

Mid-Missouri River Sub-Area Contingency Plan

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MID-MISSOURI RIVER SUB-AREA CONTINGENCY PLAN

1.0 INTRODUCTION

The three levels of contingency plans under the Federal National Response System are the National Contingency Plan (NCP), Regional Contingency Plan (RCP), and Area Contingency Plan (ACP). ACPs were most recently required by the Oil Pollution Act of 1990 (OPA 90). Following OPA, most EPA regions, including Region 8, added various ACP requirements into their Regional Plans, resulting in combined RCP/ACP plans. However, the area covered by the combined plans (RCP/ACP) was regional in scope and lacked localized geographic details necessary for oil spill response planning and coordination. Region 8 has combined the ACP into the RCP.

To conduct planning in localized areas, Region 8 designated 10 smaller sub-areas based on watershed boundaries for oil spill planning. The Sub-Area Contingency Plans (SACP) provide a greater level of tactical response planning to guide initial actions in response to major discharges of oil that threaten waters of the United States. These planning efforts focus on areas most vulnerable to oil spills. For additional detail on the area planning strategy, refer to the EPA Region 8 RCP, dated December 30, 2014. The area planning development strategy was approved by the Region 8 Regional Response Team (RRT) in August 2013. This SACP, in conjunction with the RCP, will constitute Region 8's ACP for the Mid-Missouri River Sub-Area. This SACP was developed via a collaborative effort of federal, tribal, state, and local agencies, as well as industry groups.

1.1 PURPOSE

OPA 90 defined the purpose of area planning as follows: *“The Area Contingency Plan shall, when implemented with the National Contingency Plan, be adequate to remove a worst-case discharge and to mitigate or prevent a substantial threat of such a discharge from a vessel, offshore facility or onshore facility operating in or near the area.”*

1.2 SCOPE

OPA 90 required that several elements be met in developing ACPs, which were later codified into the Clean Water Act (CWA) 311 (j)(4)(c) and subsequently into the NCP at 40 *Code of Federal Regulations* (CFR) Section 300.210 (c). The requirements of CWA Section 311 (j)(4)(C) are as follows:

- (i) *When implemented in conjunction with the National Contingency Plan, be adequate to remove a worst-case discharge[of oil] and to mitigate or prevent a substantial threat of such a discharge from a vessel, offshore facility, or onshore facility operation in or near the area;*
- (ii) *Describe the area covered by the plan, including the areas of special economic or environmental importance that might be damaged by a discharge;*
- (iii) *Describe in detail the responsibilities of an owner or operator and of federal, state, and local agencies in removing a discharge, and in mitigating or preventing a substantial threat of a discharge;*
- (iv) *List the equipment (including firefighting equipment), dispersants or other mitigating substances and devices, and personnel available to an owner or operator and federal, state and local agencies to ensure an effective and immediate removal of a discharge and to ensure mitigation or prevention of a substantial threat of a discharge;*
- (v) *Describe the procedures to be followed for obtaining an expedited decision regarding the use of dispersants;*
- (vi) *Describe in detail how the plan is integrated into other Area Contingency Plans and vessel, offshore facility, and onshore facility response plans approved under this subsection, and into operating procedures of the National Response Unit;*
- (vii) *Include any other information the President requires; and*
- (viii) *Be updated periodically by the Area Committee.*

Additionally, NCP Section 300.210(c)(4)(i) calls for Area Plans to incorporate a detailed annex containing a Fish and Wildlife and Sensitive Environments Plan that is consistent with Regional Plans. The EPA Region 8's Fish and Wildlife Sensitive Environments Plan is included as Annex III of the Region 8 RCP and provides information for Federal On-Scene Coordinator (OSC) and other responders for protection of threatened and endangered species and their habitats during a response.

Within a particular geographic watershed boundary, each SACP will assess threats from facilities that could cause substantial harm to the environment by discharging into or on the navigable waters and or adjoining shorelines. Section 300.211 of the NCP identifies those facilities that "could cause substantial harm to the environment" and that must submit a Facility Response Plan (FRP) for responding to a worst-case discharge and to a substantial threat of such a discharge. Requirements for FRPs for non-

transportation related onshore facilities are specified at 40 CFR Section 112.20, and pertain to those facilities with total storage capacity exceeding one million gallons and that meet certain criteria. These facilities are regulated by the EPA and are referred to as FRP facilities. Requirements for pipeline (transportation) FRPs are specified at 49 CFR Part 194 and are regulated by the Department of Transportation (DOT). While these higher threat facilities are the focus of this planning effort, spills from smaller and more prevalent sources and facilities, such as railroads, production facilities, trucking operations, etc., could also be addressed by response strategies developed as part of this SACP. Discharges from these other potential sources may constitute a “Major Discharge” as defined in the NCP for inland waters. The SACP response strategies are expected to assist in responding to such discharges that may be more prevalent.

Although this SACP focuses on oil spill response, the successful development of this plan (and the web-based response tool discussed in this document), along with planned updates to the RCP will prepare and enhance the Region’s ability to respond to both oil discharges and hazardous substance releases. This SACP and associated response strategies do not relieve operators of requirements for FRPs or other applicable regulatory compliance.

1.3 STATUTORY AUTHORITY

This SACP was prepared under the NCP, 40 CFR Part 300 and Section 311(j) of the CWA, as amended by OPA 90, 33 *United States Code* (U.S.C.) 1251 et seq.

2.0 DESCRIPTION OF SUB-AREA

This section describes the sub-area, its sensitive environments and critical infrastructure (sensitive resources), and the planning approach developed for protection of these.

2.1 WATERSHED AND CLIMATE

Using a watershed-based approach for defining sub-area boundaries, the Mid-Missouri River is composed of the Missouri-Little Missouri and the Missouri Oahe watersheds (referred to as sub-regions). These watersheds are classified as Hydrologic Unit Code 4. The sub-area includes parts of 44 counties within North Dakota, South Dakota, Montana, and Wyoming. The Missouri River is the principal drainage system within the sub-area.

The Missouri-Little Missouri watershed encompasses western North Dakota and portions of eastern Montana and northeastern Wyoming. The watershed covers an area of 17,234 square miles and includes

six counties. The Missouri-Little Missouri watershed drains into Lake Sakakawea in North Dakota—the third largest reservoir in the United States, 178 miles long and including 1,340 miles of shoreline.

The Missouri Oahe watershed encompasses central North Dakota (below Garrison Dam on Lake Sakakawea) to Lake Oahe in South Dakota. The watershed covers an area of 37,085 square miles. The Missouri Oahe watershed drains into Lake Oahe—the fourth largest reservoir in the United States, 231 miles long and including 2,250 miles of shoreline.

The Mid-Missouri River Sub-Area is within the Great Plains Physiographic Province. The topography varies from flat, gently rolling hills in the glaciated regions to steep and dissected rolling plains to the west. Climate of the sub-area is characterized by large seasonal fluctuations in temperature, long winters, warm summers with moderate to high relative humidity, and frequent high winds. Average annual precipitation varies across the sub-area from 13 inches in the northwest portion to 20 inches in the southern portion.

Three distinct seasons of water flow occur within the sub-area: (1) winter, (2),spring runoff or peak/high flow, and (3) base flow. The winter season is primarily from November through late April when the rivers and reservoirs of the sub-area are covered by ice. Spring runoff, or peak/high flow, generally starts late April to early May and continues through late May to June. The period of peak flows varies year to year; however, May is the primary month of peak flow. Following the spring runoff, base flow occurs. These seasonal variations are likely to impact response strategies devised by the Sub-Area Committee, and adjustments in the field may be necessary.

2.2 SENSITIVE AREAS

As part of the development of this SACP, the planning process focused on identifying areas where sensitive environmental areas could be impacted by a worst-case discharge of oil. The river system and reservoirs described in Section 2.1 are considered sensitive and/or critical for multiple reasons that include, but are not limited to, provision of drinking water, irrigation/industrial water, critical wildlife habitat, and recreational opportunities. Planning initially focused on the areas along the Missouri River and Lakes Sakakawea and Oahe where higher density of oil operations and transportation are located. However, other sensitive environments/areas were accounted for during the planning process. Those included smaller streams, rivers, and water bodies throughout the sub-area. The majority of the planning focus was in the Williston Basin area of North Dakota. Currently, within South Dakota, response planning is limited to the North and South Forks of the Grand River, as well Bowman-Haley Lake, all of which could be potentially impacted by oil field production activities. There are not currently any major

oil transmission lines or railroad corridors in this area. In the future, additional planning may be appropriate. Water intakes are located in rivers and reservoirs within the sub-area and are used for various purposes (drinking water, irrigation, etc.). Water intake information is included as a data layer on the web-based response tool (under the "Water" layer) discussed further in this document. That data is primarily associated with drinking water intakes; therefore, not all water intakes within the sub-area are identified. The specific location and potential threat to an intake should be addressed on an incident-specific basis by responding personnel.

A general approach to protection of the sub-area was devised via close coordination among members of the Sub-Area Committee that included representatives from the North Dakota Department of Health, North Dakota Department of Emergency Services, South Dakota Department of Environment & Natural Resources, United States Fish and Wildlife Service (USFWS), North Dakota Game and Fish Department, Mandan, Hidatsa & Arikara (MHA) Nation (also known as the Three Affiliated Tribes), Bureau of Indian Affairs, federal land management agencies including the United States Army Corps of Engineers (USACE), and several county emergency management offices. Within the Mid-Missouri River Sub-Area, the Missouri River and associated shoreline are designated critical habitat for threatened and endangered species. As such, resource trustees and managers preferred a general protection approach rather than the development of habitat and/or location-specific strategies. The general approach is to control the source of the spill as quickly as possible and then focus actions on limiting impacts downstream. For example, if an oil spill would threaten Lake Sakakawea, the initial goal would be to contain the oil within the first impacted waterway or bay. This would limit impact on the main body of the lake. Conversely, if a spill would occur on the main body of the lake, the initial goal would be to contain the oil within the main body and thus protect the shoreline and lake bays to the extent possible.

Threatened and endangered federal and state species that may be present in riparian corridors within the SACP area are provided in Appendix C (to be provided). This list was prepared by US Fish and Wildlife and is a subset of the complete listing of federal and state threatened and endangered species in Annex III to the RCP.

