DRAFT WORK PLAN

FORMER BREMERTON MGP SITE
TIME CRITICAL REMOVAL ACTION ANDINCIDENT ACTION

Prepared for

U.S. Environmental Protection Agency, Region 10, and

U.S. Coast Guard Sector Puget Sound

Prepared by

Anchor QEA, LLC, and

Aspect Consulting

October 2010

DRAFT WORK PLAN

FORMER BREMERTON MGP SITE
TIME CRITICAL REMOVAL ACTION AND INCIDENT ACTION

Prepared for

U.S. Environmental Protection Agency,
Region 10
1200 Sixth Avenue
Seattle, Washington 98101

U.S. Coast Guard Sector Puget Sound
Incident Management Division
1519 Alaskan Way S. Building 4
Seattle, Washington 98134

On behalf of

Cascade Natural Gas Corporation

Prepared by

Anchor QEA, LLC
1423 Third Avenue, Suite 300
Seattle, Washington 98101

Aspect Consulting
401 2nd Avenue S, Suite 201
Seattle, Washington 98101

October 25, 2010

TABLE OF CONTENTS

1 INTRODUCTION 1

2 SITE DESCRIPTION AND PROJECT SCOPE 3

2.1 Work Plan Organization 3

3 OVERVIEW OF INCIDENT ACTION AND TIME CRITICAL REMOVAL ACTION 4

3.1 Time Critical Removal and Incident Action Activities 4

4 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS 6

4.1 Regulatory Coordination 6

5 ACCESS AGREEMENTS 10

6 HEALTH AND SAFETY 11

7 CONTAINMENT AND SPILL RESPONSE 12

8 SITE PREPARATION 13

9 SECURING LOCATION OF 12-INCH PIPE AT BLUFF 14

10 REMOVAL OF 12-INCH PIPE AND SURROUNDING SEDIMENTS 15

10.1 Best Management Practices 15

10.1.1 Best Management Practices Proposed by WDFW 16

11 BACKFILL EXCAVATION AREA 17

11.1 Best Management Practices 17

11.1.1 Best Management Practices Proposed by WDFW 18

12 SITE HANDLING TRANSPORT AND DISPOSAL OF PIPE AND SEDIMENTS 19

13 COMPLETION OF ACTION 20

14 SITE CLOSURE 21

15 OBSERVATIONS 22

16 REPORTING 23

17 SCHEDULE 24

18 REFERENCES 25

DNR-00017969

List of Tables

Table 1 Applicable or Relevant and Appropriate Requirements 7
Table 2 Fill and Cover for Backfill Excavation..... 17
Table 3 Schedule 24

List of Figures

Figure 1 Site Map
Figure 2 Site Access and Staging
Figure 3 Excavation Extent (Under Development)

DNR-00017970

List of Attachments

Appendix A Health and Safety Plan
Appendix B To-be-determined (based on AOC)
Appendix C To-be-determined (based on AOC)

DNR-00017971

1 INTRODUCTION

Discovery of an abandoned and broken pipe in the intertidal area adjacent to the Former Bremerton Manufactured Gas Plant (MGP) and bulk fuel properties (collectively, the "Site"; Figure 1) led to a determination by the U.S. Coast Guard (USCG) and U.S. Environmental Protection Agency (EPA) that and Incident Action and Time Critical Removal Action is required to:

- Quickly determine, secure, and remove an ongoing source of contaminants to adjacent waters
- Address public safety and awareness

Cascade Natural Gas Corporation (Cascade Natural Gas) is entering into an Administrative Order on Consent (AOC) with the USCG and EPA and to implement the Incident Action and Time Critical Removal Action (collectively, Action) under oversight of the USCG and EPA. As defined in an Action Memorandum prepared by EPA (2010, pending), the Action is intended to stabilize the current situation by removing the pipe and a limited amount of sediment that is necessary to protect public health and the environment from an imminent threat (Figure 2). The following key factors have been used to define the horizontal and vertical extent of the planned excavation (Figure 3, under development):

