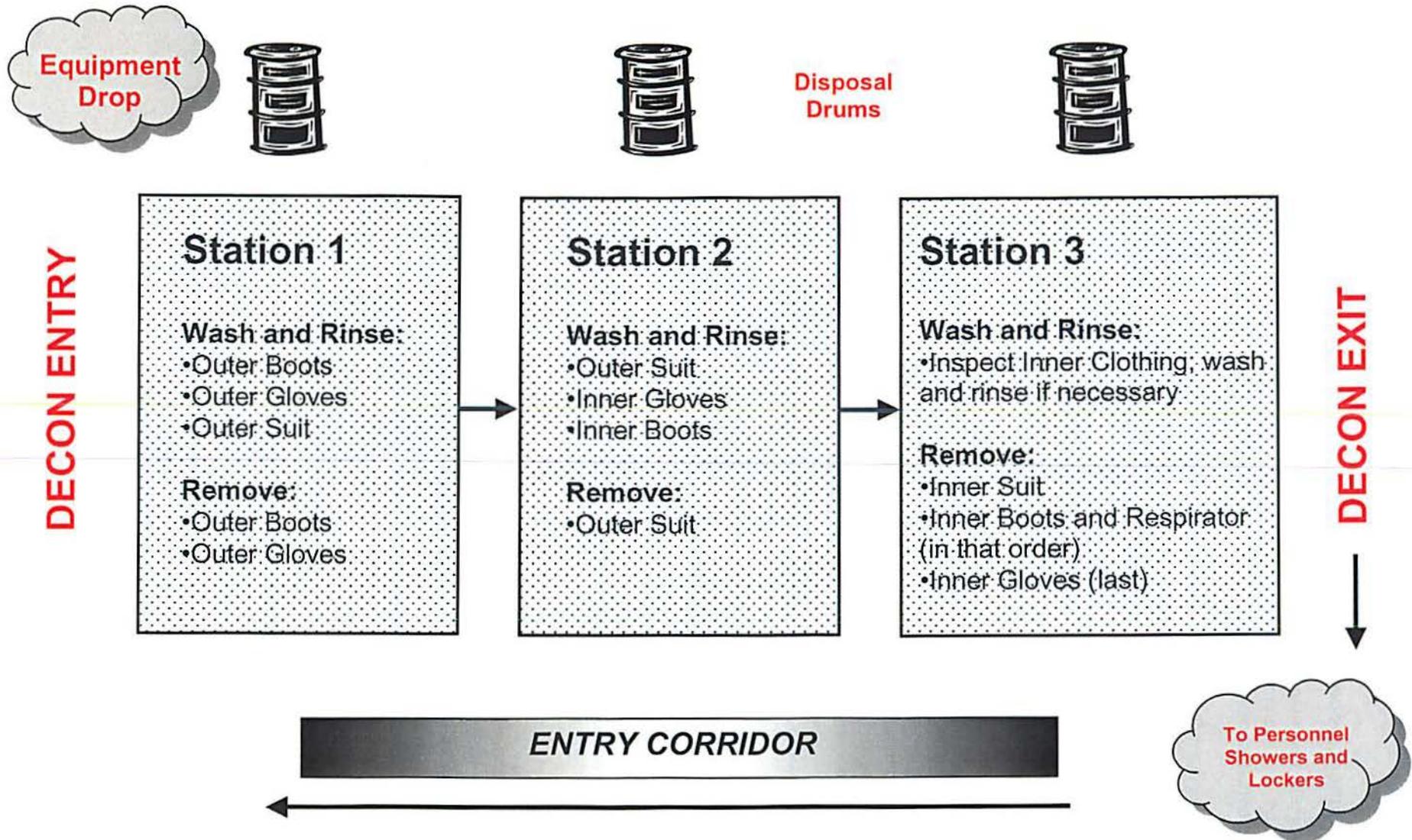
Small Fastanks or other vessels for cleaning personnel gear would be provided along with a temporary storage tank sufficient to hold liquids generated during the decontamination process. Cleaning tanks would have secondary containment to capture sloshed or spilled material. Transfer buckets would be used to transfer oily wash water to the temporary storage tank. Drums would be located near the wash areas to collect oiled PPE and gear, oiled debris, and non-oiled debris. See Figure K-2 for an example of a decontamination site layout; the decontamination station activities are provided below.