Although sensitive environments that include threatened or endangered species and critical habitat are present across the sub-area, the committee agreed that this general protection approach is most applicable within the first 24 to 72 hours of a response. Importantly, this approach does not replace the requirement for coordination and consultation with the trustees as required under the NCP during an incident. In fact, protection of trustee-managed resources, including wildlife and habitat, must be factored into oil spill response operations. The Federal On-scene Coordinator (OSC) shall ensure that natural resource trustees

and natural/historic resource managers are promptly notified of a discharge or release. If threatened or endangered species or their habitat may be affected, the Federal OSC must initiate consultation with the USFWS in accordance with the Fish and Wildlife and Sensitive Environments Plan (refer to Annex III of the Region 8 RCP) and the Endangered Species Act Memorandum of Understanding (refer to Annex IV of the Region 8 RCP).

If cultural, historic, or archaeological sites could be affected by response operations, the Federal OSC must consult the State Historic Preservation Officer (SHPO) and other appropriate entities as specified in the *Programmatic Agreement on Protection of Historic Properties During Emergency Response Under the NCP* (refer to Annex V of the Region 8 RCP). Additionally, response actions on tribal property should factor in the potential impacts on cultural resources. Identification of culturally, historically, or archaeologically sensitive sites in the vicinity of a spill can be accomplished by contacting the appropriate SHPO or land managing agency cultural resource specialist or other appropriate contact. This individual is generally associated with the State Historical Preservation Office or Society. Contacts for states associated with the sub-area are as follows:

- North Dakota State Historic Preservation Officer (North Dakota Historical Society) – (701) 328-2666 or <http://www.history.nd.gov/hp/>
- South Dakota State Historic Preservation Officer (South Dakota Historical Society) – (605) 773-3458 or <http://history.sd.gov/preservation/>
- Montana State Historic Preservation Officer (Montana Historical Society) – (406) 444-7715 or <http://mhs.mt.gov/shpo/>
- Wyoming State Historic Preservation officer (Wyoming Historical Society) – (307) 777-6421 or <http://wyoshpo.state.wy.us/>

Note: The *Programmatic Agreement on Protection of Historic Properties During Emergency Response Under the NCP* applies to oil response actions pursuant to the CWA/OPA and to hazardous substance response actions pursuant to CERCLA. In accordance with the Programmatic Agreement, in 2014 Region 8 provided a public comment period for the Regional Contingency Plan. The State Historic Preservation Offices for each state as well the federal trustees were notified of this comment period and the regional approach for addressing cultural resources in the RCP and SACPs.

Advanced clearance at identified historic sites is not anticipated. However, if a land management agency, SHPO, tribal or other entity with knowledge of historic sites identifies cultural resources in the vicinity of a pre-established oil spill control point, evaluation of impacts to the cultural resource will be coordinated through the appropriate parties. Proper consultation with these and other appropriate entities should occur

to ensure protection of all culturally sensitive resources. Otherwise, it is anticipated agencies with cultural resource responsibilities will be relied upon to identify and coordinate cultural resources during a response action with the lead response agency.

Additionally, EPA Region 8 has developed an interactive web-based tool (see Section 4.5 of this SACP for details concerning The Emergency Response Application [TERA]) that will identify some sensitive and/or critical features within the sub-area. The information may include, but is not limited to, critical habitat, threatened and endangered species, public use areas, cultural and historic areas, managed and protected areas, resources extraction areas, and water supplies.

3.0 OIL THREATS

This section discusses oil-related sources that pose a spill threat within the sub-area. Those threats include: (1) EPA-regulated storage facilities (those exceeding one million gallons in storage capacity) and DOT-regulated transport pipelines (six inches in diameter or greater), (2) other facilities including oil production wells and associated tank batteries, and (3) truck and rail transport activities. Regarding oil production wells, it should be noted that oil well technology advancements employing horizontal drilling and hydraulic fracturing have resulted in basins with significant well production rates, such as in the Bakken Formation. An uncontrolled discharge from a production site could pose a significant threat if occurring near water, but as previously discussed, the planning process for the SACPs places specific emphasis on large-scale discharges. The results of this planning process will also enhance capability to respond to smaller incidents.

3.1 EPA-REGULATED FRP (FIXED) FACILITY HAZARDS

EPA-regulated FRP facilities could cause substantial harm to the environment. These facilities within the sub-area have oil storage capacities exceeding 1,000,000 gallons. Each of these facilities is required to develop an approved FRP that documents, by contracts or other approved means, the resources capable of addressing a worst-case discharge at that facility. EPA regulated FRP facilities have been determined to pose such a risk, most of which are within the northwest portion of the sub-area. EPA Region 8 maintains current copies of all FRPs. FRP facilities within Region 8 are identified on the TERA Viewer under the “Facilities” layer.

3.2 TRANSPORTATION HAZARDS

Transportation threats include potential discharges from pipelines and along truck and rail transportation routes. Currently, the sub-area includes more than 3,000 miles of DOT-regulated pipelines. Additionally,

thousands of miles of smaller diameter, non-regulated pipelines and oil field gathering lines are present within the sub-area. Small-diameter pipelines are not evaluated as worst-case threats. DOT-regulated pipelines within Region 8 are identified on the TERA Viewer under the “Energy” layer.

Truck and rail transportation of oil is another threat. Truck transport of oil is of concern because so much of this occurs within the sub-area, particularly within the Bakken region. Rail transport continues to be a primary means of moving oil. Currently, approximately 2,000 miles of rail lines are present within the sub-area. In particular, the Bakken Oil Express (BOE) is a unit train facility west of Dickinson, North Dakota, with a loading capacity up to 1,000,000 barrels of oil per day. Railroads within Region 8 are identified on the TERA Viewer under the “Infrastructure” layer.

3.3 OIL PRODUCTION FACILITIES

Oil and gas production wells throughout the sub-area pose a threat of release, although such facilities were not evaluated as worst-case threats based on their limited storage capacities. According to the February 2014 North Dakota Industrial Commission Oil and Gas Production Report, approximately 10,000 active oil wells exist within the state, most in the Bakken Formation. Active energy wells (including oil wells) within Region 8 are identified on the TERA Viewer under the "Energy" layer.

3.4 WORST-CASE DISCHARGES AND PROJECTIONS

As part of the planning process, worst-case discharge threats were identified from facilities that could cause substantial harm to the environment by discharging oil into or on the navigable waters and adjoining shorelines. To illustrate downstream extents of spills within the sub-area, oil spill projections were developed for 11 FRP facilities and 13 pipeline crossings over water bodies. Spill response planning was conducted for these worst-case discharge threats. The planning process completed in preparation for a worst-case discharge from these facilities included, but was not limited to, identification/prioritization of key sensitive areas, identification of response equipment, and development of pre-planned response strategies.

3.4.1 FRP Spill Projections

EPA-regulated FRPs are required to calculate planning distances (spill projections) per regulation 40 CFR Part 112 Appendix C. The planning distance represents the estimated distance a discharged material would travel within the first 27 hours following a discharge. Planning distance calculations are required to account for adverse weather conditions.

Development of spill planning distances is not required for DOT-regulated pipelines per 40 CFR Part 194. Pipeline spill projections for this plan were developed by first identifying priority locations where pipeline spills could impact significant water bodies. These locations were primarily pipeline crossings over major rivers and primary tributaries. Within the sub-area, projections were created for pipeline crossings over water bodies considered stream order six or larger, as classified by the United States Geological Survey (USGS).

By use of the USGS National Hydrography Dataset (NHD) and the NHDPlus dataset, flow direction was determined within a watershed from a potential spill point. The NHDPlus dataset was utilized to provide mean velocity data for water bodies throughout the sub-area., and oil spill projections were developed following a stream channel segment-by-segment approach. Stream segments have been established by USGS. Velocity data for each segment were used to plot the 27-hour projection. The velocity data are based on annual mean values that have been compiled over an approximate 30 year period; therefore, the projections are for average velocity conditions but do account for variable conditions, including periods of flooding and droughts.

3.4.2 FRP Worst-Case Discharges

Storage Facilities

For single-tank facilities, the worst-case discharge planning volume equals the capacity of the oil storage tank. For multiple-tank facilities, the worst-case discharge is based on the capacity of the largest oil storage tank within a common secondary containment area or the largest single oil storage tank within a secondary containment area, whichever is greater. For tanks with common piping operated as one unit, the worst-case discharge is based on the combined volume of all the tanks manifolded together.

Pipelines

DOT-regulated pipelines are required to determine the worst-case discharge for each of their response zones per 40 CFR Section 194.105. The worst-case discharge is calculated as the largest volume of one of the following:

- The pipeline's maximum release time in hours, plus the maximum shutdown response time in hours (based on historical data or operator's best estimate) multiplied by maximum flow rate, plus the largest line drainage volume after shutdown of the line section(s) in the response zone;

Or

- The largest foreseeable discharge for the line section based on the maximum historical discharge, if one exists, adjusted for any subsequent corrective or preventive action taken;

Or

- If the response zone contains one or more breakout tanks, the capacity of the single largest tank or battery of tanks within a single secondary containment system, adjusted for the capacity or size of the secondary containment system.

The maximum flow rate in a pipeline is based on the specific oil density and pipeline operating pressures. The operating range of pipeline velocities varies from three to 15 feet per second, with most operators likely running between six and 12 feet per second. The range of worst-case discharges using the calculation procedure listed above can vary significantly, depending on the operating velocities, assumptions of release time, maximum shutdown time, and length of largest line. For a conservative estimate, the following worst-case discharges listed in the table below assume a release time of 0 minutes, a maximum shutdown time of 15 minutes, a lower end velocity of six feet per second, and a line section of 10 miles:

Pipe Size (inches)	6	8	10	12	16	30	36
Worst-Case Discharge (barrels [bbl])	2,000	3,600	5,600	8,100	14,400	50,800	73,000

4.0 RESPONSE OPERATIONS AND ROLES

This section describes response roles, notification procedures, control point and response strategies, equipment and resources, and the EPA-managed web-based tool TERA.

