

Treasure Valley Geographic Response Plan

Treasure Valley

Geographic Response Plan

August 2019

2

Treasure Valley Geographic Response Plan

August 2019

Emergency Contact Sheet

Required Notifications									
National Response Center	800-424-8802								
Activation of StateComm through 911 system will automatically include these notifications									
Idaho Dept. of Environmental Quality, State Office208-373-0502									
Idaho Dept. of Environmental Quality, Boise, ID Regional Office	208-373-0550								
Idaho Dept. of Environmental Quality, Twin Falls, ID Regional Office	208-736-2190								
Idaho Office of Emergency Management	800-632-8000								

Federal						
US EPA Region 10 Spill Response Team	206-553-1263					
Coast Guard Watchstander	503-240-9301					
Coast Guard Pacific Strike Team	415-883-3311					
Coast Guard Region 13 Officer of the Day	206-217-6004					
US Fish and Wildlife Service (Chubbuck, ID)	208-237-6615					
US Fish Wildlife Service—Boise	208-378-5243					
Department of Interior, Office of Environmental Policy and Compliance	503-326-2489					
US Army Corps of Engineers- Environmental Response Specialist, Walla Walla	509-527-7020					
NOAA Boise, ID	208-334-9860					
NOAA Weather/Hydrology	509-244-0537					
NOAA Hazmat	206-526-4911					
NOAA Scientific Support Coordinator	206-849-9926					

Local Government (County)	
Idaho Office of Emergency Management	208-258-6500
Ada County Emergency Management	208-577-4750
Payette County Emergency Management	208-642-6006
Canyon County Emergency Management	208-454-7271
Elmore County Emergency Management	208-590-0967
Owyhee County Emergency Management	208-249-0571
Gooding County Emergency Management	208-934-5958
Twin Falls County Emergency Management	208-736-4234
Ada County Sheriff	208-577-3000
Payette County Sheriff	208-642-6006
Canyon County Sheriff	208-454-7510
Elmore County Sheriff	208-587-2121
Owyhee County Sheriff	208-495-1154
Gooding County Sheriff	208-934-4421
Twin Falls County Sheriff	208-736-4040

State	
Idaho State Police	208-884-7000 HQ in Boise 208-209-8730 dispatch
Idaho DOT- Boise (District 3)	208-344-8300
Idaho DOT- Shoshone (District 4)	208-886-7800
Idaho Ops Office	208-378-5773
Idaho Department of Fish and Game	208-769-1414 208-488-7468
State Historic Preservation Office	208-334-3861
Dig Line (ID)	800-342-1585 or 811
Idaho Public Health- District 3 – Southwest District	208-455-5300
Idaho Public Health- District 4 – Central District	208-375-5211
Idaho Public Health- District 5 – South Central District	208-327-5900
Idaho Department of Water Resources	208-769-1422
Oregon Office of Emergency Management	503-378-2911

Medical Services	
Treasure Valley Hospital - Boise	208-373-5000
St. Alphonsus RMC - Boise	208-367-2121
St. Luke's Medical Center – Boise	208-381-2222
West Valley Medical Center – Caldwell	208-459-4641
St. Alphonsus Medical Center - Nampa	208-205-1000
St. Luke's Nampa Medical Center - Nampa	208-505-2000
St. Luke's Meridian Medical Center - Meridian	208-706-5000
St. Luke's Elmore Medical Center – Mountain Home	208-587-8401
North Canyon Medical Center – Gooding	208-934-4433
St. Luke's – Jerome	208-814-9500
St. Luke's Magic Valley Medical Center – Twin Falls	208-814-1000

Local Government (City)	
City of Caldwell	208-455-3000
City of Middleton	208-585-3133
City of Nampa	208-468-4413
City of Meridian	208-888-4433
City of Boise	800-377-3529
City of Mountain Home	208-587-2104
City of Glenns Ferry	208-366-7418
Weekend Emergency	208-599-3762
City of Twin Falls	208-735-7287

Water Supply Contacts						
City of Weiser Water Intake	208-405-5114					
City of Fruitland Water Intake	208-230-2324					
Suez Water Intake	208-362-1479					
Glenns Ferry Water Intake	208-366-7418					
Response Contractors						
Clean Harbors	509-766-3290					
Environmental Services	800-645-8265					
NRC Environmental	503-283-1150					
	800-899-4672					
WRI Environmental	406-207-2027					
Response	406-240-9833					
Pipeline Contacts						
Marathon Oil	713-629-6600					
Williams	800-945-5426					
Railroad Contact						
UPRR – Jake Hammer	801-212-2778					
BNSF	800-832-5452					

HOW TO USE THIS GEOGRAPHIC RESPONSE PLAN

Purpose of Geographic Response Plan (GRP)

This plan prioritizes resources to be protected and allows for immediate and proper action. By using this plan, the first responders to a spill can avoid the initial confusion that generally accompanies any spill.

GRPs are used during the initial phase of a spill that lasts from the time a spill occurs until the Unified Command is operating and/or the spill has been contained and cleaned up. Generally this lasts no longer than 24 hours. GRPs constitute the federal and state on-scene coordinator (OSC) "orders" during the initial phase of the spill. During the project phase, the GRP will continue to be used, but with input from natural resource trustees.

Strategy Selection

Chapter 4.1 of the GRP contains complete strategy descriptions in matrix form and response priorities. The accompanying maps are located in **Chapter 4.2**. The strategies depicted in Chapter 4.2 will be implemented after reviewing on-scene information, including: river currents, weather conditions, oil type, initial trajectories, etc.

It is important to note that strategies rely on the trajectory of the spill. A booming strategy listed as a high priority would not necessarily be implemented if the spill trajectory and location did not warrant action in that area.

Chapter 6 outlines the sensitive resources requiring protection and the seasonality of their sensitivity. This information must be consulted before strategies are implemented, as there may be flight restrictions associated with a resource. Flight restriction information is also found in Chapter 6.

Standardized Response Language

In order to avoid confusion in response terminology, this GRP uses strategy names defined in **Appendix A** (e.g., diversion booming, exclusion booming).

Response Equipment

A table outlining equipment availability and response times is being developed for this GRP. In the interim, strategies will be deployed in the order equipment arrives on scene and as directed/selected by the on-scene coordinator.

Record of Changes

Date	Change Number	Summary of Changes

Table of Contents

Emergency Contact Sheet	3
How To Use This Geographic Response Plan	5
Record of Changes	6
Section 1: Introduction: Scope of this Project	11
Section 2: Site Description	13
 2.1 : Physical Features 2.2 : Hydrology 2.3 : Climate Table 2-1: Boise, Idaho, Wind Directions over the Entire Year 2.4 : Risk Assessment 	13 13 13 14 15
Section 3: Figures	16
Figure 3-1: Treasure Valley Boom Sites Map Figure 3-2: Treasure Valley Boom Sites Map with Exit Numbers Figure 3-3: Treasure Valley I-84 Exit Numbers Map Figure 3-4: Idaho Petroleum Infrastructure Overview Figure 3-5: Idaho Major Natural Gas Pipelines and Local Gas Distribution Co Figure 3-6: Snake (ID) Trajectory Map Figure 3-7: Boise Trajectory Map Figure 3-8: Snake (OR)Trajectory Map	mpanies
Section 4: General Protection/Collection Strategies	32
 4-1 : Chapter Overview 4.1.1 : Maps 4.1.2 : Major Protection Techniques 4.2: Strategy Locations and Descriptions Table 4-1: Booming Strategies, Staging Areas, and Boat Launches Table 4.3: Strategy Reports Rock Creek Road Diversion Dam Pumpland Bridge Low Line Canal Rock Creek Sligar Memorial Bridge Bell Rapids Road, Owsley Bridge Bliss Dam 6th Street South Canal Head Gate Canal Crossing Point Old Highway 51 Bridge South Cloverdale Bridge 	$\begin{array}{c} 33\\ 33\\ 33\\ 34\\ 35\\ 37\\ 38\\ 40\\ 42\\ 44\\ 46\\ 48\\ 50\\ 52\\ 54\\ 56\\ 58\end{array}$
usure Valley Geographic Response Plan 7 August 2019)

August 2019

S. Eagle Road		60
Duck Alley Di	version Dam	62
Franklin Blvd.	Bridge	64
Davis Lane	C	66
West Chicago	Street Bridge	68
South Middlet	on Road Bridge	70
Cassia Road	Shi Noud Dilage	72
		. =
Section 5: Shoreline Countermeas	ures	74
5.1 : Chapter Overview		75
5.2: Shoreline Type Photos		75
5.3: Oil Countermeasure Ma	atrix	75
5.3.1 Shoreline Cour	ntermeasures Matrices	79
Table 5-1: V	ery Light Oil	79
Table 5-2: Li	ght Oil	80
Table 5-3: M	edium Oil	81
Table 5-4: C	rude Oil	82
Section 6: Sensitive Resource/Wile	llife Flight Restriction Information	83
6.1: Sensitive Resources/W	ildlife	84
6.1.1 : Fish Habitat I	Description	84
Table 6-1: List of Fi	sheries Located within the GRP Coverage Area	84
6.1.2 : Endangered S	pecies Act (ESA)-Listed Fish Species	84
Table 6-2: Federally	Listed ESA Fish Species Located with the GRP Cov	verage
Area		84
6.1.3 : Chinook Salm	ion	84
6.1.4 : Whitefish		85
6.1.5 : Steelhead		85
6.1.6 : Bull Trout		85
6.1.7 : White Sturged	n	85
6.1.8 : Pacific Lamp	ey	86
6.2: Wildlife		86
Table 6-3: Federally	Listed ESA Species Located within the GRP Covera	age
Area		86
Table 6-4: Federally	Listed ESA Invertebrate Species Located within the	GRP
Coverage Area		86
6.2.1: Shorebirds, W	aterfowl, and Raptors	86
Table 6-5: Federally	^r Listed ESA Bird Species Located within the GRP	
Coverage Area		86
6.3: Aquatic Invasive Speci	es (AIS)	87
6.3.1 : Prevention of	AIS Migration	87
6.3.2 : Brazilian Eloc	lea	87
6.3.2 : Eurasian Wate	ermilfoil	87
6.4: Archeological Sites		88
6.4.1 : General Site I	locations	88
6.4.2 : Seasonal Sens	itivity	88
6.4.3 : Recommendat	tions	88
6.4.4 : Procedures fo	r the Finding of Human Skeletal Remains	88
6.4.5 : Procedures for	r the Discovery of Cultural Resources	88

6.5: Wildlife Resources/Flight Restriction Table	89		
Table 6-8: Wildlife Resource/Flight Restriction Table	89		
Section 7: Logistical Information	90		
Table 7-1: Logistical Information	91		
Appendix A: Protection Techniques	94		
Table A-1: Summary of Protection Techniques Table A-2: Fast Water Booming Techniques: Current Chip Log and Maximum Boom Deflection Angle Table A-3: Current Drag Force on One-Foot Boom Profile to Current Table A-4: Approximate Safe Working Loads/Tensile Strength of New Rope			
Appendix B: Remediation Options	99		
Appendix C: Geographic Response Plan Comments/Corrections/Suggestions			

9

Section 1 & 2: Introduction and Site Description

TREASURE VALLEY, IDAHO GEOGRAPHIC RESPONSE PLAN

1. Introduction: Scope of this Project

Geographic Response Plans (GRPs) are intended to help first responders to a spill avoid the initial confusion that generally accompanies any spill. They prioritize resources to be protected and allow for immediate and proper action.

GRPs for the inland areas of Idaho are prepared through the efforts of the Idaho Environmental Quality, Idaho State Emergency Response Commission, and the Environmental Protection Agency.

GRPs are developed through workshops involving federal, state, and local petroleum spill emergency response experts; representatives from tribes, industry, ports, and environmental organizations; pilots; and response contractors. Workshop participants identify resources that require protection, develop operational strategies, and pinpoint logistical support.

The first goal of a GRP is to identify resources, physical features, hydrology, currents and tides, winds, and climate that may affect response strategies. After compiling this information, sensitive natural resources are identified.

Secondly, response strategies are developed based on the sensitive resources noted, hydrology, and climatic considerations. Individual response strategies identify the amount and type of equipment necessary for implementation. The response strategies are then applied to likely spill scenarios for petroleum movement, taking into account factors such as wind, current, and tidal conditions.

Finally, additional logistical support is identified, including:

- Location of operations centers for the central response organization
- Local equipment and trained personnel
- Local facilities and services and appropriate contacts for each
- Response times for bringing equipment in from other areas.

This GRP addresses the downstream portions of the Snake River system from Hansen to Fruitland in Idaho, covering 182 miles of the Snake River. This plan also addresses portions of the Main Canal, the High Line Canal, the Low Line Canal, Rock Creek, the New York Canal, the South Channel Boise River, the Phyllis Canal, the Boise River, and the Black Canyon Canal.

This GRP provides:

Section 2 – Site Descriptions: General setting that includes physical setting, hydrology, climate, and public/environmental risk attributes.

Section 3 – Vicinity Map.

Section 4 – Protection strategies described for each identified river access point, including summary tables and maps.

Section 5 – Response method descriptions for identified shoreline types and petroleum product types.

Section 6 – Descriptions of sensitive natural resources.

Section 7 – Logistical information for accessing river and staging and deploying equipment.

Appendix A – Summary of protection techniques.

2. Site Description

This section contains topographic descriptions, physical river features, river hydrology, climate, and resources in the GRP coverage area. The intended users of this section are ICS support personnel who are arriving from outside of the Treasure Valley area and need to quickly learn the major features of the area. Due to the diversity of landforms, waterbodies, and ecosystems throughout the GRP coverage area—and the modification of each by climate, aspect, hydrology, geomorphology, etc.—this section should not be considered comprehensive or exhaustive. Section 2 is meant to give an overview of the GRP coverage area and readily identifiable sub-areas and provide adequate detail for response managers to make informed emergency response management decisions, in consultation with other stakeholders in the GRP coverage area. The GRP coverage area in Idaho covers these counties: Ada, Payette, Canyon, Elmore, Owyhee, Gooding and Twin Falls.

2.1 Physical Features

The Treasure Valley region is a valley located in southwestern Idaho. The valley is also known as the Lower Snake River Valley. The Payette, Boise, Weiser, Malheur, Owyhee, and Burnt rivers all drain into the Snake River. The Treasure Valley ecoregion is an unglaciated rolling valley that contains many canals and rivers. The elevation varies in the valley from 2,000 ft. to 2,800 ft. The valley is underlain by Quaternary alluvium, loess, lacustrine, and alluvial fan deposits. The soil has an aridic moisture regime, and most of Treasure Valley was once a sagebrush grassland but since has been converted to agriculture. The canals in this region take water from the Snake River for agricultural land and for municipalities. Crops in the region include sugar beets, wheat, alfalfa, onions, and potatoes.

2.2 Hydrology

The Treasure Valley lies within the Snake River Plain, "an arcuate topographic and structural depression that extends across southern Idaho. Geology and hydrology of [the] eastern and western parts of the Snake River Plain are distinctly different; the west is predominantly sedimentary rocks, and the east is predominantly volcanic rocks" (Newton, 1991, p. G2). Prolific and unconnected aquifer systems underlie the two halves of the Snake River Plain; the eastern and western halves are separated by a hydrologic boundary in the area near King Hill. The main, natural surface-water features of the Treasure Valley are the Snake River to the south, the Boise River in the central valley, and the Payette River to the north. The availability of water for agriculture diverted from the Boise and Payette Rivers was the primary reason for settlement in the area; a complex network of reservoirs, irrigation canals, laterals, ditches, and drains was constructed to support this irrigation (Stacy, 1993).

Lake Lowell is the largest and deepest natural lake in the Treasure Valley, covering approximately 10,240 acres. At full pool, the lake can cover up to 94,794 acres (USFWS, 1953; Hoelscher, 1993). The lake has more than 175 miles of shoreline and has a mean and maximum depth of 538 ft and 1,151 ft, respectively (Rieman and Falter, 1976). An estimated 95% of the lake's volume is held in the large, southern-most basin, a glacially influenced portion of the Purcell Trench (Savage, 1965) with a mean depth of 715 ft.