- Station 1 – Gross removal of contamination occurs at this stage (by scrubbing or wiping). Outer boots and gloves are removed.
- Station 2 – Outer clothing receives inspection. Decontamination workers assist in removing outer clothing. Respirator and inner clothing remain.
- Station 3 – Workers inspect inner clothing (this also assures the effectiveness of the outer clothing and other PPE). Respirator is removed before inner gloves to prevent any cross contamination. Inner gloves are the last item to be removed.

Decontamination of personnel involves the use of chemicals, pressure washing, and manual scrubbing to remove contaminants.

Emergency decontamination procedures would be developed by the Site Health, Safety, and Environment Supervisor in the event that personnel experience a medical emergency while still contaminated.

FIGURE K-2 EXAMPLE OF DECONTAMINATION SITE LAYOUT



Equipment Decontamination

Equipment decontamination areas would be established on site in areas accessible to spill response vehicles and equipment. After leaving the equipment decontamination area, workers involved in equipment decontamination would exit through a personnel decontamination area.

The Decontamination Unit would periodically clean equipment during onshore response operations. Cleaning systems for skimmers, hoses, hand tools, and heavy machinery would be established in the vicinity of the waste staging area. Techniques for cleaning equipment include steam cleaning with soap and water wash. Equipment would receive gross decontamination by wiping clean with sorbents before transportation to the decontamination area. The transporting vehicle also would be lined to minimize contamination. Equipment that cannot safely be moved to decontamination areas would be decontaminated on site using a soap and water rinse. These onsite areas would be bermed and lined to prevent further contamination.

As with the personnel decontamination area, the equipment decontamination area would have large pools or other diked impoundments and a temporary storage tank to store liquids.

Certain expendable equipment (e.g., brushes, tarps, rope mops, etc.) would not be decontaminated. These items would be drummed as waste. The Resource Unit Leader and Staging Area Manager inventory decontaminated equipment for final disposition.

Contaminated boom would be placed in lined storage areas after receiving gross decontamination to remove some of the oil before being transferred to a cleaning facility. Once cleaned, the boom would be inspected and/or repaired as necessary before returning to service or contingency. Unserviceable boom would be disposed of properly; this may involve cutting the boom into pieces and storing it in lined containers.

Vessel Decontamination

Vessels leaving contaminated work areas are decontaminated prior to entering clean areas. Vessels are required to check in with the decontamination crews once they are released from their working task forces.

Large vessel decontamination involves the use of a barge located near the active offshore plume cleanup site (Figure K-3). Two or three layers of deflection boom are used to create a containment area. The boom is opened at one end to allow a vessel to enter the containment. The decontamination crews would close the boom and secure the area before beginning a process of spray washing or wiping down the vessels to remove contamination.

Small vessel decontamination would take place in a similar manner, with two to three layers of deflection boom for containment, but would be located in a protected area of the beach in shallow water.

Vessels that are demobilized from the response or are moving to a different response area would receive a more thorough cleaning process than vessels that would return to response actions. The cleaning process for demobilized vessels begins with hand-wiping the oiled areas using sorbents and a pre-approved citrus-based cleaning agent, followed by a steam or hot-water rinse. This process is repeated as necessary until the hull and deck of the vessel is clean.

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Oil floating on the water inside the boomed area would be removed with a small skimmer system. If a sheen were observed, as the vessel leaves the decontamination area, a second decontamination process would be implemented. All sheen and/or product from vessel decontamination would be collected with sorbent pads or pumped into a temporary storage tank or barge.

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FIGURE K-3 VESSEL DECONTAMINATION



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H. Resources

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McCoy and Associates, Inc. (McCoy), 2009. *McCoy's RCRA Unraveled*, January.