4.1 GENERAL PATTERN OF RESPONSE (OPERATIONS)

Subpart D of the NCP outlines the general pattern of response and expected response operations. This is defined in detail at 40 CFR Sections 300.300 through 300.315, and generally includes the following:

Phase I—Discovery or Notification

A discovery and reporting of a spill or discharge of oil may be communicated to the appropriate agencies through various sources including members of the public, governmental agencies, private companies, etc. Reporting requirements differ among counties and states. Critical aspects of reporting are timeliness and accuracy of information provided. Specific federal reporting requirements apply to the facilities from

which a discharge of oil threatens waters, and the federal reporting requirements are not met by reporting to the State or local agencies. Federal reporting requirements are specified below:

*“Any person in charge of a vessel or a facility shall, as soon as he or she has knowledge of any discharge from such vessel or facility in violation of Section 311(b)(3) of the CWA, immediately notify the NRC [National Response Center]. If direct reporting to the NRC is not practicable, reports may be made to the USCG [US Coast Guard] or EPA predesignated OSC [On-Scene Coordinator] for the geographic area where the discharge occurs. **The EPA predesignated OSC may also be contacted through the Regional 24-hour emergency response telephone number.** All such reports shall be promptly relayed to the NRC. In any event such person in charge of the vessel or facility shall notify the NRC as soon as possible.”* (40 CFR Section 300-300(b)).

The NRC is the national communications center for oil and hazardous substance spill reporting. The NRC acts as the single point of contact, at the federal level, for all incident reporting. Notice of an oil discharge or release of a hazardous substance in an amount equal to or greater than the reportable quantity must occur immediately in accordance with the CWA and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) under 33 CFR Part 153, Subpart B, and 40 CFR Part 302, respectively. All notices of discharges or releases received at the NRC are relayed by telephone to the Region 8 Regional Response Center. The OSC receiving these notifications will ensure notification to the appropriate federal, state, or tribal agency affected by or reasonably expected to be affected by the discharge or release. The NRC spill reports are also sent directly to the RRT agencies, including the states, and certain other agencies.

To notify the NRC Duty Officer, call (800) 424-8802.

To notify the Region 8 Regional Response Center, call (303) 293-1788.

The Department of Interior (DOI) Regional Environmental Officer, Office of Environmental Policy and Compliance (303-445-2500), should be notified and kept advised of any spills or releases on or potentially affecting DOI-administered lands or resources. The United States Department of Agriculture (USDA) should be kept advised of any spills or releases on USDA-administered lands. Additional notification protocols are further defined in the Region 8 RCP.

Appendix A of this SACP includes a list of Sub-Area Committee members, sub-area stakeholders, and industry contacts. The sub-area contact list is also available on TERA (discussed further in Section 4.5 of

this SACP), on the Tool Bar in the "Documents" folder. The contact list available on TERA will be revised periodically as contact information changes. TERA Viewer is available at the following website: https://r8.ercloud.org/TERA_External/.

Phase II—Preliminary Assessment and Initiation of Action

Following a report to the NRC and/or the EPA that an oil discharge has occurred which threatens surface water, a Federal OSC will initiate efforts to determine potential impacts from the oil and whether response actions are under way. The purpose of the assessment is to determine the magnitude and potential threats to the public using available information such as existing mapping tools, contacting the reporting party, contacting state and/or local officials on scene, and possibly deploying EPA personnel and contractors to directly assess conditions.

If a response action is under way or deemed necessary, the Federal OSC will assess whether to rely on personnel on scene or if a response by the EPA is necessary. Generally, any major discharge of oil that threatens waters (10,000 gallons or more to inland zone waters) will result in deployment of a Federal OSC from the Regional office to ensure implementation of an adequate response action. The standard incident management approach during a significant incident includes a Unified Command organization with appropriate agency and industry representatives. The following section from the NCP describes generally the protocol for evaluating a response and determining the level of federal involvement:

“Except in a case when the OSC is required to direct the response to a discharge that may pose a substantial threat to the public health or welfare of the United States (including but not limited to fish, shellfish, wildlife, other natural resources, and the public and private beaches and shorelines of the United States), the OSC may allow the responsible party to voluntarily and promptly perform removal actions, provided the OSC determines such actions will ensure an effective and immediate removal of the discharge or mitigation or prevention of a substantial threat of a discharge. If the responsible party does conduct the removal, the OSC shall ensure adequate surveillance over whatever actions are initiated. If effective actions are not being taken to eliminate the threat, or if removal is not being properly done, the OSC should, to the extent practicable under the circumstances, so advise the responsible party. If the responsible party does not respond properly the OSC shall take appropriate response actions and should notify the responsible party of the potential liability for federal response costs incurred by the OSC pursuant to the OPA and CWA. Where practicable, continuing efforts should be made to encourage response by responsible parties.” (40 CFR Section 300.305(d))

In addition, the Federal OSC shall ensure that the natural resource trustees are promptly notified. The Federal OSC will coordinate with affected trustees regarding assessment, evaluations, investigations, and planning of appropriate removal actions as per 40 CFR Section 300.305(e).

Phase III—Containment, Countermeasures, Cleanup, and Disposal

The appropriate actions to implement to reduce impacts of an oil spill will vary significantly, depending on the physical environment, water flow conditions, access to the area, and potential threats to public safety and the environment. The NCP outlines basic guidelines for responding that include:

“(a) Defensive actions shall begin as soon as possible to prevent, minimize, or mitigate threat(s) to the public health or welfare of the United States or the environment. Actions may include but are not limited to: analyzing water samples to determine the source and spread of the oil; controlling the source of discharge; measuring and sampling; source and spread control or salvage operations; placement of physical barriers to deter the spread of the oil and to protect natural resources and sensitive ecosystems; control of the water discharged from upstream impoundment;.....” (40 CFR Section 300.310(a))

“(b) As appropriate, actions shall be taken to recover the oil or mitigate its effects. Of the numerous chemical or physical methods that may be used, the chosen methods shall be the most consistent with protecting public health and welfare and the environment. Sinking agents shall not be used.” (40 CFR Section 300.310 (b)).

Additional standards apply to use of chemical countermeasures such as dispersants, and these are addressed in the NCP and the RCP, and as discussed below in Section 5. In short, chemical agents may be used only if approved by the Federal OSC after consultation with and approval by the RRT.

Oil and contaminated materials recovered in cleanup operations shall be disposed of in accordance with applicable laws, regulations, or requirements. Any localized disposal requirements identified by Sub-Area Committees will be described in those SACPs. Disposal assistance may be obtained through the EPA RCRA National Hotline at 1-800-424-9346, the EPA Region 8 Hotline at 1-800-227-8917, or <http://www2.epa.gov/region8/contact-region-8>.

Additional authorities are available to the Federal OSC during response actions conducted under the NCP that address CWA regulations. For example, the Federal OSC has the authority to direct a discharge to water without a permit as specified in 40 CFR Section 122.3(d), and actions subject to CWA 404 permit requirements are authorized under Nationwide Permit 20.

Phase IV—Documentation and cost recovery

Agencies undertaking response actions funded by the Oil Spill Liability Trust Fund (OSLTF) must comply with reporting and documentation requirements to receive reimbursement and to allow for cost recovery from responsible parties. In addition, the information must be obtained during a response to an oil spill to accurately record the impacts, and that information must be available to trustees to assist in evaluating potential injuries to natural resources. For more information regarding the OSTLF, please refer to Sections 300.315 and 300.335 of the NCP.

4.2 RESPONSE ROLES

The NCP and the National Response System it created address response roles of many federal, state, local, and tribal organizations. More information about the National Response System is in Sections 300.100 through 300.185 of the NCP. The general assumption is that local and state authorities will be the first responders at the scene of an oil discharge, with federal resources to follow as needed. Some incidents may impact multiple jurisdictions. The NCP relays the expectation that responding entities will coordinate their efforts and, to the extent practicable, respond in a manner that considers each jurisdiction's priorities and concerns. This should be accomplished through a National Incident Management System Unified Command structure or some other appropriate means.

If an oil spill poses a threat to the public, the NCP describes in significant detail the role of lead agencies and other federal agencies during both planning activities and response actions. As a matter of general practice and as conceived in the NCP, the intent is for the Responsible Party (RP) to conduct response actions. Also, the state and local agencies with such authority are part of the National Response System and will likely oversee most response actions. The federal government may respond to an incident in various ways depending on the nature and magnitude of the incident. Many oil spills are handled completely at the local and/or state level. During such incidents, the Federal OSC must assess the situation in coordination with the appropriate state and local officials.

In addition to the elements described in Section 4.1 above, Section 300.317 of the NCP identifies the response priorities to a discharge of oil regardless of who conducts the response action. The National Response Priorities are listed below.

- (a) Safety of human life must be given top priority during every response action.
- (b) Stabilizing the situation to preclude the event from worsening is the next priority. All efforts must be focused on measures to stabilize a situation involving a facility, pipeline, or other source of pollution. Stabilizing the situation includes securing the source of this

spill and/or removing the remaining oil from the container (vessel, tank, or pipeline) to prevent additional oil spillage, to reduce the need for follow-up response actions, and to minimize adverse impact to the environment.

- (c) The response must use all necessary containment and removal tactics in a coordinated manner to ensure a timely, effective response that minimizes adverse impact to the environment.
- (d) All parts of this national response strategy should be addressed concurrently, but safety and stabilization are the highest priorities. The OSC should not delay containment and removal decisions unnecessarily and should take actions to minimize adverse impact to the environment that begins as soon as a discharge occurs, as well as actions to minimize further adverse environmental impact from additional discharges.
- (e) The priorities set forth in this section are broad in nature, and should not be interpreted to preclude the consideration of other priorities that may arise on a site-specific basis.

The sections that follow highlight some of the major entities involved with a typical oil spill incident and their roles/responsibilities. This is not intended to be all inclusive. An agency's or jurisdiction's involvement may vary based on site-specific conditions and concerns.

4.2.1 Responsible Party Roles/Responsibilities

The Responsible Party (RP) is the individual, agency, or company owning or operating the vessel or facility that becomes the source of a discharge of oil into navigable waters or threatens to discharge thereto. As defined in OPA, each party responsible for oil discharged, or if there is substantial threat of a discharge, into or upon the navigable waters or adjoining shorelines, is liable for the removal costs and damages specified in Section 311(f) of CWA. Section 311(c)(3)(b) of CWA requires a facility owner or operator participating in removal efforts to act in accordance with the NCP and the applicable response plan required under Section 311(j).