2.3 Climate

Continental and marine weather patterns influence climatic conditions in the Treasure Valley. Winter storms pass over the area from November through March causing a noticeably wet climate. Mid-winter storms periodically bring warm air masses resulting in rain-on-snow events at middle elevations ranging between 2,500 and 4,500 ft above msl. Summer storms generally pass farther north, resulting in relatively

Treasure Valley Geographic Response Plan

dry seasonal conditions. Winds vary seasonally across the Treasure Valley with wind direction predominantly originating from the west from March to November, and otherwise originating from the east.

Average monthly temperatures in the area range from 30 to 78°F. Precipitation varies widely throughout the year. November is the wettest month with an average total accumulation of 1.5 inches, while August is the driest with an average total accumulation of 0.2 inches (Weatherspark, 2017). Precipitation falls mainly as rain in the winter months; however, snow is most likely to occur during this period. The densest snow fall period is the 31 days surrounding December 28, where average total liquid-equivalent accumulations equal 0.3 inches.

The climate in the Treasure Valley is generally sub-humid characterized by warm, dry summers and cold, wetter winters. Annual precipitation in the Treasure Valley ranges from under 10 to 30 inches and the most precipitation is received in the mountains in the northeastern part of the valley. The southern part of the valley receives the least. The driest months for the Treasure Valley are normally July, August, and September and correspond to the height of the wildland fire season for southern Idaho. Some rainfall normally occurs during these months, but extended dry periods can occur.

Over the course of the year, typical wind speeds vary from 0 to 10 miles per hour (mph) (calm to moderate breeze), rarely exceeding 12 mph (moderate breeze). The highest average wind speed of 6.9 mph (light breeze) occurs around early April, at which time the average daily maximum wind speed is 7.5 mph (light breeze). The lowest average wind speed of 6.3 mph (light breeze) occurs around mid-to late September, at which time the average daily maximum wind speed is 8 mph (gentle breeze) (Weatherspark, 2017).

The wind in Boise is most often out of the west from March to November. Between November to February, the wind is most often out of the east. (Figure 2-3). The wind is least often out of the south (Weatherspark, 2017).



Figure 2-1: Boise, Idaho, Wind Directions over the Entire Year

Note: The percentage of hours in which the mean wind direction is from each of the four cardinal wind directions, excluding hours in which the mean wind speed is less than 1.0 mph. The lightly tinted areas at the boundaries are the percentage of hours spent in the implied intermediate directions (northeast, southeast, southwest, and northwest). (Weatherspark, 2017)

2.4 Risk Assessment

The Treasure Valley region is plentiful in natural, cultural, and economic resources, all of which are at risk of injury from petroleum spills. Potential petroleum spills in this area could be result of accidents from either highway transport, railroad transport, or from transmission pipelines. The highest risk situations are when any of the above scenarios occurs at a body of water. The rivers in Idaho are popular for recreation resources in the state and are heavily used for recreational fishing, rafting, angling, hunting and camping. Spills on the river could have adverse effects on aquatic and riparian life. Idaho has many fish hatcheries and water intakes in the lower snake valley that could be harmed from a petroleum spill in this region.

Section 3: Figures

16

Treasure Valley Boom Site Map

Boom Sites within Treasure Valley and Magic Valley of Idaho

Salmon River Mountains

Idaho

Legend

100 m

Boom Sites

Cassia Road

Duck Alley Diversion Dam Middleton Rd Bridge West Chicago Street Bridge Davis Lane Franklin Blvd Bridge South Cloverdale Bridge Crossing

> 6th Street South Canal Head Gate Canal Crossing Point ES2 CJ_Strike Reservoir Old Highway 51 Bridge Bells Rapids Road Bridge BS2 Bells Rapids Road Bridge - Site 2 BS1 200 Grandview Dr. Keith Sligar Bridge Pumpland Bridge

Google Earth

Image Landsat / Copernicus

© 2018 Google

Treasure Valley Boom Site Map with Exit Numbers

Boom Sites within Treasure Valley and Magic Valley of Idaho

Legend

3

Boom Sites & Exit Numbers

20

I-84 Exit 17

Duck Alley Diversion Dam Middleton Rd Bridge I-84 Exit 44 South Cloverdale Bridge Crossing S Eagle Road Bridge

> I-84 Exit 95 6th Street South Canal Crossing Point

Bliss Dam BS2 CJ Strike Reservoir Old Highway 51 Bridge

> Bells Rapids Road Bridge BS2 Bells Rapids Road Bridge - Site 2 I-84 Exit 173 Keith Sligar Bridge E 3400 N

Google Earth

Image Landsat / Copernicus

© 2018 Google



Petroleum Infrastructure Overview Refineries: 0 (0% total U.S.) Terminals: 11 (1% total U.S.) Crude Pipelines: 0 Miles (0% total U.S.) Product Pipelines: 2,400 Miles (<1% total U.S.) Bio-Refineries (Ethanol): 2 (1% total U.S.)



CANADA









Morley Nelsaon Snake River Birds of Prey National













End Spill Trajectory: Brownlee Dam 152.45 Miles, approximately 33 hours from initial spill time.

Adams

Brownlee Dam has a sub-surface spillway. As a result, spill is expected to remain South of the Brownlee Dam through the 48 hour timeline.

71

Payette National Forest



Spill Trajectory: 9.2 miles at approximately 2 hours.

Fruitland Central Delivery Point

10th Av



Spill Trajectory: 55.2 miles at approximately 12 hours.





End Spill Trajectory: Brownlee Dam 83 Miles, approximately 18 hours from initial spill time.

Adams

71

Payette National Forest

Section 4: General Protection/Collection Strategies

4. General Protection/Collection Strategies

4.1 Chapter Overview

This chapter details specific response strategies and the natural resources requiring protection, as outlined by participants of the GRP workshops for the Treasure Valley / Lower Snake River system. Other pertinent information necessary for proper implementation of scenarios is found in **Chapters 5** and **6**, including wildlife areas, economic areas, sensitive aquatic areas and flight restriction zones that may be implemented by the on-scene coordinator (OSC), if necessary.

4.1.1 Maps

The maps in this chapter provide information on specific locations of strategy points. They are designed to help the responder visualize response strategies in relation to valuable wildlife zones, economic areas, and sensitive aquatic areas. Maps under development will be added as they are completed and placed in their respective subject matter areas. For a complete list of all maps contained in this GRP, refer to the **Table of Contents**.

Booming Strategies and Resources Protected tables provide information to support strategy implementation at each designated location, including strategy type, and site access.

Scenario Response Priority Strategies details the order in which strategies will be implemented based on various local scenarios.

Response Strategy Table describes response strategy details, indicates the purpose of the strategy, and lists special considerations that may be needed to carry out the strategies.

4.1.2 Major Protection Techniques

The response strategies fall into one of three major techniques that may be utilized either individually or in combination. The strategies listed in **Section 4-2** are based on one or more of the following techniques:

Dispersants

Chemical dispersants can be used to break up slicks on the water. Dispersants can decrease the severity of a spill by speeding the dissipation of certain oil types. Their use will require approval of the Unified Command. Dispersants will only be used in offshore situations under certain conditions, until the Area Committee makes further determinations and publishes them in the Northwest Area Contingency Plan (http://www.rrt10nwac.com/nwacp_document.htm). As a result, no dispersant use should be contemplated during spill response in the Treasure Valley of Idaho.

In-Situ Burning

If possible, an oil slick may be set on fire. Burning must be authorized by the Unified Command, who confers with state and local air and water quality authorities. This option is often preferable to

Treasure Valley Geographic Response Plan 33

allowing a slick to reach the shore. This method works on many types of oil, and requires special equipment, including a fire boom and ignitors. In-situ burning will only be allowed when consistent with the Northwest Area Contingency Plan's In-Situ Burning Policy and Guidelines.

Mechanical Recovery Strategies

If a spill is too close to the shore for in-situ burning or dispersants, the key strategies are to use **deflection**, **diversion**, or **exclusion** booming to contain the slick and prevent it from entering areas with sensitive wildlife and fisheries resources. Booming strategies are described in detail in **Appendix A**.

4.2 Strategy Locations and Descriptions

The following response strategies and locations are organized by highway mile (strategy map), and description (strategy table). The exit numbers on maps represent Interstate 84 designations, derived via Google.

Table 4.1 – Booming Strategies, Staging Areas, and Boat Launches

						Strategy Type		Onsite Resources				
I-84 Exit Number	Location Description	Site Type	Site Specific Notification	Lattitude / Longitude	Adjacent Receiving Waterbody	Collection and Recovery	Boat Launch	Staging	Boom Length Recommended (feet)	Jet Boat Required to Implement?	Large Staging Onsite?	Site-Specific Notification Information and/or Strategy Implementation Notes
Exit 17	Black Canyon Canal New Plymouth, Idaho – Boom Site 1 – Cassia Road	Boom and Boat Launch	USBR Area Office Manager (208) 383-2248	43.878372, -116.754938	Black Canyon Canal	x		x	1000	YES	Small	Black Canyon Canal flow direction is to the south. Deploy a cascade oil spill deployment system with containment boom. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 25	Boise River – Boom Site 2 – South Middleton Road Bridge	Boom Launch	Idaho Power Company (208) 388- 2323, USBR Area Office Manager (208) 383-2248, Boise Project Board of Control (208) 344-1141	43.696585, -116.612827	Boise River	x		x	1000	NO	Large	Boise River flow direction is to the west. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the river from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the river. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24- hour operation.
Exit 27	Boise River – Boom Site 1 – West Chicago Street Bridge	Boom Launch	Idaho Power Company (208) 388- 2323, USBR Area Office Manager (208) 383-2248, Boise Project Board of Control (208) 344-1141	43.67808, -116.69877	Boise River	x		x	1000	NO	Large	Boise River flow direction is to the west. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the river from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the river. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 35	Phyllis Canal – Boom Site 2 – Davis Lane	Boom Launch	Pioneer Irrigation District controls flow to the Phyllis Canal and can be reached at (208) 459- 3617. Idaho Power Company (208) 388-2323, USBR Area Office Manager (208) 383-2248, Boise Project Board of Control (208) 344-1141,	43.58149, -116.58549	Phyllis Canal	x		x	1000	NO	Large	Phyllis Canal flow direction is to the south. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 36	Phyllis Canal – Boom Site 1 – Franklin Blvd. Bridge	Boom Launch	Pioneer Irrigation District controls flow to the Phyllis Canal and can be reached at (208) 459- 3617. Idaho Power Company (208) 388-2323, USBR Area Office Manager (208) 383-2248, Boise Project Board of Control (208) 344-1141,	43.59739, -116.55320	Phyllis Canal	x		x	1000	NO	Small	Phyllis Canal flow direction is to the south. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 42	South Channel Boise River – Oil Recovery Site – Duck Alley Diversion Dam	Collection & Recovery. Shoreline Protection.	Pioneer Irrigation District controls flow to the Phyllis Canal and can be reached at (208) 459- 3617. Idaho Power Company (208) 388-2323, USBR Area Office Manager (208) 383-2248, Boise Project Board of Control (208) 344-1141,	43.67412, -116.40794	South Channel Boise River	x		x	1000	NO	Large	South Channel Boise River flow direction is to the west. This diversion dam creates a path for oil to go down the Phyllis Canal and not the South Channel Boise River. In the event of a release at the crossing, it is doubtful that notification would give the authorities the time to shut off the flow to the canal. Oil will be in the canal traveling at the flow rates of 1-3 MPH until the flow on the canal can be shut off. One crew should proceed directly to the recovery site at Duck Alley with a drum skimmer and a vacuum truck for collection of oil from the diversion dam. Once the canal has been shut off, this location will be a key collection point. Booming Crew should proceed to Boom Site 1. It is imperative that the flow to the canal be stopped and communicated to the booming crews.
Exit 44	New York Canal – Boom Site 2 – S. Eagle Road	Boom and Boat Launch	Contact USBR to shut water off at canal immediately, (208) 383- 2248, Idaho Power Company (208) 388-2323, USBR Area Office Manager (208) 383-2248, Boise Project Board of Control (208) 344-1141	43.48635, -116.35439	New York Canal	x		x	1000	YES	Large	New York Canal flow direction is to the south and forks with Mora Canal. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. An exclusionary boom deployment system will be utilized to prevent any oil from migrating into the diversion canals. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation. Closest diversions are: Folsom Lateral, Rnudson Lateral, Ten Mile Feeder Canal, Wood Lateral, Boiler Lateral, Paris Lateral, Moore Lateral, Rawson Canal, Hubbard Reservoir Canal, Mason Creek Feeder, and Kuna Canal.
Exit 67	New York Canal – Boom Site 1 - South Cloverdale Bridge	Boom and Boat Launch	Contact USBR to shut water off at canal immediately, (208) 383- 2248, Idaho Power Company (208) 388-2323, USBR Area Office Manager (208) 383-2248, Boise Project Board of Control (208) 344-1142	43.50779, -116.33448	New York Canal	x		x	1000	YES	Small	New York Canal flow direction is to the west. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. The secondary oil spill deployment systems should also be secured with permanent anchors that have been established at approximately 20-25 degrees into the canal current on both sides o the New York Canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24 hour operation. Closest diversions are: Folsom Lateral, Knudson Lateral, Ten Mile Feeder Canal, Wood Lateral, Boiler Lateral, Paris Lateral, Moore Lateral, Rawson Canal, Hubbard Reservoir Canal, Mason Creek Feeder, and Kuna Canal.

		Site Type	Site Specific Notification	Lattitude / Longitude			Strateg		Onsite Re		Sources	
I-84 Exit Number	Location Description				Adjacent Receiving Waterbody	Collection and Recovery	Boat Launch	Staging	Boom Length Recommended (feet)	Jet Boat Required to Implement?	Large Staging Onsite	Site-Specific Notification Information and/or Strategy Implementation Notes
Exit 95	Mountain Home Station – Boom Site 1 – 6th Street South	Boom Launch	Trustee/Contact Numbers/Information: Mountain Home Irrigation (208) 587-4334 - BLM (208) 384-3300	43.12669, -115.674998	Miller Canal	x		x	500	NO	Small	The Miller Canal flow direction is to the west. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. (It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 95	Mountain Home Station – Boom Site 2 – Canal Head Gate	Boom Launch	Trustee/Contact Numbers/Information: Mountain Home Irrigation (208) 587-4334 - BLM (208) 384-3300	43.12045, -115.665514	East Side Canal	x		x	500	NO	Small	The East Side Canal flow direction is to the south. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. (It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 95	Mountain Home Station – Boom Site 3 – Canal Crossing Point	Boom Launch	Trustee/Contact Numbers/Information: Mountain Home Irrigation (208) 587-4334 - BLM (208) 384-3300	43.126992,-115.66693	East Side Canal	x		x	500	NO	Small	The East Side Canal flow direction is to the south. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. (It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 95	Snake River Glens Ferry – Boom Site 1 – Old Highway 51 Bridge	Boom and Boat Launch	ldaho Power Company (208) 388- 2323, USBR Area Office Manager (208) 383-2248, Boise Project Board of Control (208) 344-1141	Boom Site: 42.93724, -115.74917 Boat Launch: 42.94421, -115.74051	Snake River	x	x	x	2000 - 2500	YES	Large	Snake River flow direction is to the west. Deploy a cascade oil spill deployment system with containment boom. An exclusionary boom deployment system will be utilized to prevent oil from migrating into the diversion canals. A secondary boom deployment will be placed down river from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the river. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 137	Snake River – Boom Site 2 – Bliss Dam	Boom and Boat Launch	Contact USBR to shut water off at canal immediately, (208) 383- 2248, Idaho Power Company (208) 388-2323, USBR Area Office Manager (208) 383-2248, Boise Project Board of Control (208) 344-1141, Twin Falls Canal Company: (208) 733-6731	Boom Site: 42.91394, -115.06260 Boat Launch: 42.91394, -115.06260	Snake River	x	x	x	2000 - 2500	YES	Large	Snake River flow direction is to the west. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed downriver from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the river. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 155	Snake River – Boom Site 1 – Bell Rapids Road, Owsley Bridge	Boom Launch	ldaho Power Company (208) 388- 2323, USBR Area Office Manager (208) 383-2248, Boise Project Board of Control (208) 344-1141	Boom Site: 42.76323, -114.88874 Boat Launch: 42.76323, -114.88874	Snake River	x	x	x	2500	YES	Large	Snake River flow direction is to the west. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed downriver from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the river. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 173	Rock Creek – Boom Site 1 – Rock Creek Sligar Memorial Bridge	Boom Launch	Idaho Power Company (208) 388- 2323 USBR Area Office Manager (208) 383-2248, Boise Project Board of Control (208) 344-1141, Twin Falls Canal Company: (208) 733- 6731, Twin Falls County Parks and Waterways Emergency Phone Number 208-933-2530.	42.56712, -114.50399	Rock Creek	x		x	2500	NO	Large	Rock Creek flow direction is to the North. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the river from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the river. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 182	The Main Canal, High Line Canal, Low Line Canal – Boom Site 3 – Low Line Canal	Boom Launch	Twin Falls Canal Company (208) 733-6731	43.59739, -116.55320	Low Line Canal	x		x	1000	NO	Large	The Low Line Canal flow direction is to the West. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 182	The Main Canal, High Line Canal, Low Line Canal – Boom Site 2 – Pumpland Bridge	Boom Launch	Twin Falls Canal Company (208) 733-6731	42.461023, -114.3036	High Line Canal	x		x	1000	NO	Large	The High Line Canal flow direction is to the South. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Exit 182	The Main Canal, High Line Canal, Low Line Canal – Boom Site 1 - Rock Creek Road Diversion Dam	Boom Launch	Twin Falls Canal Company (208) 733-6731	42,496304,-114.301946	Main Canal	x		x	1000	YES	Large	The Main Canal flow direction is to the South. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24- hour operation.