Any person in charge of a vessel or facility (as defined in Section 300.5 of the NCP) shall, as soon as he or she has knowledge of any discharge from such vessel or facility in violation of Section 311(b)(3) of the CWA, immediately notify the NRC, as described in the Emergency Notifications section above.

The RP shall immediately provide the Federal OSC and relevant authorities with information about the discharge and assist the Federal OSC with the preliminary assessment, including determining the magnitude and severity of the discharge and the threat to public health or welfare of the United States or the environment. As soon as practicable, the RP should assess the feasibility of removal and initiate response actions. Once established, the RP is expected to operate within a Unified Command with federal, state, and local authorities to achieve an effective and efficient response.

Permission to access private property to conduct the response action must be obtained from the property owner. The RP is expected to secure such access before or during response actions. Furthermore, restoration of private property damaged during the response is considered appropriate as part of the removal action.

If the RP is unknown, fails to respond, or responds in a manner considered inadequate, the local, state, or federal agency having jurisdiction must exercise its authority to assume control of the response effort. The RP shall provide all reasonable cooperation and assistance requested by the Federal OSC, consistent with the CWA (CWA Section 311(c)(3)(B)). Following termination of the emergency response, the RP is required by law to take steps to prevent recurrence of spills or releases. Corrective actions may include improved planning, increased inspections, or implementation of physical preventive measures.

4.2.2 Federal OSC Roles/Responsibilities

The CWA and OPA 90 direct the President to respond to, oversee, and ensure adequate removal of discharges of oil to waters of the United States. This authority and responsibility has been delegated to the Federal OSC. The primary duties of the OSC have been described in the above sections of this document. In summary, the Federal OSC, once notified of a discharge of oil that has entered or that threatens waters of the United States, must perform a preliminary assessment of the spill and ensure notification to the natural resource trustees. If a response is required to mitigate the threat from the oil, the Federal OSC must evaluate adequacy of the response by private, state, or local authorities. Not all spills warrant that a Federal OSC perform on site oversight, and in many cases, the state and local agencies will assume that responsibility to monitor RP cleanup activities.

However, if the Federal OSC determines that EPA involvement is required, based on information available from the scene, the Federal OSC will request funding as needed from the National Pollution Fund Center to conduct a response. The Federal OSC will encourage and may allow the RP to voluntarily and promptly perform removal actions, provided the Federal OSC determines such actions will ensure an effective and immediate removal of the discharge or mitigation or prevention of a substantial threat of a discharge. When the RP does conduct the removal, the Federal OSC shall ensure adequate surveillance over whatever actions are initiated. If effective actions are not being taken to eliminate the threat, or if removal activity is not adequate, the Federal OSC should, to the extent practicable under the circumstances, so advise the RP. (40 CFR Section 300.305(d)).

If the RP does not respond adequately, the Federal OSC shall take appropriate response actions and should notify the RP of the potential liability for federal response costs incurred by the Federal OSC

pursuant to the OPA and CWA. The Federal OSC has the responsibility and authority to respond and commit federal resources to implement the actions necessary to respond to a discharge of oil. Because no coastal zones are present within Region 8, EPA is the agency that will provide the Federal OSC for oil discharges in accordance with the CWA and OPA 90.

In carrying out a response under this section, the Federal OSC may:

- Remove or arrange for removal of a discharge, and mitigate or prevent a substantial threat of a discharge, at any time;
- Direct or monitor all federal, state, and private actions to remove a discharge; and
- Remove and, if necessary, destroy a vessel discharging, or threatening to discharge, by whatever means are available. (40 CFR Section 300.305 (d)(1)).

If the oil discharge results in a substantial threat to the public health or welfare of the United States (including, but not limited to fish, shellfish, wildlife, other natural resources, and the public and private beaches and shorelines of the United States), the Federal OSC must direct all response efforts, as provided in Section 300.322(b) of the NCP. The Federal OSC should declare as expeditiously as practicable to spill response participants that the federal government will direct the response. The Federal OSC may act without regard to any other provision of the law governing contracting procedures or employment of personnel by the federal government in removing or arranging for removal of such a discharge (refer to Subpart D of the NCP).

The Federal OSC shall ensure that the natural resource trustees are promptly notified, to the maximum extent practicable as provided in the Fish and Wildlife and Sensitive Environments Plan Annex to the RCP for the area in which the discharge occurs. The Federal OSC and the trustees shall coordinate assessments, evaluations, investigations, and planning with respect to appropriate removal actions. The Federal OSC shall consult with the affected trustees and natural and cultural resource managers on the appropriate removal action to be taken. This is required by Section 6 of the National Historic Preservation Act and Section 7 of the Endangered Species Act. National memoranda of understanding were developed to define how these consultations shall be performed during oil and hazardous substance emergencies. These memoranda are included as annexes to the RCP.

Natural resource damage assessment activities by the trustee agencies are separate from removal activities but should be coordinated to ensure greatest efficiency and protection. When circumstances permit, the Federal OSC shall share use of non-monetary response resources (i.e., personnel and equipment) with the trustees, provided trustee activities do not interfere with response actions. The lead administrative trustee

facilitates effective and efficient communication between the Federal OSC and the other trustees during response operations and is responsible for applying to the Federal OSC for non-monetary federal response resources on behalf of all trustees. The lead administrative trustee is also responsible for applying to the National Pollution Funds Center to initiate funding for damage assessment pertaining to injuries to natural resources.

4.2.3 Federal Agency Roles/Responsibilities

The federal government may respond to an oil discharge in various ways depending on the nature and magnitude of the incident. Federal agencies have defined roles established in the NCP, and those agencies have responsibilities under delegated authorities. They may also have resources needed to assist during a response. If assistance is required, it will be coordinated through an incident-specific RRT (refer to Section 300.115 of the Region 8 RCP for further details concerning Incident-Specific RRTs). Federal agencies are expected to make facilities and resources available to the Federal OSC consistent with agency capabilities and authorities, as called for in the NCP (NCP Sections 300.170 and 175).

In any case, where a natural resource is injured or threatened, the natural resource trustees and natural and cultural resource managers (both federal and state) will provide additional assistance and provide advice regarding response priorities. These entities will provide timely advice concerning recommended actions regarding natural and cultural resources potentially affected. The natural resource trustees also will assure that the Federal OSC is informed of their activities in natural resource damage assessment that may affect response operations. The trustees shall assure, through the lead administrative trustee, that all data from the natural resource damage assessment activities which may support more effective operational decisions are provided in a timely manner to the Federal OSC.

In the event of a worst-case discharge of oil, as described herein, the Federal OSC will respond and coordinate the response activities with local and state responders and the RP within a Unified Command system.

Generally, many federal agencies may have significant roles to fulfill during a response action. Departments and agencies having land management, cultural resource, and wildlife management duties may have resource concerns that must be factored into the response operations. It is the responsibility of the Federal OSC to coordinate with the appropriate trustees in the event a discharge of oil or hazardous substance release that impacts those resources.

Other federal agencies involved with the National Response System, such as the Department of Health and Human Services, Department of Energy, and the Federal Emergency Management Agency (FEMA), may be called upon to assist in accordance with their usual statutory roles.

4.2.4 State Government Roles/Responsibilities

The roles of the respective state agencies during an oil discharge are generally well established, and coordination with the EPA through the RRT occurs on regular basis. Each state is encouraged to actively participate in National Response System activities, and each Governor has designated lead state agencies for certain activities. These designations can be found in the RCP. These designees and other state entities are critical to oil spill response because of their authorities governing water quality, management of state lands, and other items.

The state RRT representative is responsible for ensuring the following actions are completed, as appropriate: notify downstream water users (municipal, industrial, and agricultural) of all discharges and releases that may pose a threat to the water supply; notify and coordinate with other state and local agencies, including other state natural resource trustees, as appropriate; take responsibility, in conjunction with the Federal OSC, for selection of disposal sites, arrangements for use of disposal sites, and selection of transportation routes to disposal sites; make arrangements with the State Emergency Response Commission to provide security for all on-scene forces and equipment; assist the EPA with the determination of the degree of hazard of the discharge; and operate a site, if necessary and when no RP or principal RP has been identified.

For incidents not subject to the National Response System organization (i.e., because these are not regulated by CERCLA or CWA), states are encouraged to undertake response actions themselves or to use their authorities to compel potential RP(s) to undertake response actions.

State Emergency Management Agencies

State Emergency Management Agencies are often heavily involved in maintaining situational awareness of local incidents occurring within each state. They are also responsible for coordinating with, resourcing, and mobilizing elements and agencies in the rest of state government for incident response and local support, as needed. Spill notifications and distribution of this information to other federal, state, and local agencies is critical to initiating response actions under this SACP.

State Environmental Regulatory Agencies

State environmental regulatory agencies typically have a role in overseeing response to oil and hazardous materials incidents, and often provide a representative to the Region 8 RRT. Generally, states have primary authority for enforcing standards related to water quality and permitting. In these capacities, the states play a key role in notification, monitoring, and approval of certain actions during an oil removal action. For example, if an in-situ burn is determined appropriate, a state emergency air permit may be required prior to commencing that burn. Also, if drinking water supplies are impacted, the state has a role in evaluating those impacted facilities and water supplies, if necessary.

State Resource Trustee Agencies

State resource trustees are typically technical resources for the Unified Command. State wildlife management agencies often serve as subject matter experts on local river access, wildlife habitat and behavior, and sensitive ecological resources. State land management agencies may be able to provide technical support and resources, including personnel and equipment to assist where appropriate. Consultation with state resource trustees is necessary to ensure proper measures are implemented to limit the effects of the response actions on natural resources and recreation facilities. For example, proper decontamination is necessary to prevent spread of aquatic invasive species into a state or their migration to multiple areas within a state. Support from the appropriate state agency to inspect response contractor equipment may be necessary during a large incident.

4.2.5 Tribal Government Roles/Responsibilities

The NCP also defines roles and responsibilities of tribal governments. Tribes act as trustees for the natural resources, including their supporting ecosystems, belonging to, managed by, controlled by, or appertaining to such Indian tribe, or held in trust for the benefit of such Indian tribe, or belonging to a member of such Indian tribe, if such resources are subject to a trust restriction on alienation. Designated tribal officials are assigned to act when there is injury to, destruction of, loss of, or threat to natural resources, including their supporting ecosystems.