Treasure Valley Geographic Response Plan
Section 4.3: Strategy Reports

The Main Canal, High Line Canal, Low Line Canal – Boom Site 1 - Rock Creek Road Diversion Dam

Site Lat Long:	42.496304, -114.301946		
Strategy Objective:	Boom launch. Notification and collection & recovery. A cascade boom deployment system is utilized as the primary boom deployment. Shoreline protection boom as added containment and recovery.		
Implementation:	The Main Canal flow direction is to the South. Deploy a cascade petroleum spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.		
Site Safety Note:	Diversion Dam is a drowning hazard.		
Staging Area:	On site staging is large. Large gravel parking area.		
Field Notes:	4WD Access: NO Low Water Only: NO Locked Gate: NO Overhead Utilities: YES Boat Needed: NO		
Resources Targeted:	None		
Watercourse:	The Main Canal: gradient is flat; substrate is soil; approx. width is 40 ft.; approx. depth is 4 to 6 feet; flow velocity is 5 MPH in Summer, 1 to 3 MPH during Winter (November to March)		



Suggested Equipment		
Quantity	Description	
1000 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top	
	Tension Cable)	
As Appropriate	Vacuum Truck; Portable Skimmer; Absorbent Boom	
10,000 ft.	3/8" Polypropylene Line	
600 ft	¼" Polypropylene Line (Ferry Line)	
40	Towing Bridles	
50	Steel Post Anchors	
As Appropriate	Post pounder, shovels, knife, wood saw	
As Appropriate	PFD work vests/rubber boots	
As Appropriate	Throw bags, first aid kit	
Jet boat/raft needed for strategy implementation? NO		
Suggested Personnel (8-10 People)		
Quantity Des	cription	
8-10 S	wiftwater Tech	

The Main Canal, High Line Canal, Low Line Canal – Boom Site 1 - Rock Creek Road Diversion Dam





Boom Site 1 – Rock Creek Road Diversion Dam.

Site Specific Contact

Trustee/Contact Numbers/Information: Twin Falls Canal Company (208) 733-6731

Directions to Site

From I -84

- 1. Take exit 182 for ID-50 toward Eden/Kimberly 0.3 mi
- 2. Turn right onto ID-50 S 0.2 mi
- 3. Continue straight to stay on ID-50 S 1.1 mi
- 4. Turn left onto N 3800 E/Rock Creek Rd 4.5 mi
- 5. Turn left, destination will be on the right 0.2 mi

Boom Site 1 – Rock Creek Road Diversion Dam

The Main Canal, High Line Canal, Low Line Canal – Boom Site 2 – Pumpland Bridge

Site Lat Long:	<u>42.461023, -114.3036</u>	
Strategy Objective:	Boom launch. Notification and collection & recovery. A cascade boom deployment system is utilized as the primary boom deployment. Shoreline protection boom as added containment and recovery.	
Implementation:	The High Line Canal flow direction is to the South. Deploy a cascade petroleum spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.	
Site Safety Note:	Steep Sides and Swift Water	
Staging Area:	Use the Fire Department Lot west of the Canal	
Field Notes:	4WD Access: NO Low Water Only: NO Locked Gate: NO Overhead Utilities: YES Boat Needed: NO	
Resources Targeted:	None	
Watercourse:	The High Line Canal: gradient is flat; substrate is soil; approx. width is 40 ft.; approx. depth is 4 to 6 feet; flow velocity is 5 MPH in	



Suggested Equipment		
Quantity	Description	
1000 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top Tension Cable)	
As Appropriate	Vacuum Truck; Portable Skimmer; Absorbent Boom	
10,000 ft.	3/8" Polypropylene Line	
600 ft	¼" Polypropylene Line (Ferry Line)	
40	Towing Bridles	
50	Steel Post Anchors	
As Appropriat	e Post pounder, shovels, knife, wood saw	
As Appropriat	e PFD work vests/rubber boots	
As Appropriat	e Throw bags, first aid kit	
Jet boat/raft needed for strategy implementation? NO		
Suggested Personnel (8-10 People)		
Quantity	Description	
8-10	Swiftwater Tech	

The Main Canal, High Line Canal, Low Line Canal – Boom Site 2 – Pumpland Bridge



Boom Site 2 – Pumpland Bridge

Site Specific Contact

Trustee/Contact Numbers/Information: Twin Falls Canal Company (208) 733-6731



Directions to Site

From I-84

- 1. Take exit 182 for ID-50 toward Eden/Kimberly 0.3 mi
- 2. Turn right onto ID-50 S. 1.1 mi
- 3. Turn left onto N 3800 E./Rock Creek Rd. 6.8 mi
- 4. Turn left onto E. 3200 N/Pumpland Rd., destination will be on the left 400 ft.

Boom Site 2 – Pumpland Bridge

The Main Canal, High Line Canal, Low Line Canal – Boom Site 3 – Low Line Canal

Site Lat Long:	42.490114, -114.318913		
Strategy Objective:	Boom launch. Notification and collection & recovery. A cascade boom deployment system is utilized as the primary boom deployment. Shoreline protection boom as added containment and recovery.		
Implementation:	The Low Line Canal flow direction is to the West. Deploy a cascade petroleum spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.		
Site Safety Note:	Drowning Hazard at Headworks		
Staging Area:	On site staging is large.		
Field Notes:	4WD Access: NO Low Water Only: NO Locked Gate: NO Overhead Utilities: YES Boat Needed: NO		
Resources Targeted:	None		
Watercourse:	The Low Line Canal: gradient is flat; substrate is soil; approx. width is 40 ft.; approx. depth is 4 to 6 feet; flow velocity is 5 MPH in Summer, 1 to 3 MPH during Winter (November to March)		



Suggested Equipment		
Quantity	Description	
1000 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top Tension Cable)	
As Appropriat	e Vacuum Truck; Portable Skimmer; Absorbent Boom	
10,000 ft.	3/8" Polypropylene Line	
600 ft	¼" Polypropylene Line (Ferry Line)	
40	Towing Bridles	
50	Steel Post Anchors	
As Appropriat	e Post pounder, shovels, knife, wood saw	
As Appropriat	e PFD work vests/rubber boots	
As Appropriat	e Throw bags, first aid kit	
Jet boat/raft needed for strategy implementation? NO		
Suggested Personnel (8-10 People)		
Quantity [Description	
8-10	Swiftwater Tech	

The Main Canal, High Line Canal, Low Line Canal – Boom Site 3 – Low Line Canal



Boom Site 3 – E 3400 N

Site Specific Contact

Trustee/Contact Numbers/Information: Twin Falls Canal Company (208) 733-6731



Directions to Site

From I-84

- 1. Take exit 182 for ID-50 toward Eden/Kimberly 0.3 mi
- 2. Turn right onto ID-50 S. -0.2 mi
- 3. Continue straight to stay on ID-50 S. -1.1 mi
- 4. Turn left onto N 3800 E./Rock Creek Rd. 4.8 mi
- 5. Turn right onto E. 3400 N., destination will be on the right -0.7 mi

Boom Site 3 – E 3400 N

Rock Creek – Boom Site 1 – Rock Creek Sligar Memorial Bridge

Site Lat Long:	<u>42.56712, -114.50399</u>	
Strategy Objective:	Boom launch. Notification and collection & recovery. A cascade boom deployment system is utilized as the primary boom	
	deployment. Shoreline protection boom as added containment and recovery.	
Implementation:	Rock Creek flow direction is to the North. Deploy a cascade petroleum spill deployment system with containment boom. A secondary boom deployment will be placed down the river from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the river. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is	
	suggested that portable light standards are brought to the recovery sites for 24-hour operation.	
Site Safety Note:	Seasonal High Water.	
Staging Area:	Large paved staging area onsite.	
Field Notes:	4WD Access: NO Low Water Only: YES Locked Gate: YES (Twin Falls County Parks and Waterways Emergency Phone Number 208-933-2530) Overhead Utilities: YES Boat Needed: NO Park Hours – April 1st to October 31st, 7am to 10 pm. November 1st – March 31st, 8am – 6pm.	
Resources Targeted:	Twin Falls	
Watercourse:	Rock Creek: gradient is flat; substrate is soil; approx. width is 15 ft.; approx. depth is 1 to 3 feet; 6 to 8 MPH in Summer, 3 to 5 MPH during Winter (November to March)	



Suggested Equipment		
Quantity	Description	
2500 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top	
	Tension Cable)	
As Appropriat	e Vacuum Truck; Portable Skimmer; Absorbent Boom	
10,000 ft.	3/8" Polypropylene Line	
600 ft	¼" Polypropylene Line (Ferry Line)	
0	Water Anchor	
4	Steel Post Anchors	
1	Bolt Cutters	
As Appropriat	e Post pounder, shovels, knife, wood saw	
As Appropriat	e PFD work vests/rubber boots	
As Appropriat	e Throw bags, first aid kit	
Jet boat/raft needed for strategy implementation? NO		
Suggested Personnel (6-8 People)		
Quantity D	Description	
6-8	Swiftwater Tech	

Rock Creek – Boom Site 1 – Rock Creek Sligar Memorial Bridge





Boom Site 1 – Sligar Memorial Bridge

Site Specific Contact

Trustee/Contact Numbers/Information: Idaho Power Company (208) 388-2323 USBR Area Office Manager (208) 383-2248 Boise Project Board of Control (208) 344-1141 Twin Falls Canal Company: (208) 733-6731 Twin Falls County Parks and Waterways Emergency Phone Number 208-933-2530.

Directions to Site

From I-84

Take exit 173 for US-93 toward Twin Falls/Sun Valley – 0.9 mi
 Turn left onto US-93 S. – 3.9 mi
 Turn right onto US-93 S./4100 N. – 1.0 mi
 Use the left 2 lanes to turn left onto N 2900 E./Washington St. N. – 2.0 mi
 Turn right onto US-30 W./US-93 BUS
 S./Addison Ave W. – 1.2 mi
 Turn right – 0.3 mi
 Boom Site 1 – Sligar Memorial Bridge at Rock Creek Park

Shake Mivel Ba	Som Site 1 Den Rapids Road, Owsley Druge	1 04 LAR 199	
Site Lat Long:	Boom Site: <u>42.76323, -114.88874</u> Boat Launch: <u>42.76323, -114.88874</u>		
Strategy Objective:	Boom and boat launch. Notification and collection & recovery. A cascade boom deployment system is utilized as the primary boom deployment. Shoreline protection boom as added containment and recovery.		
Implementation:	Snake River flow direction is to the west. Deploy a cascade petroleum spill deployment system with containment boom. A secondary boom deployment will be placed downriver from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the river. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.		
Site Safety Note:	Headworks is a drowning hazard		
Staging Area:	Large Staging Area.		
Field Notes:	4WD Access: NOLow Water Only: NOLocked Gate: NOOverhead Utilities: YESBoa	at Needed : YES	
Resources Targeted:	Hagerman City		
Watercourse:	Snake River: gradient is flat; substrate is soil; approx. width is 600 ft.; approx. depth is 20 feet; flow veloc Summer, 10 to 15 MPH in Winter (November to March)	city is 10 to 15 MPH in	

Boll Papids Poad Owslow Bridge



Suggested Equipment		
Quantity		Description
2500 ft		10" Containment Boom (4" Floatation x 6" Skirt with Top
		Tension Cable)
As Appropria	ite	Vacuum Truck; Portable Skimmer; Absorbent Boom
100 ft		Towing Bridles
20,000 ft		3/8" Polypropylene Line
600 ft		¼" Polypropylene Line (Ferry Line)
3		Danforth Anchor
70		Steel Post Anchors
As Appropriate		Post pounder, shovels, knife, wood saw
As Appropriate		PFD work vests/rubber boots
As Appropriate		Throw bags, first aid kit
Jet boat/raft needed for strategy implementation? YES		
Suggested Personnel (25 people)		
Quantity	Desc	ription
2	Во	at Operator
23 Sw		iftwater Tech

I_84 Evit 155

Visited on 2019-06-27.

Spake Pive

D

Snake River – Boom Site 1 – Bell Rapids Road, Owsley Bridge





Boom Site 1 - Bell Rapids Road, Owsley Bridge

Site Specific Contact

Trustee/Contact Numbers/Information: Idaho Power Company (208) 388-2323 USBR Area Office Manager (208) 383-2248 Boise Project Board of Control (208) 344-1141 Twin Falls Canal Company: (208) 733-6731

Directions to Site

From I-84

- 1. Take Exit 137 towards Bliss/Pioneer Rd 0.4 mi
- 2. Turn right onto E. 2950 S./Hagerman Rd./Wendell Hagerman Rd..
- 4.8 mi
- 3. Merge onto E. 2900 S. 3.7 mi
- 4. Turn left onto US-30 E. 2.4 mi
- 5. Turn right onto Bell Rapids Rd., Destination will be on the right. 1.0 mi Boom Site 1: Bell Rapids Road Bridge

Site Lat Long:	Boom Site: <u>42.91394, -115.06260</u> Boat Launch: <u>42.91394, -115.06260</u>		
Strategy Objective:	Boom and boat launch. Notification and collection & recovery. At high water flow levels, a cascade boom deployment		
	system is utilized as the primary boom deployment. Shoreline protection boom as added containment and recovery.		
Implementation:	Snake River flow direction is to the west. Deploy a cascade petroleum spill deployment system with containment		
	boom. A secondary boom deployment will be placed downriver from the cascade boom deployment system.		
	Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill		
	containment boom should be placed on each side of the river. Recovery of spilled petroleum products can be		
	achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to		
	the recovery sites for 24-hour operation.		
Site Safety Note:	Dam Undertow		
Staging Area:	On site staging is large.		
Field Notes:	4WD Access: WINTER ONLY		
	Low Water Only: NO Locked Gate: NO Overhead Utilities: NO Boat Needed: YES		
Resources Targeted:	None		
Watercourse:	Snake River: gradient is flat; substrate is soil; approx. width is 325 ft.; approx. depth is 75-100 feet; flow velocity is 10 to		
	15 MPH in Summer, 10 to 15 MPH in Winter (November to March)		



Suggested Equipment		
Quantity	Description	
2500 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top	
	Tension Cable)	
As Appropriate	Vacuum Truck; Portable Skimmer; Absorbent Boom	
100 ft	Towing Bridles	
20,000 ft.	3/8" Polypropylene Line	
600 ft	¼" Polypropylene Line (Ferry Line)	
3	Danforth Anchor	
70	Steel Post Anchors	
As Appropriate	Post pounder, shovels, knife, wood saw	
As Appropriate	PFD work vests/rubber boots	
As Appropriate	Throw bags, first aid kit	
Jet boat/raft needed for strategy implementation? YES		
Suggested Personnel (25 People)		
Quantity De	escription	
2	Boat Operator	
23	Swiftwater Tech	

Snake River – Boom Site 2 – Bliss Dam





Boom Site 2 – Bliss Dam

Site Specific Contact

Contact USBR to shut water off at canal immediately, (208) 383-2248

Trustee/Contact Numbers/Information: Idaho Power Company (208) 388-2323 USBR Area Office Manager (208) 383-2248 Boise Project Board of Control (208) 344-1141 Twin Falls Canal Company: (208) 733-6731

Directions to Site

From I-84

- 1. Take Exit 137 towards Bliss/Pioneer Rd 0.4 mi
- 2. Turn right onto US-26W/US-30W 154 ft.
- 3. Keep right to continue on Old US-30 5.3 mi
- 4. Turn left onto Idaho Power Rd. 2.9 mi
- 5. Continue onto Power Plant Rd. 1.4 mi
- 6. Slight left 0.2 mi
- 7. Continue Straight 190 ft.

Boom Site 2: Bliss Dam

Mountain Home Station – Boom Site 1 – 6th Street South

I-OT LAIL JJ	ŀ	·84	Exit	95
--------------	---	-----	------	----

Site Lat Long:	<u>43.12669, -115.674998</u>		
Strategy Objective:	Boom launch. Notification and collection & recovery. A cascade boom deployment system is utilized as the primary boom		
Implementation:	The Miller Canal flow direction is to the east. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. (It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.		
Site Safety Note:	None		
Staging Area:	On site staging is small and is located on the side of the road.		
Field Notes:	4WD Access: NO Low Water Only: NO Locked Gate: NO Overhead Utilities: YES Boat Needed: NO		
Resources Targeted:	Downstream Habitat		
Watercourse:	The Miller Canal: gradient is low; substrate is dirt; approx. width is 10 ft.; approx. depth is 5-6 feet; 1 to 2 MPH in Summer, 1 to 2 MPH in Winter (November to March)		



Suggested Equipment				
Suggesteu Lyun				
Quantity	Description			
500 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top			
	Tension Cable)			
As Appropriate	Vacuum Truck; Portable Skimmer; Absorbent Boom			
5,000 ft.	3/8" Polypropylene Line			
600 ft	1/4" Polypropylene Line (Ferry Line)			
0	Water Anchor			
4	Steel Post Anchors			
As Appropriate	Post pounder, shovels, knife, wood saw			
As Appropriate	PFD work vests/rubber boots			
As Appropriate	Throw bags, first aid kit			
Jet boat/raft needed for strategy implementation? NO				
Suggested Personnel (6-8 People)				
Quantity	Description			
6-8	Swiftwater Tech			

Mountain Home Station – Boom Site 1 – 6th Street South





Site Specific Contact

Trustee/Contact Numbers/Information: Mountain Home Irrigation (208) 587-4334 BLM (208) 384-3300



Directions to Site

From I-84

- 1. Take Exit 95 for US-20 N toward Mountain Home/Fairfield 0.3 mi
- 2. Slight right onto ID-51 S. 0.8 mi
- 3. Turn left onto N. 18^{th} E. -0.5 mi
- 4. Turn left onto E 6^{th} S. St. -0.1 mi

Boom Site 1 - 6th Street South

Mountain Home Station – Boom Site 2 – Canal Head Gate

Site Lat Long:	43.12045, -115.665514
Strategy Objective:	Boom launch. Notification and collection & recovery. A cascade boom deployment system is utilized as the primary boom deployment. Shoreline protection boom as added containment and recovery.
Implementation:	The East Side Canal flow direction is to the north. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. (It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Site Safety Note:	None
Staging Area:	On site staging is small and is located on the side of the road.
Field Notes:	4WD Access: NO Low Water Only: NO Locked Gate: NO Overhead Utilities: NO Boat Needed: NO
Resources Targeted:	Downstream Habitat
Watercourse:	East Side Canal: gradient is low; substrate is dirt; approx. width is 10 ft.; approx. depth is 5-6 feet; 1 to 2 MPH in Sumer, 1 to 2 MPH in Winter (November to March)



Suggested Equipment				
Quantity	Description			
500 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top			
	Tension Cable)			
As Appropriate	Vacuum Truck; Portable Skimmer; Absorbent Boom			
5,000 ft.	3/8" Polypropylene Line			
600 ft	4" Polypropylene Line (Ferry Line)			
0	Water Anchor			
4	Steel Post Anchors			
As Appropriate	Post pounder, shovels, knife, wood saw			
As Appropriate	PFD work vests/rubber boots			
As Appropriate Throw bags, first aid kit				
Jet boat/raft needed for strategy implementation? NO				
Suggested Personnel (6-8 People)				
Quantity Desc	ription			
6-8 Sw	/iftwater Tech			

Mountain Home Station – Boom Site 2 – Canal Head Gate



Canal Head Gate – Boom Site 2

Site Specific Contact

Trustee/Contact Numbers/Information: Mountain Home Irrigation (208) 587-4334 BLM (208) 384-3300



Directions to Site

From I-84

- 1. Take exit 95 for US-20 N toward Mountain Home/Fairfield 0.3 mi
- 2. Turn right onto ID-51 0.3 mi
- 3. Turn Left, destination will be on the right 1.1 mi

Boom Site 2 – Canal Head Gate

Mountain Home Station – Boom Site 3 – Canal Crossing Point

I-OT LAIL JJ	I-84	Exit	95
--------------	------	-------------	----

Site Lat Long:	43.126992, -115.66693		
Strategy Objective:	Boom launch. Notification and collection & recovery. A cascade boom deployment system is utilized as the primary boom deployment. Shoreline protection boom as added containment and recovery.		
Implementation:	The East Side Canal flow direction is to the north. Deploy a cascade oil spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the oil spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. (It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.		
Site Safety Note:	None		
Staging Area:	On site staging is small and is located on the side of the road.		
Field Notes:	4WD Access: NO Low Water Only: NO Locked Gate: NO Overhead Utilities: NO Boat Needed: NO		
Resources Targeted:	Downstream Habitat		
Watercourse:	East Side Canal: gradient is low; substrate is dirt; approx. width is 10 ft.; approx. depth is 5-6 feet; 1 to 2 MPH in Sumer, 1 to 2 MPH in Winter (November to March)		



Suggested E	Suggested Equipment				
Quantity	Description				
500 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top				
	Tension Cable)				
As Appropriat	e Vacuum Truck; Portable Skimmer; Absorbent Boom				
5,000 ft.	3/8" Polypropylene Line				
600 ft	¼" Polypropylene Line (Ferry Line)				
0	Water Anchor				
4	Steel Post Anchors				
As Appropriate	Post pounder, shovels, knife, wood saw				
As Appropriate	PFD work vests/rubber boots				
As Appropriate Throw bags, first aid kit					
Jet boat/raft needed for strategy implementation? NO					
Suggested Personnel (6-8 People)					
Quantity D	escription				
6-8	Swiftwater Tech				

Mountain Home Station – Boom Site 3 – Canal Crossing Point



Canal Crossing Point – Boom Site 3

Site Specific Contact

Trustee/Contact Numbers/Information: Mountain Home Irrigation (208) 587-4334 BLM (208) 384-3300



Directions to Site

From I-84

- 1. Take Exit 95 toward Hwy 20 E. -0.2 mi
- 2. Turn right onto ID-51 0.3 mi
- 3. Turn left, destination will be on the right -0.6 mi

Boom Site 3 – Canal Crossing Point

Snake River G	Glenns Ferry –	Boom S	Site 1 – (Old H	lighway	51 I	Bridge
----------------------	----------------	---------------	------------	-------	---------	------	--------

1-04 EXIL 33	1-8	34	Ex	cit	95
--------------	-----	----	----	-----	----

Site Lat Long:	Boom Site: <u>42.93724</u>	<u>, -115.74917</u> & Boat Laun	ch: <u>42.94421, -115.740</u>	<u>51</u>	
Strategy Objective:	Boom and boat laund	ch. Notification and colle	ction & recovery. A cas	cade boom deployment syste	m is utilized as the primary boom
	deployment. Shorelir	ne protection boom as ac	ded containment and	recovery.	
Implementation:	Snake River flow direction is to the west. Deploy a cascade petroleum spill deployment system with containment boom. An exclusionary				
	boom deployment system will be utilized to prevent petroleum products from migrating into the diversion canals. A secondary boom				
	deployment will be placed down river from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or				
	pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the river. Recovery of				
	spilled petroleum pro	oducts can be achieved b	y vacuum trucks and O	leophilic drum skimmers. It is	suggested that portable light
	standards are brough	nt to the recovery sites fo	or 24-hour operation.		
Site Safety Note:	None				
Staging Area:	On site staging is larg	ge.			
Field Notes:	4WD Access: NO	Low Water Only: NO	Locked Gate: NO	Overhead Utilities: YES	Boat Needed: YES
Resources Targeted:	None				
Watercourse:	Snake River: gradient	is flat; substrate is soil;	approx. width is 1000 f	t.; approx. depth is 20 feet; flo	ow velocity is 10 to 15 MPH in
	Summer, 10 to 15 MI	PH during Winter (Noven	nber to March)		



Suggested	Suggested Equipment					
Quantity		Description				
2000 - 2500 ft		0" Containment Boom (4" Floatation x 6" Skirt with Top				
		ension Cable)				
As Appropriat	te	Vacuum Truck; Portable Skimmer; Absorbent Boom				
100 ft		Towing Bridles				
20,000 ft.		3/8" Polypropylene Line				
600 ft		4" Polypropylene Line (Ferry Line)				
3		Danforth Anchor				
70		Steel Post Anchors				
As Appropriate		Post pounder, shovels, knife, wood saw				
As Appropriate		PFD work vests/rubber boots				
As Appropriate Throw bags, first aid kit						
Jet boat/raft needed for strategy implementation? YES						
Suggested Personnel (25 People)						
Quantity	Quantity Description					
2	Во	at Operator				
23	Swiftwater Tech					

Snake River Glenns Ferry – Boom Site 1 – Old Highway 51 Bridge



Boom Site 1 – Old Highway 51 Bridge

Site Specific Contact

Trustee/Contact Numbers/Information: Idaho Power Company (208) 388-2323 USBR Area Office Manager (208) 383-2248 Boise Project Board of Control (208) 344-1141



Directions to Site

From I-84 1. Take Exit 95 toward Hwy 20 W. – 0.4 mi 2. Turn left onto ID-51 S./Hwy 20 W. – 1.9 mi 3. Use any lane to turn left onto N Main St./Old U.S. 30 E. – 0.4 mi 4. Continue onto ID-51 S./W. 6th S. St./Airbase Rd. – 1.2 mi 5. Turn left onto ID-51S./S. 18th W. St. – 13.9 mi **Boom Site 1: Old Highway 51 Bridge**

Site Lat Long:	<u>43.50779, -116.33448</u>	
Strategy Objective:	Boom and boat launch. Notification and collection & recovery. At high water flow levels, a cascade boom deployment system is utilized	
	as the primary boom deployment. Shoreline protection boom as added containment and recovery.	
Implementation:	New York Canal flow direction is to the west. Deploy a cascade petroleum spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the canal. The secondary petroleum spill deployment systems should also be secured with permanent anchors that have been established at approximately 20-25 degrees into the canal current on both sides of the New York Canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24 hour operation. Closest diversions are: Folsom Lateral, Knudson Lateral, Ten Mile Feeder Canal, Wood Lateral, Boiler Lateral, Paris Lateral, Moore Lateral, Rawson Canal, Hubbard Reservoir Canal, Mason Creek Feeder, and Kuna Canal.	
Site Safety Note:	Diversion Dam drowning danger	
Staging Area:	On site staging is small. No boat launch, drag kingfisher boat into canal. Boat is required for safety	
Field Notes:	4WD Access: NOLow Water Only: NOLocked Gate: YES, but not consequential for staging.Overhead Utilities: YESBoat Needed: YES	
Resources Targeted:	None	
Watercourse:	New York Canal: gradient is flat with steep banks; substrate is soil; approx. width is 70 ft.; approx. depth is 6-8 feet; 3 to 6 MPH in Summer, No flow during Winter (November to March)	



Suggested Equipment		
Description		
10" Containment Boom (4" Floatation x 6" Skirt with Top		
Tension Cable)		
Vacuum Truck; Portable Skimmer; Absorbent Boom		
Towing Bridles		
3/8" Polypropylene Line		
¼" Polypropylene Line (Ferry Line)		
Danforth Anchor		
Steel Post Anchors		
Post pounder, shovels, knife, wood saw		
PFD work vests/rubber boots		
Throw bags, first aid kit		
Jet boat/raft needed for strategy implementation? YES		
nel (6-8 People)		
cription		
oat Operator		
wiftwater Tech		

Visited on 2019-06-27.

August 2019

New York Canal – Boom Site 1 - South Cloverdale Bridge



Boom Site 1 – South Cloverdale Bridge

Site Specific Contact

Contact USBR to shut water off at canal immediately, (208) 383-2248

Trustee/Contact Numbers/Information: Idaho Power Company (208) 388-2323 USBR Area Office Manager (208) 383-2248 Boise Project Board of Control (208) 344-1141



Directions to Site

From I-84

- 1. Take Exit 64 toward E. Blacks Creek Rd. -0.3 mi
- 2. Turn right onto E. Blacks Creek Rd. 0.3 mi
- 3. Continue onto Kuna-Mora Rd 12.7 mi
- 4. Turn right onto S. Cloverdale Rd. 3.4 mi

Boom Site 1: South Cloverdale Bridge

Treasure Valley Geographic Response Plan

Site Lat Long:	<u>43.48635, -116.35439</u>
Strategy Objective:	Boom and boat launch. Notification and collection & recovery. At high water flow levels, a cascade boom deployment system is utilized
	as the primary boom deployment. Shoreline protection boom as added containment and recovery.
Implementation:	New York Canal flow direction is to the south and forks with Mora Canal. Deploy a cascade petroleum spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. An exclusionary boom deployment system will be utilized to prevent any spill from migrating into the diversion canals. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation. Closest diversions are: Folsom Lateral, Knudson Lateral, Ten Mile Feeder Canal, Wood Lateral, Boiler Lateral, Paris Lateral, Moore Lateral, Rawson Canal, Hubbard Reservoir Canal, Mason Creek Feeder, and Kuna Canal.
Site Safety Note:	Headworks drowning danger.
Staging Area:	Large Staging Area, No boat launch, drag Kingfisher or John boat into canal. Boat is required for safety
Field Notes:	4WD Access: NO Low Water Only: NO Overhead Utilities: NO Boat Needed: YES
	Locked Gate: YES, NEED BOLT CUTTERS.
Resources Targeted:	None
Watercourse:	New York Canal: gradient is flat; substrate is soil; approx. width is 70 ft.; approx. depth is 6-8 feet; flow velocity is 3 to 6 MPH in Summer, No flow during Winter (November to March)



60

Suggested Equipment		
Quantity	Description	
1000 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top	
	Tension Cable)	
As Appropriate	Bolt Cutters	
As Appropriate	Vacuum Truck; Portable Skimmer; Absorbent Boom	
100 ft	Towing Bridles	
10,000 ft.	3/8" Polypropylene Line	
600 ft	¼" Polypropylene Line (Ferry Line)	
3	Danforth Anchor	
70	Steel Post Anchors	
As Appropriate	Post pounder, shovels, knife, wood saw	
As Appropriate	PFD work vests/rubber boots	
As Appropriate	Throw bags, first aid kit	
Jet boat/raft needed for strategy implementation? YES		
Suggested Personnel (8-10 People)		
Quantity De	escription	
2	Boat Operator	
8	Swiftwater Tech	

New York Canal – Boom Site 2 – S. Eagle Road



Boom Site 2 – South Eagle Rd.

Site Specific Contact

Contact USBR to shut water off at canal immediately, (208) 383-2248

Trustee/Contact Numbers/Information: Idaho Power Company (208) 388-2323 USBR Area Office Manager (208) 383-2248 Boise Project Board of Control (208) 344-1141



Directions to Site

From I-84

Take Exit 44 for 69 S/Meridian Kuna - 0.2 mi
 Keep right at the fork and merge onto ID-69 S/S. Kuna-Meridian Rd./S Meridian Rd. - 7.3 m
 Turn left onto E. Kuna Rd. - 2.0 mi
 Turn right onto S. Eagle Rd., destination will be on the left - 0.1 mi
 Boom Site 2: South Eagle Rd.