In addition, tribal emergency management and environmental agencies have responsibilities similar to those described above for state agencies. Water and air quality program standards within reservations must be factored in during response actions. Representatives from these agencies should be consulted during response activities.

4.2.6 Local Jurisdictions/Agencies Roles/Responsibilities

Local Fire Departments, Law Enforcement, and Emergency Medical Services

Public safety organizations will generally be the first government representatives at the scene of a discharge or release. They are expected to initiate public safety measures necessary to protect public health and welfare and that are consistent with containment and cleanup requirements in the NCP. They are responsible for directing evacuations pursuant to existing state or local procedures. Local agencies may provide the initial incident command and establish a command post. The local agency may also establish a Unified Command with other government agencies, depending upon the extent of the incident. They will likely isolate the scene and restrict access, conduct appropriate initial notifications, and perform any other necessary life-safety functions including search and rescue, firefighting, or other defensive actions, emergency medical care, and decontamination of exposed persons. They may also provide emergency communications equipment, on-scene liaison with Unified Command, public information support to Unified Command, and protective action guidance to stakeholders.

Local Emergency Planning Committee (LEPC) and County Emergency Management

As specified in Sections 301 and 303 of the Superfund Amendments and Reauthorization Act (SARA) Title III, local emergency planning districts are designated by the State Emergency Response Commission (SERC) in order to facilitate preparation and implementation of emergency plans. Each LEPC is to prepare a local emergency response plan for the emergency planning district and establish procedures for receiving and processing requests from the public for information generated by SARA Title III reporting requirements. The LEPC is to appoint a chair and establish rules for the LEPC. The LEPC is to designate an official to serve as coordinator for information, and designate in its plan a community emergency coordinator. In addition to meeting the requirements for local emergency plans under SARA Section 303, state and local government agencies are encouraged to include contingency planning in all emergency and disaster planning for responses, consistent with the NCP, RCP, and ACP.

Local Hazardous Material (HAZMAT) Response Teams

Local HAZMAT response teams perform specialized mitigation and response actions at incidents involving hazardous materials and petroleum. These resources are often a sub-set of the local fire departments in the largest cities and towns throughout each state. Generally, dispatch of local HAZMAT response teams outside of their local jurisdictions in support of neighboring communities within their designated regions must occur via the state emergency management agencies. Local HAZMAT teams

may implement defensive measures in the initial response, and these agencies are critical to ensure public safety. However, most local HAZMAT teams are not equipped to perform oil containment and recovery on water.

4.3 RESPONSE STRATEGIES AND CONTROL POINTS

A key component of this sub-area oil spill response planning effort is development of pre-planned response strategies. Field reconnaissance activities were conducted to identify accessible control points along the rivers and large water bodies within the sub-area where response strategies could be implemented relatively quickly. Control points and response strategies were developed in relation to worst-case discharge spill projections.. Control Points are identified on the TERA Viewer within the “Geographic Response Plans” layer. This layer also contains boat ramps, staging areas, booming strategies, and other response-related information.

These control points were determined to be the best locations identified to contain/collect oil with the goal of protecting sensitive resources. Assumedly, these control points will be used during the initial 24 to 72-hour response period, when response equipment and resources are often limited.

Relative ease of access to the pre-identified control points was considered during the response planning. The majority of the control points are on public lands, so legal access (i.e., permission to enter the property) is expected to be granted. However, several control points are on, or require passing through, privately-owned property. To obtain entry on privately-owned property, access agreements, verbal or written, are required. Response strategies developed as part of this SACP are not the only activities required to contain and recover oil during a response. Defensive actions must be initiated as soon as possible to prevent, minimize, or mitigate threat(s) to the public health or the environment.

Response strategies to be implemented at each control point area were developed for certain conditions (flow, weather, etc.). A response strategy is the technique likely to be implemented at a particular control point (e.g., deflection boom deployed to move oil away from sensitive receptors/habitat). However, incident-specific or site-specific conditions, movement of oil, and time necessary to mobilize response resources to a control point must be considered during an incident. Response personnel must be knowledgeable and ready to modify the response strategies as needed to mitigate the threat, given specific environmental conditions during a response.

Implementation of the response strategies requires trained personnel. Facility owners or operators must ensure that all private response personnel they employ are trained to meet the Occupational Safety and

Health Administration standards for emergency response operations promulgated in 29 CFR 1910.120 (Hazardous Waste Operations and Emergency Response regulations). These regulations were established to ensure the health and safety of personnel employed in hazardous substance response and cleanup operations. Additionally, response activities could involve boat operations and handling of oil response equipment. Trained personnel who may be available to assist during a response include those affiliated with private industry, response contractors, and federal/state/local agencies.

Additionally, Appendix B of this SACP is an oil spill response document that summarizes general oil spill response techniques that are relevant to the Mid-Missouri Sub-Area. Response strategies/techniques discussed in this document are not site/location-specific and are intended for broad planning use.

4.4 RESOURCES AND EQUIPMENT

As previously discussed, owners of EPA-regulated FRP facilities and DOT-regulated pipelines are required to develop plans to address a worst-case discharge from their facilities or pipelines. These plans include notification procedures, identification of resources, and provisions for specific actions. The plans also include details on installation or construction of equipment or structures so that spills can be contained as soon as possible. This usually involves secondary containment systems, such as dikes, barriers, and diversionary flow paths. In general, industry planning is designed to contain spills at the source and at the facility. Downstream planning with a focus on protection of sensitive resources is often not included.

In addition, regulated facilities/pipelines have minimum equipment requirements to address a worst-case discharge (generally 1,000 feet of boom). Facility equipment and resources are often limited and used immediately at the time of a spill at the source or the nearest downstream location. Regulated FRP facilities and pipelines have contracts with Oil Spill Removal Organizations (OSROs) to respond to spills. Mobilization time for an OSRO can be lengthy depending on the location of the spill. The initial 24 to 72 hours following a spill are the most critical for containment and planning of upcoming response operations. The control points and response strategies discussed in Section 4.3 were primarily developed to provide guidelines for potential response measures designed to reduce downstream spread of an oil spill.

Available equipment and resources may be a limiting factor within the initial hours following a spill. Notably, in addition to equipment caches owned by private companies (to address spills from their facilities), industry coalition groups such as Sakakawea Area Spill Response, LLC (SASR) maintain shared equipment. While these companies may have trained personnel to respond to spills from their

operated facilities, this does not mean these same personnel are available to respond to spills from other facilities. The intent of the SACP planning effort is to include information regarding equipment cache locations, inventories, and contacts in this plan. Equipment cache information is available within the “Geographic Response Plan” layer, in the "Documents" folder on the Tool Bar.

4.5 THE EMERGENCY RESPONSE APPLICATION

TERA is an EPA-developed and -managed web-based tool (referred to as a Viewer). TERA contains geospatial data from federal, state, and private sources. TERA was developed to assist in planning and response. TERA also provides the initial geospatial platform for the EPA during spill responses.

TERA was used in this plan to assess reaches of navigable waters and adjoining shoreline that would be impacted by a discharge of oil from an FRP. The 27-hour FRP spill projection data layer was used in conjunction with data layers where sensitive areas are identified. These areas include: critical habitat for threatened and endangered species, national wildlife refuges and wilderness areas as identified by USFWS; national parks and monuments as designated by the National Park Service; all of the state parks in Region 8; public drinking water facilities in the 6-state area, and other such critical resources as identified by the EPA. Representatives from federal and state trustees who manage these sensitive areas were contacted to attend area committee meetings and conduct field work with the Federal OSC to establish access locations (control points) for development of response strategies (see Section 4.3).

TERA is composed of mapping components and data layers including drinking water intakes, critical habitat information, sensitive species information, protected areas, bulk oil storage facilities, pipelines, tactical response strategies, equipment caches, and river access points (control points and/or boat ramps). Each component is organized and grouped in a layer structure and includes pertinent response information. The user can access and display critical response information, such as emergency contacts and boom deployment strategies. TERA is an important tool in the initial stages of a response and provides readily-accessible information to OSCs, trustees, and state, tribal, and local emergency responders.

TERA will be the primary method of disseminating this SACP because it allows the Sub-Area Committee to readily maintain up-to-date information. TERA is available to the Sub-Area Committee, RRT, and responding governmental agencies and industry that is subject to oil spill and hazardous substances response planning requirements; however, a username and password must be obtained through EPA Region 8. TERA Viewer is available at the following website:

https://r8.ercloud.org/TERA_External/ A TERA User Guide is available on the TERA Viewer Tool Bar in the "Documents" folder.

5.0 CHEMICAL COUNTERMEASURES, IN-SITU BURNS, BIOREMEDIATION

A number of actions are possible to address oil discharges. Normal physical recovery methods of containment, pumping, sorbing, and digging are preferred in Region 8, but chemical countermeasures, in-situ burns, and bioremediation are also options. These techniques include use of various chemicals to emulsify, solidify, gel, or herd oil on water; chemicals to promote biodegradation of oil; and combustion of spilled oil to quickly reduce the volume of oil in the environment. Section 311(j)(4)(C)(v) of the CWA, as amended by OPA 90, requires that the Area Committee “describe the procedures to be followed for obtaining an expedited decision regarding the use of dispersants.” General procedures are described in the following sections, and more detail is available in Annex IX of the Region 8 RCP.

5.1 CHEMICAL COUNTERMEASURES/SUBPART J AGENTS

Region 8 does not provide pre-authorizations for use of chemical countermeasures. If subject to Subpart J regulations in the NCP, chemical countermeasure use must be reviewed and authorized by the incident-specific RRT. This includes use of surface collecting agents, dispersants, biological additives, burning agents, or miscellaneous oil spill control agents. “Sinking agents” are not allowed in EPA Region 8. The Federal OSC may request RRT approval to use chemicals on behalf of the RP for the spill. However, physical recovery and removal of oil is the preferred cleanup technique.