South Channel Boise River – Oil Recovery Site – Duck Alley Diversion Dam

Site Lat Long:	43.67412, -116.40794	
Strategy Objective:	Notification and collection & recovery. Shoreline Protection.	
Implementation:	South Channel Boise River flow direction is to the west. This diversion dam creates a path for petroleum to go down the Phyllis Canal and not the South Channel Boise River. In the event of a release at the crossing, it is doubtful that notification would give the authorities the time to shut off the flow to the canal. Petroleum will be in the canal traveling at the flow rates of 1-3 MPH until the flow on the canal can be shut off. One crew should proceed directly to the recovery site at Duck Alley with a drum skimmer and a vacuum truck for collection of oil from the diversion dam. Once the canal has been shut off, this location will be a key collection point. Booming Crew should proceed to Boom Site 1. It is imperative that the flow to the canal be stopped and communicated to the booming crews.	
Site Safety Note:	Diversion Dam drowning danger	
Staging Area:	On site staging is large.	
Field Notes:	4WD Access: NO Low Water Only: NO Overhead Utilities: NO Boat Needed: NO Locked Gate: NO	
Resources Targeted:	None	
Watercourse:	South Channel Boise River: gradient is flat; substrate is soil; approx. width is 30 ft.; approx. depth is 3 to 8 feet; flow velocity is 6 to 12 MPH in Summer, 5 to 8 MPH during Winter (November to March)	



Suggested Equipment		
Quantity		Description
As Appropriate		Vaccum Truck; Portable Skimmer
As Appropriate		PFD work vests/rubber boots
As Appropriate		Throw bags, first aid kit
Suggested Personnel (6-8 people)		
Quantity	Desc	ription
6-8	Ha	zmat Field Tech

South Channel Boise River – Oil Recovery Site – Duck Alley Diversion Dam

I-84 Exit 42



Oil Recovery Site - Duck Alley Diversion Dam

Site Specific Contact

Pioneer Irrigation District controls flow to the Phyllis Canal and can be reached at (208) 459-3617.

Trustee/Contact Numbers/Information: Idaho Power Company (208) 388-2323 USBR Area Office Manager (208) 383-2248 Boise Project Board of Control (208) 344-1141 Pioneer Irrigation District (208) 459-3617



Directions to Site

From I-84

- 1. Head southeast on Exit 42 0.4 mi
- 2. Keep left at the fork to continue toward S. Ten Mile Rd. 328 ft.
- 3. Use any lane to turn slight left onto S. Ten Mile Rd. 4.8 mi
- 4. Turn right onto US-26 E/Hwy 20 E./W. Chinden Blvd. 1.0 mi
- 5. Turn left onto N. Linder Rd. 0.8 mi
- 6. Turn right onto Artesian Rd. 0.3 mi
- 7. Keep right, destination will be on the right -256 ft.

Oil Recovery Site: Duck Alley Diversion Dam

Phyllis Canal – Boom Site 1 – Franklin Blvd. Bridge

Site Lat Long:	43.59739, -116.55320
Strategy Objective:	Boom and boat launch. Notification and collection & recovery. At high water flow levels, a cascade boom deployment system is utilized
	as the primary boom deployment. Shoreline protection boom as added containment and recovery.
Implementation:	Phyllis Canal flow direction is to the south. Deploy a cascade petroleum spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Site Safety Note:	Steep canal banks
Staging Area:	Use road along bank of the canal
Field Notes:	4WD Access: NO Low Water Only: NO Overhead Utilities: NO Boat Needed: NO Locked Gate: NO
Resources Targeted:	Fuel & Boat Storage
Watercourse:	Phyllis Canal: gradient is flat; substrate is soil; approx. width is 20 ft.; approx. depth is 8 to 10 feet; flow velocity is 3 to 6 MPH in Summer, 2 to 4 MPH during Winter (November to March)



Suggested Equipment		
Quantity	Description	
1000 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top	
	Tension Cable)	
As Appropriate	e Bolt Cutters	
As Appropriate	Vacuum Truck; Portable Skimmer; Absorbent Boom	
10,000 ft.	3/8" Polypropylene Line	
600 ft	¼" Polypropylene Line (Ferry Line)	
As Appropriate	Post pounder, shovels, knife, wood saw	
As Appropriate	PFD work vests/rubber boots	
As Appropriate	e Throw bags, first aid kit	
Jet boat/raft needed for strategy implementation? NO		
Suggested Personnel (6-8 People)		
Quantity D	escription	
6-8	Swiftwater Tech	

Phyllis Canal – Boom Site 1 – Franklin Blvd. Bridge



Boom Site 1: Franklin Blvd. Bridge

Site Specific Contact

Pioneer Irrigation District controls flow to the Phyllis Canal and can be reached at (208) 459-3617.

Trustee/Contact Numbers/Information: Idaho Power Company (208) 388-2323 USBR Area Office Manager (208) 383-2248 Boise Project Board of Control (208) 344-1141 Pioneer Irrigation District (208) 459-3617



Directions to Site

From I-84

- 1. Take Exit 36 for N. Franklin Blvd. toward Murphy 0.2 mi
- 2. Turn right onto N. Franklin Blvd., destination will be on the right -213 ft.

Boom Site 1: Franklin Blvd. Bridge

Site Lat Long:	43.58149, -116.58549
Strategy Objective:	Boom launch. Notification and collection & recovery. At high water flow levels, a cascade boom deployment system is utilized as the primary boom deployment. Shoreline protection boom as added containment and recovery.
Implementation:	Phyllis Canal flow direction is to the south. Deploy a cascade petroleum spill deployment system with containment boom. A secondary boom deployment will be placed down the canal from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.
Site Safety Note:	Steep concrete walls, metal access ladders
Staging Area:	On site staging is large.
Field Notes:	4WD Access: NO Low Water Only: NO Overhead Utilities: NO Boat Needed: NO Locked Gate: NO
Resources Targeted:	None
Watercourse:	Phyllis Canal: gradient is flat; substrate is concrete; approx. width is 20 ft.; approx. depth is 8 to 10 feet; flow velocity is 3 to 6 MPH in Summer, 2 to 4 MPH during Winter (November to March)



Suggested Equipment		
Quantity	Description	
1000 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top	
	Tension Cable)	
As Appropriate	Bolt Cutters	
As Appropriate	Vacuum Truck; Portable Skimmer; Absorbent Boom	
10,000 ft.	3/8" Polypropylene Line	
600 ft	¼" Polypropylene Line (Ferry Line)	
As Appropriate	Post pounder, shovels, knife, wood saw	
As Appropriate	PFD work vests/rubber boots	
As Appropriate	Throw bags, first aid kit	
Jet boat/raft needed for strategy implementation? NO		
Suggested Personnel (6-8 People)		
Quantity De	scription	
6-8 5	wiftwater Tech	

Phyllis Canal – Boom Site 2 – Davis Lane



Boom Site 2: Davis Lane

Site Specific Contact

Pioneer Irrigation District controls flow to the Phyllis Canal and can be reached at (208) 459-3617.

Trustee/Contact Numbers/Information: Idaho Power Company (208) 388-2323 USBR Area Office Manager (208) 383-2248 Boise Project Board of Control (208) 344-1141 Pioneer Irrigation District (208) 459-3617



Directions to Site

From I-84

- 1. Take Exit 33 for Northside Blvd. 0.2 mi
- 2. Turn left onto Northside Blvd. 1.2 mi
- 3. Continue straight onto N. Yale St. 0.2 mi
- 4. Turn right onto Hudson Ave. 0.5 mi
- 5. Turn left onto N. Stanford St. 266 ft.
- 6. Turn right at the 1st crossing street onto Sunny Ln. 0.1mi Boom Site 2: Davis Lane

Treasure Valley Geographic Response Plan

67

Boise River – Boom Site 1 – West Chicago Street Bridge

IOT LAIL 2/	I-84	Exit	27
-------------	-------------	------	----

Site Lat Long:	<u>43.67808, -116.69877</u>
Strategy Objective:	Boom launch. Notification and collection & recovery. A cascade boom deployment system is utilized as the primary boom
	deployment. Shoreline protection boom as added containment and recovery.
Implementation:	Boise River flow direction is to the west. Deploy a cascade petroleum spill deployment system with containment boom. A secondary
	concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the
	river. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested
	that portable light standards are brought to the recovery sites for 24-hour operation.
Site Safety Note:	Seasonal high water
Staging Area:	On site staging is large.
Field Notes:	4WD Access: NO Low Water Only: NO Overhead Utilities: NO Boat Needed: NO Locked Gate: NO
Resources Targeted:	None
Watercourse:	Boise River: gradient is flat; substrate is soil; approx. width is 50 ft.; approx. depth is 4 to 6 feet; flow velocity is 6 to 12 MPH in
	Summer, 5 to 8 MPH during Winter (November to March)



Suggested Equipment		
Quantity	Description	
1000 ft	10" Containment Boom (4" Floatation x 6" Skirt with Top	
	Tension Cable)	
As Appropriat	e Bolt Cutters	
As	Vacuum Truck; Portable Skimmer; Absorbent Boom	
Appropria	te	
10,000 ft.	3/8" Polypropylene Line	
600 ft	1/2" Polypropylene Line (Ferry Line)	
As Appropriat	e Post pounder, shovels, knife, wood saw	
As Appropriat	e PFD work vests/rubber boots	
As Appropriat	e Throw bags, first aid kit	
Jet boat/raft needed for strategy implementation? NO		
Suggested Personnel (6-8 People)		
Quantity [Description	
6-8	Hazmat Field Tech	

Boise River – Boom Site 1 – West Chicago Street Bridge



Boom Site 1: West Chicago Street Bridge

Site Specific Contact

Trustee/Contact Numbers/Information: Idaho Power Company (208) 388-2323 USBR Area Office Manager (208) 383-2248 Boise Project Board of Control (208) 344-1141



Directions to Site

From I-84

- 1. Take Exit 27 toward ID-19/Wilder/Homedale 0.2 mi
- 2. Turn left onto Centennial Way 0.5 mi
- 3. Turn right onto W. Chicago St., destination will be on the right 0.2 mi **Boom Site 1: West Chicago Street Bridge**

Boise River – Boom Site 2 – South Middleton Road Bridge

	I-84	Exit	25
--	-------------	-------------	----

Site Lat Long:	<u>43.696585, -116.612827</u>		
Strategy Objective:	Boom launch. Notification and collection & recovery. A cascade boom deployment system is utilized as the primary boom		
	deployment. Shoreline protection boom as added containment and recovery.		
Implementation:	Boise River flow direction is to the west. Deploy a cascade petroleum spill deployment system with containment boom. A secondary boom deployment will be placed down the river from the cascade boom deployment system. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom should be placed on each side of the river. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.		
Site Safety Note:	Seasonal high water		
Staging Area:	On site staging is large.		
Field Notes:	4WD Access: NO Low Water Only: NO Overhead Utilities: NO Boat Needed: NO Locked Gate: NO		
Resources Targeted:	None		
Watercourse:	Boise River: gradient is flat; substrate is soil; approx. width is 50 ft.; approx. depth is 4 to 6 feet; flow velocity is 6 to 12 MPH in Summer, 5 to 8 MPH during Winter (November to March)		



Suggested Equipment		
Quantity		Description
1000 ft		10" Containment Boom (4" Floatation x 6" Skirt with Top
		Tension Cable)
As Appropriate		Bolt Cutters
As Appropriate		Vacuum Truck; Portable Skimmer; Absorbent Boom
10,000 ft.		3/8" Polypropylene Line
600 ft		¼" Polypropylene Line (Ferry Line)
As Appropriate		Post pounder, shovels, knife, wood saw
As Appropriate		PFD work vests/rubber boots
As Appropriate		Throw bags, first aid kit
Jet boat/raft needed for strategy implementation? NO		
Suggested Personnel (6-8 People)		
Quantity	Description	
6-8	На	zmat Field Tech

Boise River – Boom Site 2 – South Middleton Road Bridge



Boom Site 2: South Middleton Road Bridge

Site Specific Contact

Trustee/Contact Numbers/Information: Idaho Power Company (208) 388-2323 USBR Area Office Manager (208) 383-2248 Boise Project Board of Control (208) 344-1141



Directions to Site

From I-84
1. Take Exit 25 for State Route 44 toward Middleton – 0.2 mi
2. Turn left onto ID-44 E. – 4.0 mi
3. Turn right onto S. Middleton Rd., destination will be on the left – 0.7 mi
Boom Site 2: S. Middleton Rd. Bridge

Black Canyon Canal New Plymouth, Idaho – Boom Site 1 – Cassia Road

Site Lat Long:	43.878372, -116.754938				
Strategy Objective:	Boom and boat launch. Notification and collection & recovery. A cascade boom deployment system is utilized as the primary boom				
	deployment. Shoreline protection boom as added containment and recovery.				
Implementation:	Black Canyon Canal flow direction is to the south and west. Deploy a cascade petroleum spill deployment system with containment				
	boom. Permanent Anchors, consisting of concrete blocks or pipe casing for quick attachment of the petroleum spill containment boom				
	should be placed on each side of the canal. Recovery of spilled oil & petroleum products can be achieved by vacuum trucks and				
	Oleophilic drum skimmers. It is suggested that portable light standards are brought to the recovery sites for 24-hour operation.				
Site Safety Note:	Headworks Hazard. There is no boat launch so use an extreme shallow water boat or John Boat				
Staging Area:	On site staging area is on the edges of the unimproved road. There is no boat launch so use an extreme shallow water boat or John Boa				
Field Notes:	4WD Access: NO (Maybe in Winter) Low Water Only: NO Overhead Utilities: NO Boat Needed: YES Locked Gate: NO				
Resources Targeted:	None				
Watercourse:	Black Canyon Canal: gradient is flat; substrate is soil; approx. width is 15-20 ft.; approx. depth is 6 to 8 feet; flow velocity is 5 to 6 MPH in Summer, 0 MPH during Winter (November to March)				



Suggested Equipment		
Quantity		Description
1000 ft		10" Containment Boom (4" Floatation x 6" Skirt with Top
		Tension Cable)
As Appropriate		Bolt Cutters
As Appropriate		Vacuum Truck; Portable Skimmer; Absorbent Boom
10,000 ft.		3/8" Polypropylene Line
600 ft		¼" Polypropylene Line (Ferry Line)
As Appropriate		Post pounder, shovels, knife, wood saw
As Appropriate		PFD work vests/rubber boots
As Appropriate		Throw bags, first aid kit
Jet boat/raft needed for strategy implementation? YES		
Suggested Personnel (8-10 People)		
Quantity	Desc	ription
8	Hazmat Field Tech	
2	Swiftwater Tech	

I-84 Exit 17
Black Canyon Canal New Plymouth, Idaho – Boom Site 1 – Cassia Road



Boom Site 1: Cassia Road

Site Specific Contact

Trustee/Contact Numbers/Information: USBR Area Office Manager (208) 383-2248



Directions to Site

From I-84

- 1. Take Exit 17 towards Sand Hollow 0.2 mi
- 2. Turn right onto Oasis Rd. 0.2 mi
- 3. Turn left onto Sand Hollow Rd. 3.0 mi
- 4. Turn right onto SE 8th Ave 148 ft
- 5. Turn left onto Tunnel Rd. 1.0 mi
- 6. Turn left onto SE 7th Ave. 0.2 mi
- 7. Turn right onto Cassia Rd., destination will be on your right -0.9 mi **Boom Site 1: Cassia Rd.**

Section 5: Shoreline Countermeasures

5. Shoreline Countermeasures

Note: At this time, shoreline type mapping has not been completed on the Snake River. Until such an effort is undertaken, a series of photographs showing example shoreline types is included. These shoreline types can be matched with the shoreline countermeasures matrix to select appropriate cleanup response.

5.1 Chapter Overview

The following text and photos are in draft form, and are intended to serve as a training tool for countermeasure contingency planning and implementation for shoreline areas in in the Treasure Valley area. Shoreline countermeasure processes evolve to reflect increasingly efficient treatment techniques. Accordingly, the following information will be updated as new information is added.

5.2 Shoreline Type Photos

Because shoreline type mapping has not been completed for this portion of the Snake River, photos of six typical shorelines (types 1, 3, 4, 5, 6, and 8) and their associated codes are shown on pages 5-2 through 5-4. A full list of shoreline types is provided in **Section 5.3.1**.

5.3 Oil Countermeasure Matrix

Shoreline countermeasures following an petroleum spill are a critical element in determining the ultimate environmental impact and cost resulting from a spill. Local response organizations and agencies have developed mechanisms for identifying shorelines requiring treatment, establishing treatment priorities, monitoring the effectiveness and impacts of treatment, and for resolving problems as the treatment progresses.

The Northwest Area Committee has developed a manual and a series of matrices as tools for shoreline countermeasure response. The shoreline countermeasures matrices and manual will be included as a technical appendix to the Northwest Area Contingency Plan.

The NW Area Contingency Plan can be obtained from the internet at http://www.rrt10nwac.com/nwacp_document.htm.





Shoreline Type 1: Exposed rock shores and vertical, hard man-made structures.



Shoreline Type 3: Fine to medium grained sand beaches and steep unvegetated river banks.



Shoreline Type 4: Coarse grained sand beaches.



Shoreline Type 5: Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material.





Shoreline Type 6B: Gravel beaches – cobbles to boulders.



Shoreline Type 6C: Exposed rip-rap.



Shoreline Type 8A: Sheltered vertical rock shores and vertical hard man-made structures (e.g., docks, bulkheads).

5.3.1 Shoreline Countermeasures Matrices

Table 5-1. Very Light Oil (Jet fuels, Gasoline)

- Highly volatile (should all evaporate within 1-2 days).
- High concentration of toxic (soluble) compounds.
- Result: Localized, severe impacts to water column and shoreline resources.
- Duration of impact is a function of the resource recovery rate.
- No dispersion necessary.

SHORELINE TYPES CODES

- 1 Exposed rock shores and vertical, hard man-made structure
- 2 Exposed wave-cut platforms
- 3 Fine to medium grained sand beaches and steep unvegetated river banks
- 4 Course grained sand beaches
- 5 Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material
- 6A Gravel beaches pebbles to cobble
- 6B Gravel beaches cobbles to boulders

- 6C Exposed rip rap
- 7 Exposed tidal flat
- 8A Sheltered vertical rock shores and vertical, hard man-made structures (e.g., docks, bulkheads)
- 8B Sheltered rubble slope
- 9A Sheltered sand and mud flats
- 9B Sheltered vegetated low bank
- 10 Marshes

	SHORELINE TYPES													
COUNTERMEASURES	1	2	3	4	5	6A	6B	6C	7	8A	8B	9A	9B	10
CONVENTIONAL METHODS														
No action	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Manual removal of oil														
Passive collection of oil			C	С	С	С	С	С						
Oiled debris removal	С	С	С	С	С	С	С	С	С	С	С	С	С	C
Trenching/recovery wells			C	C	C									
Oiled sediment removal														
Ambient water flooding (deluge)														C
Ambient water flush <50 psi														
Ambient water flush <100 psi														
Warm water flush <90°F														
Hot water flush >90°F														
Vacuum removal of oil														
Sediment reworking			С	С	С	С								
Sediment Removal - cleaning - replacement														
Cutting oiled vegetation														
ALTERNATIVE METHODS*														
In-situ burning on shore														
Chemical stabilization, protection, or cleaning														
Nutrient enhancement														
Microbial addition														

R Recommend - May be Preferred Alternative

C Conditional (Refer to NW Shoreline Countermeasures Manual)

Shaded areas are Not Applicable or Not Generally Recommended

* Follow approved process defined in National Contingency Plan (NCP) and NW Area Contingency Plan

Table 5-2. Light Oil (Diesel, No 2 Fuel Oils, Light Crudes)

- Moderately volatile; will leave residue (up to 1/3 of spilled amount).
- Moderate concentrations of toxic (soluble) compounds.
- Long-term contamination of intertidal resources possible.
- Potential for subtidal impacts (dissolution, mixing, sorption onto suspended sediments).
- No dispersion necessary.
- Cleanup can be very effective.

SHORELINE TYPES CODES

- 1 Exposed rock shores and vertical, hard man-made structure
- 2 Exposed wave-cut platforms
- 3 Fine to medium grained sand beaches and steep unvegetated river banks
- 4 Course grained sand beaches
- 5 Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material
- 6A Gravel beaches pebbles to cobble
- 6B Gravel beaches cobbles to boulders

- 6C Exposed rip rap
- 7 Exposed tidal flat
- 8A Sheltered vertical rock shores and vertical, hard man-made structures (e.g., docks, bulkheads)
- 8B Sheltered rubble slope
- 9A Sheltered sand and mud flats
- 9B Sheltered vegetated low bank
- 10 Marshes

					SHO	ORELI	NE TY	PES						
COUNTERMEASURES	1	2	3	4	5	6A	6B	6C	7	8A	8B	9A	9B	10
CONVENTIONAL METHODS														
No action	R	R	С	С	С	С	С	С	R	С	С	R	С	R
Manual removal of oil			C	С	С	С	С	С		R	R		С	
Passive collection of oil	С	R	R	R	R	R	R	R	С	R	R	С	R	R
Oiled debris removal	С	С	R	R	R	R	R	R	С	R	R	С	С	С
Trenching/recovery wells			C	С	С									
Oiled sediment removal			C	С	С	С								
Ambient water flooding (deluge)			C	С	С	R	R	R			С			С
Ambient water flush <50 psi		С			C	С	С	С		R	С			С
Ambient water flush <100 psi														
Warm water flush <90°F														
Hot water flush >90°F														
Vacuum removal of oil							С	С						С
Sediment reworking			C	С	С	С								
Sediment Removal - cleaning - replacement			C	С	С									
Cutting oiled vegetation							С	С		С	С		С	С
ALTERNATIVE METHODS*														
In-situ burning on shore														
Chemical stabilization, protection, or cleaning														
Nutrient enhancement			C	С	С	С	С	С						С
Microbial addition														

R Recommend - May be Preferred Alternative

C Conditional (Refer to NW Shoreline Countermeasures Manual)

Shaded areas are Not Applicable or Not Generally Recommended

Follow approved process defined in National Contingency Plan (NCP) and NW Area Contingency Plan

Table 5-3. Medium Oil (Most Crude Oils & Some Heavily Weathered Light Crudes)

- About 1/3 will evaporate within 24 hours.
- Maximum water-soluble fraction is 10-100ppm.
- Oil contamination of intertidal areas can be severe and long-term.
- Impact to waterfowl and fur-bearing mammals can be severe.
- Chemical dispersion is an option within 1-2 days.
- Cleanup most effective if conducted quickly.

SHORELINE TYPES CODES

- Exposed rock shores and vertical, hard man-made structure
- 2 Exposed wave-cut platforms

1 -

- 3 Fine to medium grained sand beaches and steep unvegetated river banks
- 4 Course grained sand beaches
- 5 Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material
- 6A Gravel beaches pebbles to cobble
- 6B Gravel beaches cobbles to boulders

- 6C Exposed rip rap
- 7 Exposed tidal flat
- 8A Sheltered vertical rock shores and vertical, hard man-made structures (e.g., docks, bulkheads)
- 8B Sheltered rubble slope
- 9A Sheltered sand and mud flats
- 9B Sheltered vegetated low bank
- 10 Marshes

					SHO	ORELI	NE TY	PES						
COUNTERMEASURES	1	2	3	4	5	6A	6B	6C	7	8A	8B	9A	9B	10
CONVENTIONAL METHODS														
No action	С	С	С	С	С	С	С	С	R	С	С	R	С	R
Manual removal of oil	С	R	R	R	R	С	С	С		R	R		С	С
Passive collection of oil	R	R	R	R	R	R	R	R	С	R	R	R	R	R
Oiled debris removal	С	R	R	R	R	R	R	R	С	R	R	С	R	С
Trenching/recovery wells			С	С	С									
Oiled sediment removal			С	С	С	С							С	
Ambient water flooding (deluge)			С	С	С	R	R	R		R	R		С	С
Ambient water flush <50 psi	С	С			С	R	С	R		R	R		С	С
Ambient water flush <100 psi	С	С					С	С		С				
Warm water flush <90°F	С						С	С		С				
Hot water flush >90°F	С									С				
Vacuum removal of oil	С	С	R	R		С	R	R		С	С		С	С
Sediment reworking			C	С	С	С								
Sediment Removal - cleaning - replacement			С	С	С	С		С			С			
Cutting oiled vegetation							С	С		С	С		С	С
ALTERNATIVE METHODS*														
In-situ burning on shore														
Chemical stabilization, protection, or cleaning														
Nutrient enhancement			С	С	С	С	С	С			С			С
Microbial addition														

R Recommend - May be Preferred Alternative

C Conditional (Refer to NW Shoreline Countermeasures Manual)

Shaded areas are Not Applicable or Not Generally Recommended

* Follow approved process defined in National Contingency Plan (NCP) and NW Area Contingency Plan

Table 5-4. Crude Oils, Intermediate Fuel Oils, Bunker C & Heavily Weathered Medium Crudes)

- Heavy oils with little or no evaporation or dissolution.
- Water-soluble fraction likely to be <10ppm.
- Heavy contamination of intertidal areas likely.
- Severe impacts to waterfowl and fur-bearing mammals (coating and ingestion).
- Long-term contamination to sediments possible.
- Weathers very slowly.
- Dispersion seldom effective.
- Shoreline cleanup difficult under all conditions.

SHORELINE TYPES CODES

- 1 Exposed rock shores and vertical, hard man-made structure
- 2 Exposed wave-cut platforms
- 3 Fine to medium grained sand beaches and steep unvegetated river banks
- 4 Course grained sand beaches
- 5 Mixed sand and gravel beaches, including artificial fill containing a range of grain size and material
- 6A Gravel beaches pebbles to cobble
- 6B Gravel beaches cobbles to boulders

- 6C Exposed rip rap
- 7 Exposed tidal flat
- 8A Sheltered vertical rock shores and vertical, hard man-made structures (e.g., docks, bulkheads)
- 8B Sheltered rubble slope
- 9A Sheltered sand and mud flats
- 9B Sheltered vegetated low bank
- 10 Marshes

	SHORELINE TYPES													
COUNTERMEASURES	1	2	3	4	5	6A	6B	6C	7	8A	8B	9A	9B	10
CONVENTIONAL METHODS														
No action	С	С	С	С	С	С	С	С	R	С	С	R	С	R
Manual removal of oil	С	R	R	R	R	С	С	С		R	R		С	С
Passive collection of oil	R	R	R	R	R	R	R	R	С	R	R	С	R	R
Oiled debris removal	С	R	R	R	R	R	R	R	С	R	R	С	R	С
Trenching/recovery wells			С	С	С									
Oiled sediment removal			С	С	С	С		С					С	
Ambient water flooding (deluge)			С	С	С	R	R	R		R	R		С	С
Ambient water flush <50 psi	С	С			С	R	С	R		С	С		С	С
Ambient water flush <100 psi	С	С					С	С		С	С			
Warm water flush <90°F	С						С	С		С				
Hot water flush >90°F	С									С				
Vacuum removal of oil	С	С	С	С	С	С	С	С		С	С		С	С
Sediment reworking			С	С	С	С								
Sediment Removal - cleaning - replacement			С	С	С	С		С						
Cutting oiled vegetation							С	С		С	С		С	С
ALTERNATIVE METHODS*														
In-situ burning on shore														
Chemical stabilization, protection, or cleaning														
Nutrient enhancement			С	С	С	С	С	С						C
Microbial addition														

R Recommend - May be Preferred Alternative

C Conditional (Refer to NW Shoreline Countermeasures Manual)

Shaded areas are Not Applicable or Not Generally Recommended

Follow approved process defined in National Contingency Plan (NCP) and NW Area Contingency Plan

Section 6: Sensitive Resource/Wildlife Flight Restriction Information

6. Sensitive Resource/Wildlife Flight Restriction Information

6.1 Sensitive Resources/Wildlife

The Treasure Valley area of Idaho affords a wide variety of aquatic, riparian, and upland habitats. These varied habitats support a complex diversity of wildlife species, including large and small mammals, passerine birds, raptors, upland birds, waterfowl and wading birds, reptiles, and amphibians. Some species are resident throughout the year; others are migratory either within the area or, in many cases, seasonally migrate outside the area. Populations of certain species are very tenuous and their future presence in the Treasure Valley region will require improved information and decisive management actions. Many wildlife species found in the area are classified as threatened, endangered, sensitive, or of special concern under the federal Endangered Species Act or under Idaho Administrative Rules.

6.1.1 Fish Habitat Description

This section addresses fish use in the mainstem Snake River and its tributaries as far as they are located in the Treasure Valley and Magic Valley. Tributaries considered in these locations are the Main Canal, the High Line Canal, the Low Line Canal, Rock Creek, the New York Canal, the South Channel of the Boise River, the Phyllis Canal, the Boise River, and the Black Canyon Canal. Information included in this section and those following are summarized from the Idaho Department of Fish and Game, accessed through their public website (https://idfg.idaho.gov).

Anadromous fish present in this GRP area include chinook salmon, whitefish, and summer steelhead trout. Resident bull trout, white sturgeon, and pacific lamprey are also addressed in this section. The remaining native species are several types of hybrids, minnow, sculpin, and suckers. A list of fisheries are identified along with the fish species they grow in Table 6-1 below.

Fishery	Address	Fish Present		
Nampa Fish Hatchery	3806 S. Powerline Rd. Nampa, ID 83686	Rainbow Trout, Lahontan Trout, Brown Trout, Chinook Salmon		
Eagle Fish Hatchery	1800 Trout Rd. Eagle, ID 83616	Sockeye/Kokanee Salmon, Chinook Salmon		
Hagerman Fish Hatchery	1060 State Fish Hatchery Rd. Hagerman, ID 83332	Rainbow Trout, Coho Salmon		
Niagara Springs Fish Hatchery	2131 Niagara Springs Rd. Wendell, ID 83355	Steelhead		
Magic Valley Steelhead Hatchery	Route 1 Filer, ID 83328	Steelhead		

Table 6-1: List of Fisheries Located within the GRP Coverage Area

6.1.2 Endangered Species Act (ESA)-Listed Fish Species

The USFWS identifies federally threatened, endangered, and candidate species that are important for protection because of their greater possibility of extinction. Specific Endangered Species Act-listed fish species are identified in Table 6-2.

Table 6-2: Federally Listed ESA Fish Species Located within the GRP Coverage Area								
Common Name	Scientific Name	ESA Status						
Bull Trout	Salvelinus confluentus	Threatened						
(USFWS 2019)								

6.1.3 Chinook Salmon

Chinook salmon are a native species to the waterbodies considered in this GRP and are popular for fishing. Chinook returning to Idaho are classified into three groups or "runs" – spring, summer and fall Chinook – based on when they begin their migration upstream to spawn. Most fish range from 12 to 20 pounds, but fish over 30 pounds are caught each year. Due to the different times Chinook salmon enter Idaho, fishing opportunities can often be found from May

through October. Chinook populations tend to diminish upstream through the Snake River due to impediments from dams.

Spring and summer chinook bound for the Lower Snake River subbasin currently enter the Columbia River during April and May, reaching the Snake River between April and June. Spawning occurs in the smaller tributary rivers and headwater streams in August and September. Eggs typically hatch in December with their emergence from the spawning gravel completed by April.

Spring and summer chinook typically remain in freshwater for one year, migrating towards the ocean in the spring of their second year from March through June, with a majority of them molting in April and May. Prior to this outmigration, the juveniles migrate downstream from the upper rearing areas seeking winter refuge.

Fall chinook generally emerge from the gravel in April and May and reside in freshwater for one to two years, with many residing for two years. Juvenile fall chinook typically out-migrate June through August.

6.1.4 Whitefish

Whitefish are native to Idaho rivers and spawn in October and November, and have smaller eggs compared to trout. Whitefish are more widely distributed and occur in higher numbers than any of the other members of the trout/salmon family in Idaho. Unlike trout or salmon, whitefish do not build nests, but broadcast their eggs over larger gravel and boulders in fast flowing areas.

6.1.5 Steelhead

Steelhead are native rainbow trout, which migrate to the ocean as juvenile fish and return to fresh water as adults to spawn. In Idaho these ocean-going trout are often classified into two groups, A-run and B-run, based on their size and ocean life history. Idaho's A-run steelhead are usually found in the Snake and Salmon rivers. They return from the ocean earlier in the year (usually June through August) and they most often return after spending one year in the ocean. Because of their early return and short stay in the ocean they usually weigh 4 to 6 pounds and are generally 23 to 26 inches in length.