The EPA has compiled a list of dispersants and other chemicals that the Federal OSC or the party responding to the spill may consider for use during a spill emergency—the NCP Product Schedule (available at: <http://www.epa.gov/emergencies/docs/oil/ncp/schedule.pdf>). Listing of a product on the NCP Product Schedule does not authorize or pre-approve use of listed products, and products not listed may not be used.

The Federal OSC may authorize use of any chemical countermeasure agent without obtaining RRT authorization if it is immediately necessary to prevent or substantially reduce hazard to human life. In this event, the Federal OSC will inform the RRT and the RRT representative of the affected state as soon as practicable. In situations not involving immediate human hazard, the Federal OSC must notify and receive concurrence of the RRT Co-Chairs (EPA Region 8 and USCG) and the RRT representative of the affected state, and where practicable, will consult with the natural resource trustees.

5.2 IN-SITU BURNS

Under certain specific conditions, in-situ burning may offer a logistically simple, rapid, inexpensive, and relatively safe means of reducing impacts of an oil spill. Burning can reduce the need for collection, storage, transport, and disposal of recovered material. In certain circumstances, such as in remote, difficult to access areas and or where ice has contained the oil, burning may be the more effective and preferred response technique. In-situ burning may have significant short-term impacts (e.g., airborne release of particulate matter), but may actually produce the lowest long-term impact because it removes the oil quickly. In-situ burning should augment, not replace, other oil spill response techniques such as mechanical removal or chemical countermeasures. For the Mid-Missouri River Sub-Area, the use of in-situ oil burning will be considered as a means to avert potential oil spill impacts.

In accordance with the NCP, RCP, and ACPs, if an accelerant is used to promote sustained burning of oil, procedures described in Section 5.0 above and Subpart J of the NCP must be followed. Specifically, the RRT must authorize use of the accelerant for the in-situ burn. If no accelerant or other chemical countermeasure is used, the RP/Unified Command must consult with the affected state(s) and natural resource trustees to obtain appropriate permits (i.e., air quality permits) and other permissions for the burn.

5.3 BIOREMEDIATION

Bioremediation activities may be subject to the same regulations and authorizations described for chemical countermeasure use as defined in Section 5.1 above, depending on site-specific conditions and desired use of the bioremediation agent. Any entity wanting to use bioremediation agents during an incident should contact the Federal OSC for more information. Biotreatment cells or land-farming cells for contaminated soils are likely subject to other solid waste management requirements but not necessarily Subpart J standards.

6.0 OTHER CONTINGENCY PLANS

This SACP was prepared under Section 311(j) of the CWA, as amended by OPA 90. This plan is intended to be fully consistent with and supportive of other private, local, state, regional, and federal plans as described in this section. It also functions as a part of the RCP and ACP for Region 8.

Private-Sector Response Plans

Private-sector response plans, including those for FRP facilities and pipelines, are structured and written as self-contained documents that serve as a complete reference tool for their operators during a spill response. These plans must be consistent with local, state, and federal government contingency plans. They must identify response personnel and equipment to be used to mitigate a worst-case discharge. Environmental, economic, and cultural sensitivity data, as well as response resources and other information required as part of private-sector response plans, must be consistent with this sub-area plan.

State and Local Response Plans

In addition to meeting the requirements for local emergency plans under SARA Section 303, state and local government agencies are encouraged to include contingency planning for responses consistent with the NCP, RCP, and ACP in all emergency and disaster planning (NCP Section 300.180).

Federal Response Plans

The U.S. EPA Region 8 RRT developed the RCP to coordinate timely, effective responses by various state and federal agencies and other organizations to discharges of oil or releases of hazardous substances. When implemented in conjunction with other federal, state, and local contingency plans, the RCP and ACP are designed to effectively facilitate removal of a worst-case discharge from a facility or vessel operating in Region 8, which includes the states of Montana, South Dakota, and North Dakota.

The RCP provides the organizational structure and objectives necessary to prepare for and respond to a discharge of oil or release of hazardous substances, pollutants, and contaminants. It provides for timely and effective coordination and direction of federal, state, and local response systems, and supports development of capability for the private sector to handle such incidents.

The Region 8 RCP fulfills the requirements of the NCP for both RCP and ACP, and includes references to relevant portions of the National Response Framework (NRF), particularly Emergency Support

Function (ESF) #10 Hazardous Materials. The RCP implements the NCP and the ESF #10 component of the NRF at the regional level and is the chief working document of the RRT.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP)

The NCP (40 CFR Part 300), referenced repeatedly herein, created the National Response System. This provides the organizational structure and procedures to prepare for and respond to discharges of oil and releases of hazardous substances, including specific responsibilities among government agencies, descriptions of resources available for response, a summary of state and local emergency planning requirements, and procedures for undertaking removal actions under the CWA. This is the mechanism for coordinating response actions by all levels of government in support of the local incident commander and/or state or Federal OSC.

National Response Framework

The National Response Framework (NRF) (<http://www.fema.gov/emergency/nrf/>) was developed under the Disaster Relief Act of 1974, as amended by the Stafford Disaster Relief Act of 1988. The NRF established a foundation for coordinating federal assistance to supplement state and local response efforts to save lives, protect public health and safety, and protect property in the event of a natural disaster, such as a catastrophic earthquake or other incident declared a major disaster by the President. Response actions under OPA/CWA to discharges of oil are not managed through the NRF or the Disaster Relief Act.

Under the NRF, federal assistance is delivered through 15 annexes, or ESFs, each of which describes a single functional area of response activity. The Hazardous Materials Annex, ESF #10, addresses releases of oil and hazardous substances that occur as a result of a natural disaster or catastrophic event, and incorporates preparedness and response actions carried out under the NCP. The EPA serves as the chair of ESF #10 and is responsible for overseeing all preparedness and response actions associated with ESF #10 activities. The National Response Team and RRT departments and agencies serve as support entities.

An oil discharge may occur during a natural disaster; however, response to such an incident will not likely be conducted within the structure of the NRF. Specifically, this means the EPA and others may respond without the state's request for assistance and without a mission assignment from FEMA. In such cases, the oil response actions will still be coordinated by and communicated to the state Emergency Operations Center and/or FEMA's Joint Field Office and other response agencies. However, funding, incident action planning, and operations will be largely independent of FEMA and state actions.

APPENDIX A
SUB-AREA CONTACT LIST

**CONTACT LIST
MID-MISSOURI RIVER SUB-AREA**

Agency	Phone Number
National Response Center - 24 hour National Reporting Center for Oil and Chemical Spills	800-424-8802 - On-line Reporting Tool: http://www.nrc.uscg.mil/nrchp.html
U.S. EPA Region 8 - Spill Line	303-293-1788
North Dakota Department of Emergency Services	800-472-2121
North Dakota Oil and Gas Division	701-328-8020
North Dakota Department of Health	701-328-5210
North Dakota Game and Fish Department - Bismarck Office - Riverdale Office - Williston Office - Dickinson Office	701-328-6300 701-654-7475 701-774-4320 701-227-7431
South Dakota Department of Public Safety/Office of Emergency Management	605-773-3231 (24-hour) 605-773-3580
South Dakota Department of Environment and Natural Resources	605-773-3231 (24-hour) 605-773-3296 605-773-6035
South Dakota Game, Fish and Parks	605-773-3718
Montana Disaster and Emergency Services	406-431-0411 (24-hour) or 406-324-4777 (24-hour)
Montana Department of Fish, Wildlife, and Parks	406-444-5686
Montana Department of Natural Resources and Conservation	406-444-2074
Montana Department of Environmental Quality	406-431-0014 (24-hour) 406-431-2411
Wyoming Department of Environmental Quality	307-777-7781 307-630-8497 (24-hour)

**CONTACT LIST
MID-MISSOURI RIVER SUB-AREA**

Agency	Phone Number
Wyoming Game and Fish Department	307-777-4587
U.S. Corps of Engineers - Garrison Dam - Riverdale Office - Dam Power Plant Control Room	701-654-7411 701-654-7770 - (Emergency Only)
U.S. Fish and Wildlife Service - Bismarck	701-250-4481
- Bismarck Office - Dickinson Office - Waterford City Office	701-250-4443 701-227-7800 701-842-2393
Bureau of Reclamation - Great Plains Region	406-246-7662 or 406-698-6340 (Emergency Duty Officer)
Three Affiliated Tribes - Main Number - New Town Office - Environmental	701-627-4781 701-627-4569
Standing Rock Sioux Tribe	701-854-8644
Cheyenne River Sioux Tribe	605-964-4155
Bureau of Indian Affairs - New Town BIA - Cheyenne River Agency BIA - Standing Rock Agency	701-627-4707 605-964-6611 701-854-3433

CONTACT LIST

MID-MISSOURI RIVER SUB-AREA

Agency	Name	Phone Number	Email Address
U.S. EPA Region 8	Steve Way	303-312-6723	way.steven@epa.gov
North Dakota Department of Health	Kris Roberts	701-328-5236	kroberts@nd.gov
North Dakota Department of Emergency Services	Ray DeBoer	701-328-8112	rdeboer@nd.gov
North Dakota State Fire Marshall's Office	Doug Myers	701-328-5555	
North Dakota Game and Fish Department - Bismarck Office - Williston Office - Riverdale Office	Headquarters Kent Luttschwager Dave Fryda	701-328-6300 701-774-4320 701-654-7475	dfryda@nd.gov kluttschwager@nd.gov
North Dakota Oil and Gas Division	Dave Hvinden	701-328-8037	dhvinden@nd.gov
South Dakota Department of Environment and Natural	Kim McIntosh	605-773-323	kim.mcintosh@state.sd.us
Department of Interior - RRT Representative	Robert F. Stewart	303-445-2500	robert_f_stewart@ios.doi.gov
U.S. Fish and Wildlife Service	Kevin Shelley Jessica Johnson	701-355-8512 701-355-8507	kevin_shelley@fws.gov jessica_n_johnson@fws.gov
U.S. Fish and Wildlife Service - South Dakota	Matt Schwarz Scott Larson	605-224-8693 x232 605-224-8693 x224	matt_schwarz@fws.gov scott_larson@fws.gov
U.S. Fish and Wildlife Service - Montana	Karen Nelson David Rouse	406-449-5225 x210 406-449-5225 x211	karen_nelson@fws.gov david_rouse@fws.gov
U.S. Corps of Engineers	William Harlon	701-654-7746	william.d.harlon@usace.army.mil
U.S. Corps of Engineers	Todd Lindquist	701-654-7702	todd.j.lindquist@usace.army.mil
U.S. Corps of Engineers	Jeff Keller	701-572-6494	jeffrey.e.keller@usace.army.mil
Bureau of Reclamation - Dakotas Area Office	David Rosenkrance	701-221-1201	drosenkrance@usbr.gov
Bureau of Reclamation - Montana Area Office	Brent Esplin	406-247-7298	besplin@usbr.gov
Three Affiliated Tribes	Harlan Deane	701-421-0053	hdeane@mhanation.com
Three Affiliated Tribes Emergency Manager	Cliff Whitman	701-627-4805	cwhitman@mhanation.com
Bureau of Indian Affairs - Berthold Agency	Jeff Hunt	701-627-4707	
County/City Emergency Managers			