B-run steelhead are only found in areas north of those considered in this GRP, and so are not relevant to this GRP.

6.1.6 Bull Trout

Bull trout were historically found throughout the Snake River subbasin, but few records of their distribution and abundance were recorded. Bull trout are currently listed as a threatened species under the federal Endangered Species Act

The coterminous United States population of the bull trout (*Salvelinus confluentus*) was listed as threatened on November 1, 1999 (USFWS 1999, 64 FR 58910-58933). The threatened bull trout does not typically occur within this GRP area, but is mentioned on account of its threatened status. Typically, bull trout are located within the South Fork Clearwater and Lochsa Rivers within the Mid-Columbia Bull Trout Recovery Unit. Bull trout are char native to the Pacific Northwest and western Canada. Bull trout are a cold-water fish of relatively pristine stream and lake habitats in western North America. The life history of bull trout may be one of the most complex of any Pacific salmonid. Bull trout typically spawn from late July to December, with peak spawning in September for most interior populations. The period of egg incubation to emergence of fry from their spawning gravels may take up to 210 days (7 months). Juvenile migratory bull trout rear one to four years in their natal stream before migrating either to a river, lake/reservoir, or nearshore marine area to mature, Resident and migratory forms or mixed migratory forms may all be found together, and either form may give rise to offspring exhibiting either resident or migratory behaviors.

6.1.7 White Sturgeon

White sturgeon are prevalent in the free-flowing stretch of the Snake River between the Bliss Dam and the upper end of C.J. Strike Reservoir in southern Idaho, though they may be found in other reaches of the lower Snake River. White sturgeon tend to dwell in wider river areas along the bottom where there are brisk currents and dark, deep pools. On account of damming and overharvesting from the early 1900s-1970s, white sturgeon populations were greatly depleted, so the Idaho Department of Fish and Wildlife prohibited harvesting.

6.1.8 Pacific Lamprey

It is generally thought that Pacific Lamprey were historically present in all streams accessible to salmon and steelhead. Pacific lamprey abundance throughout the Snake River and its tributaries has decreased significantly in recent years and the US Fish and Wildlife Service lists them as a species of concern. While they do not have an ESA ranking, they are listed as presumably extirpated in the Lower Snake River by the Idaho Department of Fish and Game. Because of their jawless, disc-like mouth, they can cling to almost any wet surface and can climb waterfalls. However, they cannot move around sharp corners in high flows and have trouble passing fish ladders made for salmon.

Adult Pacific lampreys leave the ocean during June and July to migrate upstream. Like salmon and steelhead, they do not feed after they leave the ocean. They spend the winter in the river before spawning late May to early July and die soon after.

Young lampreys are eyeless and burrow into sand where the current is slow. There they live for 3 to 7 years feeding on algae and bits of plant or animal material. When they are large enough, they grow eyes and move downstream to the ocean during the spring. In the ocean they live as parasites on other fishes for 1 to 3 years. Little is known of their ocean movements. (https://idfg.idaho.gov/fish/wild/spp-lamprey)

6.2 Wildlife

This GRP zone includes a diverse array of wildlife species, including Endangered Species Act (ESA) listed species and Species of Greatest Conservation Need (SGCN). The Snake River subbasin includes numerous SGCN wildlife species. Specific Endangered Species Act-listed mammal and invertebrate species are identified in Table 6-3 and Table 6-4 respectively. There are no amphibian and plant species within the GRP coverage area included within the Endangered Species Act.

	· · ·	<u>0</u>
Common Name	Scientific Name	ESA Status
Southern Selkirk Mountains	Rangifer tarandus caribou	Endangered
Woodland Caribou		
Canada Lynx	Lynx canadensis	Threatened
Grizzly Bear	Ursus arctos horribilis	Threatened
(USFWS 2019)		

Table 6-3: Federally Listed ESA Species Located within the GRP Coverage Area

Table 6-4: Federally Listed ESA Invertebrate Species Located within the GRP Coverage Area

Common Name	Scientific Name	ESA Status
Yellow-billed Cuckoo	Coccyzus americanus	Threatened
(USFWS 2019)		

6.2.1 Shorebirds, Waterfowl, and Raptors

The Snake River subbasin includes multiple shorebirds, waterfowl, and raptor species. Numerous shorebirds and migratory waterfowl are observed within the GRP coverage area, these include the following list of S1 and S2 ranked SGCN's; Harlequin duck, Caspian tern, common loon, ring-billed gull, trumpeter swan, and Western grebe. Specific Endangered Species Act-listed bird species are identified in Table 6-5.

Table 6-5: Federally Listed ESA Bird Species Located within the GRP Coverage Area

Common Name	Scientific Name	ESA Status
Yellow-billed Cuckoo	Coccyzus americanus	Threatened
(USFWS 2019)		

6.2.2 Yellow-billed Cuckoo

Yellow-billed cuckoos are known to winter in the rocky surf zones along the northern Pacific Ocean and migrate to Idaho to breed in the summer. Yellow-billed cuckoos are currently listed as a threatened species under the federal Endangered Species Act. Yellow-billed cuckoos are a riparian obligate species and appear to require large blocks of

riparian habitat for nesting. As such, they tend to nest in riparian zones along the Snake River, though eastern breeds can nest in extensive bottomland forests and non-riparian deciduous woodlands providing that they are consistently humid through the summer. They do not prefer heavily wooded, nor urban habitats, and they are very scarce in high elevation zones (above 2,000 meters) in the Rocky Mountains.

6.3 Aquatic Invasive Species (AIS)

Invasive species are non-invasive species that disrupt healthy ecosystem functions from the bottom up, causing a chain reaction which leaves nothing unaffected. Aquatic invasive plants such as Eurasian watermilfoil crowd out, displace, or otherwise harm native species and alter ecosystem dynamics. The cost of controlling and managing invasive species in Idaho is millions of dollars per year. The Idaho Invasive Species Strategic Plan 2017-2021 focuses on three goals:

- 1. Prevent the introduction of new species to Idaho,
- 2. Limit the spread of existing populations of invasive species populations in Idaho,
- 3. Abate ecological and economic threats that result from invasive species populations in Idaho.

6.3.1 Prevention of AIS Migration

Equipment for containment, clean-up, and removal of soiled aquatic plants could spread the distribution of unwanted plants and should minimize the likelihood of moving AIS. Implementing the following habits into response and clean-up is critical in stopping the introduction and spread of AIS in Idaho.

- 1. CLEAN Before leaving any waterbody, always inspect equipment (boats, boom, skimmers, trailers, ect.) for visible plants and animals. Remove this material on site. Carefully check places that are still damp. Dispose of the removed material in a trash receptacle or on high, dry ground where there is no danger of it washing into a waterbody.
- 2. DRAIN Eliminate water from all equipment, including motors, live wells, ballast tanks, boat hulls, waders, and boots.
- 3. DRY Clean and dry anything that came in contact with water (boats, equipment, clothing, ect.)

Below are aquatic invasive plants known to occur within the GRP Area that have been designated as noxious by Idaho state law.

6.3.2 Brazilian Elodea

The Brazilian Elodea (*Egeria densa*) is categorized in Idaho under the Early Detection Rapid Response (EDRR) management strategy. Meaning weeds shall be eradicated during the same growing season as identified. Brazilian elodea is a very bushy plant with dense whorls of bright green leaves (when growing in shaded conditions, the leaves may be widely spaced).

Typically has four leaves per whorl (arranged around the stem). Although it has flowers, Brazilian Elodea plants in the United States are all male plants. It does not produce any seed, but spreads very quickly by forming fragments that root in new locations, Brazilian elodea forms dense mats that choke out native aquatic plants. These mats hinder recreational activities such as swimming, fishing, and water skiing. Brazilian elodea restricts water movement and traps sediment. Because this plant can spread by fragmentation (just like Eurasian Watermilfoil) it can move quickly from one water source to the next on boats of trailers. Since most plants are males, the primary methods of spreading is by fragmentation by boats and other water users.

6.3.3 Eurasian Watermilfoil

Eurasian Watermilfoil (*Myriophyllum spicatum*) is a submerged perennial aquatic plant that is highly invasive and colonizes a variety of habitats including reservoirs, lakes, ponds, low-energy streams and rivers, and brackish waters from estuaries and bays. It adversely impacts aquatic ecosystems by filling the water column and forming dense canopies that shade out native aquatic vegetation. Eurasian watermilfoil is adaptable, able to survive in a variety of environmental conditions. It grows in still to flowing waters, can tolerate relatively high salinities, can tolerate a wide

range of pH levels, grows rooted in water depths from 1 to 10 meters, can survive under ice, Because Eurasian watermilfoil elongates from shoots started in the fall and is tolerant of low water temperatures, it can begin spring growth earlier than other aquatic plants, and grow quickly to the surface to form dense canopies, overtopping and shading out surrounding vegetation. This species regenerates readily from plant fragments which are easily transported to uninfested water bodies on boats and boat trailers is able to displace native aquatic vegetation within a few growing seasons (ISDA 2008).

Management strategy is for control in Idaho. Meaning reduce or eliminate new or expanding weed populations. Because Eurasian watermilfoil is so highly invasive, one of the goals identified in the 2008 Idaho Statewide Strategic Plan is to contain Eurasian watermilfoil so that it does not spread beyond the area it currently covers in water bodies where it does occur.

6.4 Archeological Sites

6.4.1 General Site Locations

The GRP coverage area contains numerous sites of historic cultural importance to the Idaho State Historic Preservation Office. This document will not locate sites specifically.

6.4.2 Seasonal Sensitivity

There are no known seasonal differences in sensitivity to cultural resources in the basin.

6.4.3 Recommendations

It is recommended that a representative of the Idaho State Historic Preservation Office be notified before cleanup of a spill commences. They should provide monitors to be present during cleanup operations.

6.4.4 Procedures for the Finding of Human Skeletal Remains

Any human remains, burial sites, or burial-related materials that are discovered during construction will be treated with respect at all times.

- If the Monitor or any member of the construction work force believes that he or she has encountered human skeletal remains, all work will be stopped immediately and the Incident Commander notified.
- The Incident Commander will be responsible for taking appropriate steps to protect the discovery. At a minimum, the immediate area of discovery will be flagged, and vehicles and equipment will not be permitted to traverse the discovery site. In no case will additional excavation be undertaken prior to consultation, and no exposed human remains will be left unattended.
- The Incident Commander or their representative will immediately contact the Idaho State Historic Preservation Office (SHPO); and either the Payette, Canyon, Ada, Elmore, Gooding, Twin Falls, Jerome, or Owyhee County Medical Examiner. The Medical Examiner will determine whether the discovery is a crime scene or human burial.
- If the remains are determined to be Native American and not to be connected with criminal activity, the Idaho State Archaeologist and Incident Command will confer on a treatment plan for the remains.
- If the remains are determined to be non-Native American or connected with criminal activity, the Medical Examiner will take charge.

6.4.5 Procedures for the Discovery of Cultural Resources

If the Monitor or any member of the construction work force believes that he or she has encountered cultural resources, all work will stop and the Incident Commander will be notified immediately. The area of work stoppage will be adequate to provide for the security, protection, and integrity of the materials. Prehistoric cultural resources

may include:

- •Lithic debitage (stone chips and other tool-making byproducts)
- •Flaked or ground stone tools
- •Exotic rocks and minerals
- •Concentrations of organically stained sediments, charcoal, or ash
- •Fire-modified rock
- •Bone (burned, modified, or in association with other bone, artifacts, or features)
- •Shell.

Historic (i.e., over 50 years old) cultural material may include:

- •Bottles or other glass
- •Cans
- •Ceramics
- •Milled wood, brick, concrete, metal, or other building material.

If the Monitor believes that the discovery is a cultural resource, the Incident Commander will take appropriate steps to protect the discovery site. At a minimum, the immediate area of the discovery site will be flagged, and vehicles and equipment will not be permitted to enter the discovery site. Work in the immediate area will not resume until treatment of the discovery has been completed.

The Incident Commander or their representative will contact the Idaho State Archaeologist and they will arrange for the discovery to be evaluated by a professional archaeologist. The archaeologist will determine whether the discovery is potentially eligible for listing on the National Register of Historic Places (NRHP). Criteria and integrity requirements for listing on the NRHP (36 CFR 60.4) will provide the standards for identification and evaluation of significance of cultural material.

The archaeologist will contact the Idaho State Archaeologist to seek consultation regarding the National Register eligibility of the discovery. If the SHPO determine that the discovery is eligible, they will consult with Incident Command to determine appropriate treatment of the discovery.

If adverse project affects to an eligible site cannot be avoided, a treatment plan will be developed and implemented. The Secretary of the Interior's *Standards for Archaeological Documentation* will apply, including provisions for a research design, reporting, and curation of recovered material and samples.

The particular data recovery measures applied to any given historic property will depend on the development of research questions and design of excavation strategies to acquire the data needed to answer those questions. Field notes, maps, plans, profiles, and photographs will document the process. The final report will follow style guidelines of the professional archaeological journal *American Antiquity*; it will synthesize the data collected and address the research questions posed.

6.5 Flight Restriction

The Flight Restriction details the location, protected resources, and applicable season for each flight restriction zone. Wildlife refuges require a minimum 2,000 feet altitude above the surface of the zone.

 Table 6-8.
 Wildlife Resource/Flight Restriction Table

Sector	Specific Flight Restrictions
1	Morley Nelson Snake River Birds of Prey National Conservation Area (Raptors, year-round)
2	Snake River Birds of Prey Area (Raptors, year-round)
3	Deer Flat National Wildlife Refuge (Various birds, year-round)
4	New York Canal – Boom Site 1 - South Cloverdale Bridge – Class C Airspace
5	Phyllis Canal – Boom Site 1 – Franklin Blvd. Bridge – Class E Airspace
6	Boise River – Boom Site 2 – South Middleton Road Bridge – Class E Airspace

Section 7: Logistical Information

7. Logistical Information

The following list includes information on command posts, county emergency management contacts, local support equipment, air support, boat ramps, staging areas, tribal resources, local elected officials, fire departments, wildlife rehab facilities, and fish hatcheries.