CONTACT LIST**MID-MISSOURI RIVER SUB-AREA**

Agency	Name	Phone Number	Email Address
North Dakota			
Adams County Emergency Manager	Michele Gaylord	701-567-4598	adams-em@nd.gov
Billings County Emergency Manager	Pat Rummel	701-623-4876	prummel@nd.gov
Bowman County Emergency Manager	Dean Pearson	701-523-3129	dapearson@bownmancountynd.gov
Burleigh County Emergency Manager	Mary Senger	701-222-6727	msenger@nd.gov
City of Bismarck Emergency Manager	Gary Stockert	701-222-6727	gstockert@nd.gov
Dunn County Emergency Manager	Denise Brew	701-573-4612	denise.brew@dunncountynd.org
Emmons County Emergency Manager	Mary Senger	701-222-6727	msenger@nd.gov
Golden Valley County Emergency Manager	Brenda Frieze	701-872-4733	bjfrieze@nd.gov
Grant County Emergency Manager	Joann Ozbun	701-622-3944	jmo@westriv.com
Hettinger County Emergency Manager	Ilene Hardmeyer	701-824-4227	ihardmeyer@nd.gov
Mckenzie County Emergency Manager	Jerry Samuelson	701-444-6853	jsamuelson@co.mckenzie.nd.us
McLean County Emergency Manager	Richard Johnson	701-462-8103 - ext. 265	rijohnson@nd.gov
Mercer County Emergency Manager	Carmen Reed	701-745-3302	creed@nd.gov
Morton County Emergency Manager	Tom Doering	701-667-3307	tom.doering@mortonnd.org
Mountrail County Emergency Manager	Don Longmuir	701-444-6853	donl@co.mountrail.nd.us
Oliver County Emergency Manager	Carmen Reed	701-745-3302	creed@nd.gov
Sioux County Emergency Manager	Frank Landeis	701-854-3481	flandeis@nd.gov
Slope County Emergency Manager	Dick Frederick	701-879-6278	outlaw@ndsupernet.com
Stark County Emergency Manager	Bill Fahlsing	701-456-7911	bfahlsing@starkcountynd.gov
Ward County Emergency Manager	Amanda Schooling	701-857-6534	amanda.schooling@wardnd.com
Williams County Emergency Manager	Andrea Cross	701-577-7707	andrac@co.williams.nd.us
South Dakota			
Butte County	Tyler Trohkimoinen	605-723-0900	emergencygmt@buttesd.org
Campbell County	Lawrence Goehring	605-955-3598	larrygoehring@valleytel.net

CONTACT LIST

MID-MISSOURI RIVER SUB-AREA

Agency	Name	Phone Number	Email Address
Corson County	Keith Gall	605-273-4210	corsoncoso@sdplains.com
Dewey County	Ted Schweitzer	605-865-3691	ted.schweitzer@state.sd.us
Edmunds County	Leland Treichel	605-287-4394	edmundscountym@yahoo.com
Haakon County	Lori Quinn	605-859-2186	haakon@gwtc.net
Harding County	Kathy Glines	605-375-3313	kathy.glines@state.sd.us
Hughes County	Rob Fines	605-773-7454	rob.fines@co.hughes.sd.us
McPherson County	Dawn Jenner	605-439-3667	mcpersonem@valleytel.net
Perkins County	Kelly Serr	605-244-5243	perkinscoso@sdplains.com
Potter County	Cheryl Sautner	605-765-9405	sautner2000@yahoo.com
Stanley County	Rob Fines	605-773-7454	rob.fines@co.hughes.sd.us
Sully County	Curt Olson	605-258-2244	curt.olson@sullycounty.net
Walworth County	Shannon Thompson	605-649-7878	wcoemergencymanagement@hotmail.com
Ziebach County	Shane Farlee	605-515-3768	farleezcemeran@yahoo.com

Montana

Carter County	George Bruski	406-975-6416	ccdes42@gmail.com
Fallon County	Chuck Lee	406-778-7121	clee@midrivers.com
Wibaux County	Frank Datta	406-796-2218	wibaux@midrivers.com

Wyoming

Crook County	Sheila Hansen	307-283-4516	homelandsecurity@crookcounty.wy.gov
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Industry

Pipelines - Refer to the Pipeline Emergency Contact Directory - Available on EPA's TERA Website

Sakakawea Area Spill Response LLC. (SASR)	Bob Dundas	307-247-3702	Bob.Dundas@truecos.com
	Jennifer Satterwhite	307-272-1900	jsatterwhite@marathonoil.com
	Jason Tuhy	701-290-3562	jason.tuhy@whiting.com

EPA-Regulated Facility Resonse Plan (FRP) Facilities

Facility Name	Location	Phone Number	Contact
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CONTACT LIST

MID-MISSOURI RIVER SUB-AREA

Agency	Name	Phone Number	Email Address
Bakken Oil Express LLC Rail Hub	Dickinson, ND	402-631-7918 402-631-7664 402-631-7708 316-440-7531	Mike Salik-VP Operations-Alt QI Jimmy McClain-Operations Mgmt-Alt QI Chris Lewis-Operations-Primary QI Donn Lentz-Principal Manger-Primary
Rangeland Terminals & Rangeland Pipelines	Epping, ND	562-461-6076 734-548-3617	Robert Sinclair-Ops Supervisor Joe Young-Ops Superintendent
Brigham Oil & Gas, L.P.-Trenton Crude Oil Facility	Williston, ND	701-875-3501 701-580-1505 701-580-5016	Office Phone Number Randy Samuleson-Production super-Alt QI Russell Rankin-Op Manager-Primary QI
Tioga Rail Terminal	Tioga, ND	701-701-389-2236 701-664-2756 701-641-8317	Shane Gillet-Safety Coordinator-Alt QI Michael Yanish-Watco Companies-Alt QI Jody Schroeder-Field Ops Supr-Primary QI
New Town Transfer Station	New Town, ND	NA	NA
Tesoro Refining & Marketing Company, LLC	Mandan, ND	701-667-2412 701-319-8632 701-667-2402 701-319-8602	Dave Vinchattle- Manager-Alt QI " John Berger-Refinery Manager-Primary QI "
Petro-Hunt Corp. Charlson Oil Field	Charlson, ND	701-675-2464 701-675-8072 701-863-6622 713-863-6564	Ron Shimek-Alt QI " Gene McLeod-Primary QI "
BNSF Mandan Facility	Mandan, ND	701-667-2264 1-800-832-5452 701-667-2218	Mike Long-Alt QI Bill Snider-Primary QI
Cenex (CHS) Mandan Asphalt Terminal	Mandan, ND	406-628-5209 800-421-4122 406-628-5210	S. Michael Stahly-Enviro Mgmt-Primary QI Jeff Casey-Enviro Coor-Alt QI

CONTACT LIST**MID-MISSOURI RIVER SUB-AREA**

Agency	Name	Phone Number	Email Address
Blue Flint Ethanol	Underwood, ND	701-442-7503	Adam Dunlop
		701-527-5198	"
		701-442-7501	Travis Strickland
		701-202-7107	"
Bridger Pipeline LLC	Stanley, ND	701-570-0120	Jim Hill-Station Mgmt-Primary QI
		701-225-6269	"
		701-260-2278	Don Clark-Area Super-Alt QI
Falkirk Mine	Underwood, ND	701-250-2467	Randall Crooke
		701-400-5843	Jeremy Eckroth
Basin Transload	Beulah, ND	406-855-5008	Ray Sheldon-Primary QI
		701-880-8305	Ron Rusch-Alternate QI
Dakota Petroleum Transport Solution	New Town, ND	701-389-2792	Jim Tate-Primary QI
Johnson's Corner Oil Terminal	Watford City, ND	701-580-5972	Tim Stubstad-Primary QI
		970-946-7485	Shawn Rust-Operations Manager
Enable Midstream Bear Den Terminal	Watford City, ND	479-461-6583	Johnny Hardaway
		701-495-1253	Clint Fowler
Alexander Crude Oil Terminal	Alexander, ND	701-580-5972	Tim Stubstad-Primary QI
		970-946-7485	Shawn Rust-Operations Manager
Van Hook Crude Terminal, LLC	New Town, ND	701-421-3334	Conrad Crockford
		281-954-1888	Brian Troxel

Oil Spill Cleanup Contractors

Contractors - Refer to the State of South Dakota and State of North Dakota Cleanup Contractors List - Available on EPA's TERA Website

APPENDIX B
OIL SPILL RESPONSE TECHNIQUES

APPENDIX B: OIL SPILL RESPONSE TECHNIQUES

This appendix provides supplemental information to the SACP on response strategies for oil spills that may be appropriate for a variety of locations within the sub-area. A key component of the sub-area oil spill response planning effort is development of pre-planned response strategies. Field reconnaissance activities have occurred in coordination with the Sub-Area Committee to identify accessible control points along streams, rivers, and Lakes Sakakawea and Oahe where response strategies could be implemented relatively quickly. These SACP control points were identified and response strategies were developed to provide sufficient information to expedite and guide the initial response actions to a worst-case oil discharge. The selected control points were determined to be the best locations under normal flow conditions to contain/collect oil with the goal of protecting sensitive resources during the initial 24- to 72-hour response period when response equipment and resources are often limited. The control points and associated booming strategies for those locations are available on The Emergency Response Application (TERA) Viewer at the link provided below. In the event of a major oil spill incident, the incident specific planning will ultimately direct the operations and equipment needs for the long-term response actions.

EPA Region 8 TERA Viewer link: https://epar8gis.net/TERA_external

The oil spill control points and response strategies presented on the TERA Viewer are intended to provide the basic information needed for oil spill response planning at those specific locations. Conversely, the response strategies/techniques discussed in this document are not site/location-specific and are intended for broad planning use. Facility- and incident-specific response plans should also be developed as required to supplement the sub-area planning efforts completed to date. It should be noted that sub-area response planning, including identification of oil spill control points and response strategies, is not a substitute for regulatory planning requirements that facilities may be subject to.

Per 40 Code of Federal Regulations, Part 300, (National Contingency Plan), Section 300.317, safety of human life is the highest priority during a response. Stabilizing the situation to prevent worsening of the event is the next priority. The response must use all necessary containment and removal tactics in a coordinated manner to ensure a timely, effective response that minimizes adverse impact on the environment. There are various techniques that emergency responders may use to control oil spills and minimize impacts to human health and the environment. A key to effectively mitigating oil spills is responding as quickly as possible to minimize the migration of oil and proper selection and use of equipment and materials best suited to the type of oil involved in the incident and appropriate for conditions at the spill site. Most spill response equipment and materials are greatly affected by

environmental factors such as water velocity/current and wind, and may vary to suit the size of the water body where the spill occurred. Oil-related damage to shorelines and threats to flora, fauna, and sensitive areas can be reduced by timely and proper use of response equipment.

Detailed below are techniques that can be utilized during an oil spill response. These techniques are most applicable for spills to small drainages, as well as larger rivers and streams. Additionally, detailed below is an approach (and subsequent strategies) that can be utilized on large open water bodies such as Lake Sakakawea. Three oil spill response scenarios have been identified that are most likely within Region 8 and are all applicable for this sub-area. Those scenarios are:

- Dry ditches/coulees and small flowing streams/ditches
- Large flowing rivers/streams
- Open water bodies

For each of these scenarios, photographs of oil containment techniques that could be implemented during an incident are provided below. It should be noted that early stoppage of a spill source and quick containment will greatly reduce the scope of cleanup operations and environmental damage.

Vital to any response is the timely identification of locations where on-site activities can be successfully conducted. Some potential locations be predetermined during spill planning activities. Such locations should meet the following criteria: (1) accessible by truck (or boat) so that response personnel and equipment can efficiently collect and remove spilled oil, and (2) located within the oil flow path so that the spilled material can be intercepted/diverted, particularly at sensitive areas. These locations should be selected to avoid high flow/current conditions and areas with poor anchoring options.

Response Techniques for Dry Ditches/Coulees and Small, Flowing Streams/Ditches:

- Earthen dams
- Under flow dams (small, large, and T-pipe)
- Straw bale dams
- Wier dams
- Culvert block dams
- Sorbent boom
- Containment boom

Earthen Dam



Small Under Flow Dam



Large Under Flow Dam



T-Pipe Under Flow Dam



Straw Bale Dam



Wood Wier Dam/Culvert Block



Sorbent Boom



Containment Boom



Response Techniques for Large, Flowing Rivers/Streams:

- Containment Boom
- In-situ Burn/Fire Boom

As previously mentioned, as part of the ongoing sub-area planning activities within EPA Region 8, control points and response strategies have been developed to address worst-case discharge spill projections. Some of the control point locations and booming strategies identified for the larger rivers and streams within the sub-area are available on the TERA Viewer.

Response strategies to be implemented at each control point were developed for average/typical conditions (flow velocity, weather impacts, etc.). Response personnel must be knowledgeable and ready to modify the response strategies as needed to mitigate the threat, if unusual environmental conditions are encountered during a response. It should be noted there are condition-related limitations regarding the deployment of certain response equipment. These limitations are often associated with high flow conditions and flooding. Under high flow conditions, a primary objective is to limit the spread of oil within the flood zone and backwater areas. Health and safety of response workers must be taken into consideration under all circumstances.



Under certain conditions, in-situ burning may offer a logistically simple, rapid, inexpensive, and relatively safe means for reducing impacts of an oil spill. Burning can substantially reduce need for

collection, storage, transport, and disposal of recovered material. Under certain circumstances, such as oil spilled under ice, burning may be the only viable response technique. In-situ burning may have significant short-term impacts (e.g., airborne release of particulate matter and hazardous substances, etc.), but may actually produce the lowest long-term impact because it removes the oil quickly. In-situ burning should augment, not replace, other oil spill response techniques such as mechanical removal. Burning often requires the use of fire boom as shown in the picture below. Other factors associated with in-situ burns are detailed in the strategies/priorities discussion for large, open water bodies section below.



Response Approach for Large, Open Water Bodies:

An oil spill to a large, open water body, such as Lake Sakakawea, poses many challenges. Response strategies and techniques that should be considered during such a spill are discussed below. Once oil is released to an open water body, it will naturally spread, fragment, and disperse under the influence of wind, waves, and current.

Approach:

- Assess the amount and type of spilled oil via surveillance and tracking. Aerial flights may be warranted if the area/shoreline associated with a spill is large, and access to visually assess the spill is limited.
- Based on surveillance data, determine the most effective uses of response equipment. Response resources may be limited during the first 24 to 36 hours following a spill, so determination of where to mobilize resources is critical.
- Utilize existing information/plans to identify pre-existing control/access points where response activities can be implemented.

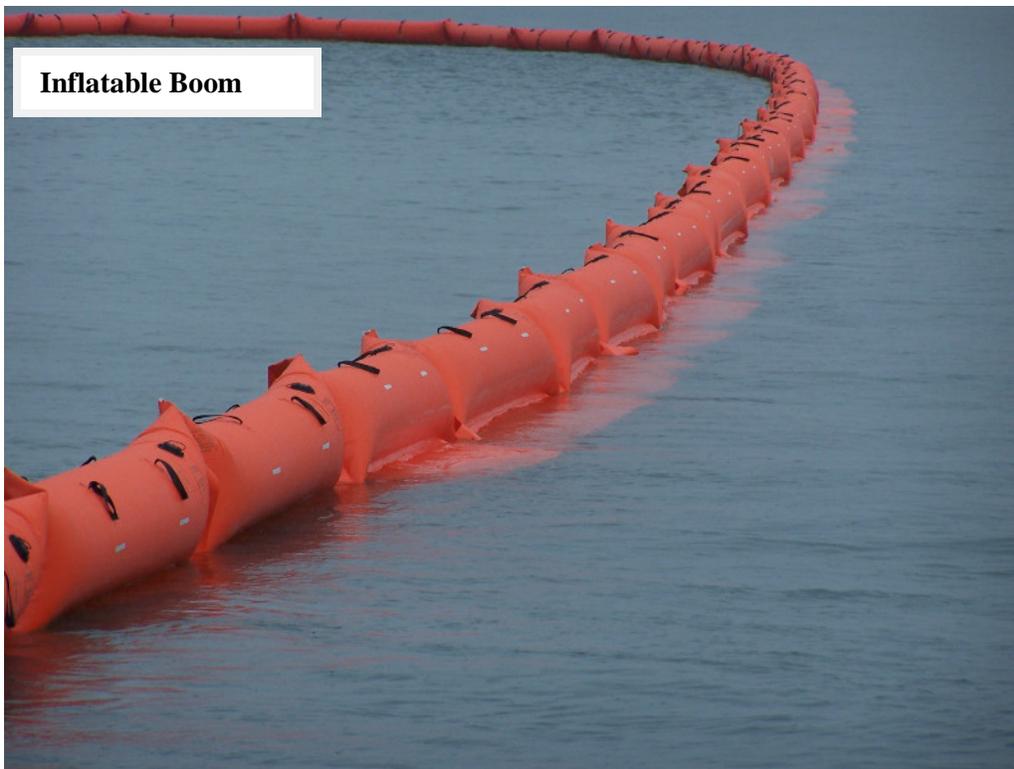
Strategies/Priorities for Large, Open Water Bodies:

The highest priorities during a response are safety and then stabilization. For an open water environment, in non-ice conditions, environmental factors (flow/current and wind in particular) will determine the oil flow path and locations where spilled oil will accumulate. Listed below are strategies/techniques that can be applied to an oil spill response on large, open water bodies. These strategies and techniques are not listed by priority. Response strategies implemented during the initial phases (24 to 72 hours) of a response will largely be dependent on access points and resource/equipment availability. All factors must be evaluated to ensure an effective response is conducted. Followup evaluation will be required as additional resources become available.

- **Protection:** Identify sensitive areas regarding human health and environment (drinking water intakes, critical habitats, etc.) that could be impacted by the spill. Implement response activities for protection of these areas. Response actions may include placement of deflection or protection boom to divert or prevent oil from impacting the sensitive area/receptor/resource. Based on the availability of oil spill equipment/boom, protection may not be feasible until additional equipment and boom become available.
- **Containment:** Based on initial surveillance information, identify where oil has accumulated and where collection can be performed most efficiently. These locations are likely to be in bays, inlets, and shoreline pockets. Containment boom can be used to either deflect oil into collection areas or to contain the oil so collection can occur. As a note, bay inlets on Lake Sakakawea can reach up to 1 mile in distance; therefore, implementation of this strategy may depend on the amount of required resources (boom). Large reels of inflatable boom may be

the best option for rapid deployment of boom. However, no inflatable boom is known to be currently located within the sub-area. Photographs of inflatable boom are included below.

- **Collection:** Additional techniques that can be used to collect oil in open water include corralling oil using two boats (working together) to drag containment boom (with trapped oil) to recovery sites, and use of open water skimmer boats. This method is slow and will be of limited benefit in significant wave and wind conditions.
- **In-situ Burning:** Oil accumulation may occur in areas where mechanical removal is more harmful or not practical, and in-situ burning may be preferred to reduce the long-term impacts to aquatic and riparian/shoreline ecosystems. This type of action must be well managed to ensure the fire will not damage other resources, and generally it will require an evaluation by the resource trustees and acquisition of emergency air release permits. Time is also a consideration for in-situ burning. The longer oil is exposed to the environment, the less likely it is to effectively burn.



Inflatable Boom