Subject	Name	Phone Number	Location
Command Posts	City of Caldwell	208-455-3000	Caldwell
	City of Middleton	208-585-3133	Middleton
	City of Nampa	208-468-4413	Nampa
	City of Meridian	208-888-4433	Meridian
	City of Boise	800-377-3529	Boise
	City of Mountain Home	208-587-2104	Mountain Home
	City of Glenns Ferry Weekend Emergency	208-366-7418	Glenns Ferry
	City of Twin Falls	208-735-7287	Twin Falls
	City of Caldwell	208-455-3000	Caldwell
County Emergency Management Office			
	Ada County Emergency Management	208-577-4750	Ada County
	Payette County Emergency Management	208-642-6006	Payette County
	Canyon County Emergency Management	208-454-7271	Canyon County
	Elmore County Emergency Management	208-590-0967	Elmore County
	Owyhee County Emergency Management	208-249-0571	Owyhee County
	Gooding County Emergency Management	208-934-5958	Gooding County
	Twin Falls County Emergency Management	208-736-4234	Twin Falls County
Local Support	WRI Environmental	406-207-2027	Missoula, MT
Equipment	Clean Harbors Environmental Services	406-240-9833 509-766-3290 800-645-8265	Moses Lake, WA
	NRC Environmental	503-283-1150 800-899-4672	Portland, OR
	NOAA Hydrology/Weather	208-334-9860	Boise, ID
Air Support	Life Flight Network	208-367-3114	

Table 7-1. Logistical Information

Fire Departments	Fruitland Fire Dept.	208-452-4421	Fruitland
	Caldwell Fire Dept.	208-455-3006	Caldwell
	Nampa Fire Dept.	208-468-5770	Nampa
	Boise Fire Dept.	208-570-6500	Boise
	Mountain Home Fire Dept.	208-587-2117	Mountain Home
	Glenns Ferry Fire Dept.	208-366-7418	Glenns Ferry
	Wendell Fire Dept.	208-587-2117	Wendell
	Twin Falls Fire Dept.	208-735-7231	Twin Falls
Wildlife Rehab	Idaho Department of Fish and	208-769-1414	
Facilities	Game	208-488-7468	
	US Fish and Wildlife	208-378-5243	Boise
	Services		
Fish Hatcheries	Eagle Fish Hatchery	208-939-4114	Eagle
	Nampa Fish Hatchery	208-465-8479	Nampa
	Hagerman Hatchery	208-324-4359	Hagerman
	Hagerman National Fish Hatchery	208-837-4896	Hagerman
	Niagara Springs Hatchery	208-324-4359	Wendell
	Magic Valley Fish Hatchery	208-324-4359	Jerome
Local Water	City of Weiser Water Intake	208-405-5114	Weiser
Intakes			
	City of Fruitland Water Intake	208-230-2324	Fruitland
	Suez Water Intake	208-362-1479	Boise
	Glenns Ferry Water Intake	208-366-7418	Glenns Ferry

Appendix A, B, & C

Appendix A: Protection Techniques

Table A-1. Summary of Protection Techniques

Protection Techniques	Description	Primary Logistical Requirements	Limitations
ONSHORE			
Geotextiles	A roll of geotextile, plastic sheeting, or other impermeable material is spread along the bottom of the supra-tidal zone and fastened to the underlying logs or stakes placed in the ground.	 Geotextile - 3 m wide rolls Personnel - 5 Misc stakes or tie-down cord 	Low sloped shorelineHigh spring tidesLarge storms
Sorbent Barriers	A barrier is constructed by installing two parallel lines of stakes across a channel, fastening wire mesh to the stakes and filling the space between with loose sorbents.	 Per 30 meters of barrier Wire mesh - 70 m x 2 m Stakes - 20 Sorbents - 30 m² Personnel - 2 Misc fasteners, support lines, additional stakes, etc. 	 Waves > 25 cm Currents > 0.5 m/s
Inlet Dams	A dam is constructed across the channel using local soil to exclude oil from entering channel.	 Loader - 1 Personnel - equipment operator and 1 worker or several workers w/shovels 	Waves > 25 cmFreshwater outflow
NEARSHORE			
Containment Booming	Boom is deployed at the source of the spill. The spill source will determine the strategy necessary to contain and remove spilled material. The objective is to stop any future material from entering river.	 For 150 meters Slick: Boom - 280 m Boats -2 Personnel - boat crews and 4 boom tenders Misc tow lines, drogues, connectors, etc. 	 High winds Swells > 2 m Breaking waves > 50 cm Currents > 1.0 m/s
Exclusion Booming	Boom is deployed across or around sensitive areas and anchored in place. Approaching oil is deflected or contained by boom.	 Per 300 meters of Boom Boats - 1 Personnel - boat crew and 3 boom tenders Misc 6 anchors, anchor line, buoys, etc. 	 Currents > 0.5 m/s Breaking waves > 50 cm Water depth > 20 m
Deflection Booming	Boom is deployed from the shoreline away from the approaching slick and anchored or held in place with a workboat. Oil is deflected away from shoreline.	 Single Boom, 0.75 m/s current Boom - 60 m Boats - 1 Personnel - boat crew + 3 Misc 3 anchors, line, buoys, recovery unit 	 Currents > 1.0 m/s Breaking waves > 50 cm
Collection Booming	Boom is deployed from the shoreline at an angle towards the approaching slick and anchored or held in place with a workboat. Oil is diverted towards the shoreline for recovery.	 Single Boom, 0.75 m/s current Boom - 60 m boats - 1 Personnel - boat crew + 3 Misc 3 anchors, line, buoys, recovery unit 	 Currents > 1.0 m/s Breaking waves > 50 cm

Treasure Valley Geographic Response Plan

Protection Techniques	Description	Primary Logistical Requirements	Limitations
Skimming	Self-propelled skimmers work back and forth	Self-propelled (None)	High winds
_	along the leading edge of a windrow to recover the	Towed	• Breaking waves > 50 cm
	oil. Booms may be deployed from the front of a	• Boom - 200 m	• Currents $> 1.0 \text{ m/s}$
	skimmer in a "V" configuration to increase sweep	• Boats - 2	
	width. Portable skimmers are placed within	• Personnel - boat crews and 4 boom tenders	
	containment booms in the area of heaviest oil	• Misc towlines, bridles, connectors, etc.	
	concentration.	Portable	
		• Hoses - 30 m discharge	
		Oil storage - 2000 liters	

Source is R. Miller of Clean Sound Cooperative.

Table A-2. Fast Water Booming Techniques: Current Chip Log and Maximum Boom Deflection Angle

The table uses the time for floating debris to drift 100 feet. This is accurately determined by anchoring a line with two floating buoy markers attached at a spacing 100 feet apart. Floating debris is then thrown into the water approximately 20 feet upstream of the first buoy marker. Determine the time it takes the debris to transit the distance between the two marker buoys in seconds. This assumes that the minimum escape velocity under a boom perpendicular to the current (90 degrees) is 1.2 feet per second. The table provides an estimate of the length of boom required for deflecting oil at a specified angle for a 110-foot profile (perpendicular length) to the current. It also provides an estimate of the number of anchors or shoreline tiebacks required for that length of boom assuming anchor points are required every 50 feet.

Knot = 1.6 m	nile/hr	or	6,080 ft/hr	or	1.7 ft/sec
		~ -		~ -	

Time to Drift 100 Feet (seconds)	Velocity (ft/sec)	Max. Boom Deflection Angle (degrees)	Boom for 100 Foot Profile to Current (feet)	Anchors if Placed Every 50 Feet (number)
6	16.7	4.0	1,429	30
8	12.5	5.4	1,071	22
10	10.0	6.7	857	18
12	8.3	8.0	714	15
14	7.1	9.4	612	13
17	5.9	11.4	504	11
20	5.0	13.5	429	10
24	4.2	16.3	357	8
30	3.3	20.5	286	7
40	2.5	27.8	214	5
60	1.7	44.4	143	4
>86	<1.2	90.0	100	3

Table A-3. Current Drag Force on One-Foot Boom Profile to Current

The major force exerted on a boom is caused by the water drag on the skirt. Wave forces can increase the drag factor by a factor of two to three depending upon the wave height, period, and loading dynamics. Wind force is less than current and waves bit is also a factor. In high current situations, drag is sometimes increased by water piling upon the boom, causing some submergence and increased drag forces, often resulting in mooring failure. In this situation, the 100-foot section of 4 X 6 diversion boom (4-inch floatation and 6-inch draft) could take the hydrodynamic load. A replacement section 50 feet long was able to withstand the reduced forces with submerging.

The effects of current velocity and boom draft on boom drag force can be seen in the table. Drag increased with draft in a linear fashion while current increased drag more dramatically, to the square of the velocity.

X 7-1	Boom Drag Force			
(ft/sec)	Draft 0.5 Feet	(pot Draft 1.0 Feet	Draft 1.5 Feet	Draft 2.0 Feet
0.8	0.7	1.3	2.0	2.7
1.7	2.7	5.3	8.0	10.7
2.5	6.0	12.0	18.0	24.0
3.4	10.7	21.3	32.0	42.6
4.2	16.7	33.3	50.0	66.6
5.1	24.0	48.0	72.0	95.9
5.9	32.6	65.3	97.9	130.6
6.8	42.6	85.3	127.9	170.6
7.6	54.0	107.9	161.9	215.9
8.4	66.6	133.3	199.9	266.5
9.3	80.6	161.2	241.8	322.5
10.1	95.9	191.9	287.8	383.8
11.0	112.6	225.2	337.8	450.4
11.8	130.6	261.2	391.8	522.3
12.7	149.9	299.8	449.7	599.6
13.5	170.6	341.1	511.7	682.2

Rope Diameter (inches)	Manila No. 1 (3-strand) (pounds)	Nylon (3-strand) (pounds)	Polyester (3-strand) (pounds)
5/16	200 / 1,000	500 / 2,500	500 / 2,500
3/8	270 / 1,350	700 / 3,500	700 / 3,500
7/16		1,140 / 5,700	
1/2	530 / 2,650	1,250 / 6,250	1,200 / 6,000
5/8	880 / 4,400	2,100 / 10,500	1,950 / 9,750
3/4	1,080 / 5,400	2,750 / 5,400	2,300 / 11,500

 Table A-4.
 Approximate Safe Working Loads/Tensile Strength of New Rope

Towing load can be significant when a boom is anchored on one end and pulled against the current. Boats must have sufficient horsepower and be properly rigged to tow. Lines must be capable of withstanding the forces, and the boom must have a tension member capable of high loads. If the boom is extended behind the tow boat and pulled free in the current, there is only the frictional drag along the boom. Because this drag is a function of the boat speed, proper motor size becomes a function of boom size and length, boat size, and water velocity. Although free towing drag is low, when one end of the boom. The boom must be able to withstand the forces. The tension member must not become detached from the boom due to differential expansion.

Attempting to moor a boom in a straight line across a current (90 degrees) is not recommended. The result is a sag in the boom that will trap free floating oil at a point inaccessible to the shore. In swift currents, the resulting forces on moorings can cause large lines of break and present possible safety hazards. The current can be so swift that the boom may tend to dip and become completely or partially submerged. If this happens, the boom's position should be adjusted. The total force on the mooring points will be a combination of the forces caused by current, wind, and waves.

Boom positioning is an important point. The first step is to decide where the boom should be located. It is likely that the boom would be on an angle to the current; therefore, the prime concern becomes the location of the upstream end. If the selected upstream location is inaccessible, a spot further upstream can be used for access and the boat and boom allowed to drift to the selected mooring site. The boom can be secured to trees, stakes, anchors, or other solid objects. Do not attach boom to vehicles of any type or size.

Appendix B

Remediation Option	Pros	Cons	Considerations
Monitored Natural Attenuation	Maintains existing	Potential exposure to chronic low levels (dissolved	How long of a monitoring period/frequency is
	ecosystem structure.	phase) of hydrocarbon contamination.	needed?
Anticipated Duration of Contamination:			
Minimum 1 year of quarterly sampling –	Allows natural	Released oil will not be recovered.	Need a trigger level/point for re-evaluation of
may be up to 5+ yrs as necessary to confirm	processes to degrade		cleanup if MNA is not working; not meeting the
sufficient attenuation trend.	oil.	Requires ongoing monitoring/sampling.	objectives within a certain timeframe.
	Only operation required		Appropriate when NEBA indicates that alternative
	is periodic sampling and		options are potentially more damaging to
	monitoring.		ecosystems and species and there is not an active
			discharge or sheen to waterway.
Source removal - excavation of	Removes oil	Does not remove oil from fractured bedrock.	Must consider impacts to transportation
contaminated soil/rock beyond initial	contamination in soil		commerce, local residents, traffic safety.
excavation of contaminated soils that can	and road matrix.	Need for engineering controls to minimize increase of	
be removed easily (e.g. including road		turbidity into river.	Use applicable Idaho screening level for
matrix, shoreline or to deeper depths)			groundwater protection – used for long-term
Likely Duration of Operations: 0 – 6 months		Rebuilt ecosystem (e.g. river bank and riprap) may not	cleanup.
		perfectly match existing habitat.	
Anticipated Duration of Contamination : 0 –			May require Clean Water Act 404 permit (use of
6 months		May require highway restriction and lane closure,	Nationwide Permit #20).
		extensive heavy equipment and large site footprint.	
			Road Removal:
		May require phases; one lane excavated/replaced at a	Only possible when road corridor is wide enough
		time.	to do safely. Must maintain vehicle passage.
		Requires significant soil disposal	
Install Recovery Wells	Low impact on	Placement of wells may be limited by available space	If recovering from fractured bedrock, requires
Duration of Operations: 0-2 yrs (yield	ecosystems.	and geology. Liquid storage areas may require larger	large interconnected fissures to be effective.
dependent)	,	site footprint.	Recommend consulting geologist.
Anticipated Duration of Contamination:		Requires ongoing operation, maintenance, and	In cases where road matrix is contaminated, but
Ideally oil will be recovered within 0-2 yrs,		monitoring/sampling.	can't be excavated, consider installing recovery
residual (dissolved phase) oil may remain.			wells between the road and the stream.
		Anticipate a low yield of oil from road matrix due to	
		spreading if only skimming oil. May need to pump	Need a trigger level/point for re-evaluation of
		down groundwater to create a cone of depression to	cleanup if recovery wells are not working; not
		enhance recovery, requiring management of large	meeting the objectives within a certain timeframe.
		volume contaminated water.	

		Residual dissolved phase contamination will likely remain. Requires sufficient access for equipment and area for recovery wells between the spill and river.	Mobil oil is the only fraction that is potentially recoverable. Residual saturation cannot be removed hydraulically and pumping should cease when oil recovery ceases.
Interception Trench Duration of Operations: 0-2 yrs (yield dependent) Anticipated Duration of Contamination: 0-2 yrs	If effective, no surface water impact.	Can't use in areas with steep or rocky (riprap) slopes. Requires regular monitoring/sampling and maintenance. Must be able to regularly recover oil in trench – vacuum truck, skimmer or sorbents. Must have understanding of preferential pathway and identified seep location. Requires sufficient access for equipment and area for the trench between the spill and river.	May be installed at toe of road bed or near shoreline. Need a trigger level/point for re-evaluation of cleanup if interceptor trench is not working; not meeting objectives within a certain timeframe.
The following remediation techniques in In fractured bedrock, it is challenging to l connect with subsurface oil contamination	volve introducing a liquid have liquid track the sam on, and it will be impossik	into the subsurface as a means to remove contamina e path twice. All technologies that depend on inputtir ple to determine if all subsurface oil is removed.	ation. ng liquid from behind the spill may or may not
Inject diluted aqueous soil amendments (fertilizer) behind oil to enhance microbial action Duration of Operations: 0-2 months Anticipated duration of Contamination: 2+ yrs	Maintains existing ecosystem, has potential to destroy some or all oil in place. Only operation required is periodic reinjection, sampling and monitoring.	Relies on existing microbial population and ability of subsurface to replenish oxygen. Break down rates likely limited in fractured granite due to low organic content. Will likely take years. Possible release of fertilizer into river. Reinjection may be necessary. Requires ongoing monitoring/sampling	Best to implement before excavated oily soil has been backfilled. Need a trigger level/point for re-evaluation of cleanup if injection is not working; not meeting objectives within a certain timeframe. The constituents and concentrations need to be scientifically determined on a case by case basis using specialists specifically trained in the field of bioremediation. Be cautious of over-dosing and causing downstream algal blooms.

Inject oxidizing chemicals behind oil to	Maintains existing	Requires careful detailed site characterization,	Oxidation of all organic material encountered. This
force redox of TPH	ecosystem, has	screening, and feasibility testing.	will impact microbial life in soil and potentially release into river
Duration of Operations: 0-3 vrs	some or all oil in place.	Will oxidize all organic material encountered.	
			Requires oxidant delivery system that adequately
Anticipated duration of Contamination: 3	Large volumes of waste	Oxidizing agent must contact oil to be effective.	distributes oxidant throughout the target
yrs (residue will remain)	generated.	May require additional chemical catalysts or heat	
		source.	Need a trigger level/point for re-evaluation of cleanup if injection is not working; not meeting
		Failure to account for subsurface heterogeneities or preferential flow paths can cause an uneven	objectives within a certain timeframe.
		distribution of the oxidant, resulting in pockets of	
		untreated contaminants.	
		Oxidant introduction may mobilize fuel contaminants.	
		Micro-fractures within the bedrock can become	
		clogged or congested.	
		Some oxidants cause strong reactions.	
		VOCs may be generated that can be released.	
		Reinjection may be necessary.	
		Requires ongoing monitoring/sampling	
		Unreacted oxidizer could pose threat to aquatic life if it migrates to surface water.	

Geographic Response Plan

Comments/Corrections/Suggestions

Directions: (Make a copy of this before you fill in so you have extra forms.)

Fill in your name, address, agency, and phone number. Fill in the blanks regarding the location of information in the plan being commented on. Make comments in the space provided. Add extra sheets as necessary. Fold in thirds so the address label is visible and tape closed (don't staple).

Name:		_Agency:
Address:		
City:	_State/Province:	Zip/Postal Code:
Phone: ()		
Page Number:	_	
Location on page (chapter, section	on, paragraph) (e.g., 2.	1, paragraph 3):
Comments:		