- The extent of grossly impacted sediments.
- The extent of impacted sediments expected to adversely affect human health through the direct contact exposure pathway.
- Minimizing the number of nights that intertidal work is required.
- Placement of clean beach mix that is feathered away from excavation area.
- Minimizing the potential for mobilization of contaminants into adjacent waters.
- Minimizing exposure of the ecological environment to mobilized contaminants.
- The uncertainty regarding the source(s) of the impacted sediments.
- The likelihood backfill replaced within excavations will be recontaminated.
- Recognition that future actions may be performed as Non-Time Critical Removal Actions (NTCRAs) and/or other activities defined after a Remedial Investigation/Feasibility Study (RI/FS) process for the Site is complete.

DNR-00017972

This Work Plan outlines the Action necessary to meet the Statement of Work (SOW) required by the AOC. Deliverables required by the AOC area provided as appendices to this Work Plan (and are still to be determined)

DNR-00017973

2 SITE DESCRIPTION AND PROJECT SCOPE

The Site is located on the north shore of Dyes Inlet in Bremerton, Washington, between Thompson and Pennsylvania Avenues (Figure 1) in West Bremerton. Land use in the Site area is currently industrial and light commercial. Recently, a 12-inch concrete pipe in the intertidal area was observed to be the apparent source of product and intermittent sheens on surface water of Dyes Inlet.

This Work Plan details the Action necessary to control the ongoing release and secure the intertidal area to address public safety. Future response actions will be required at the Site after completion of the Action. Such future actions will be conducted under one or more separate agreements with EPA or the Washington Department of Ecology (Ecology).

2.1 Work Plan Organization

This Work Plan for the Action is divided into the following sections:

- Section 3: Overview of Incident Action and Time Critical Removal Action
- Section 4: Approvals
- Section 5: Access Agreements
- Section 6: Health and Safety
- Section 7: Spill Response/Maintain Containment
- Section 8: Site Preparation
- Section 9: Secure 12-inch Pipe at Bluff
- Section 10: Remove 12-inch Pipe and Surrounding Sediments
- Section 11: Backfill Excavation Area
- Section 12: Handle, Transport, and Dispose of Pipe and Sediments
- Section 13: Contingencies
- Section 14: Site Closure
- Section 15: Observations

DNR-00017974

3 OVERVIEW OF INCIDENT ACTION AND TIME CRITICAL REMOVAL ACTION

Past actions performed by the USCG and EPA have involved investigation of the pipe and surrounding sediment, plugging of the pipe, and installation and maintenance of a system to contain the potential release of product or sheen into Dyes Inlet. The containment system consists of a hard boom, oil absorbent tubes, and a silt curtain. Under direction of the USCG, the containment system is maintained by a contractor who periodically replaces oil absorbent tubes, re-positions the booms after rough water conditions, and confirms the integrity of the pipe plug. This contractor is also on call for spill response in the event conditions warrant such a response. Cascade Natural Gas will assume responsibility for maintenance of the containment system and any necessary spill response as part of the Action.

3.1 Time Critical Removal and Incident Action Activities

The Action, including contingencies, will include six general steps:

1. Locate and plug the pipe as close to the bluff as possible taking special precautions to not impact other unidentified pipes. Spill response capabilities will be in place during these activities.
2. Establish staging area on the uplands immediately above the affected area of the beach and improve access to the staging area by clearing Scotch Broom and shrubs and placing gravel on an existing road (Figure 2). No modification of the shoreline will be performed other than improving temporary access to the beach.
3. Mobilize excavation equipment (for example, a backhoe) to the upper beach area by crane methods[1].
4. Due to the seasonal low tides, which will occur between 2200 and 0600 hours, excavation of the pipe and sediments must occur in 4-foot sections with placement into a lined transfer box to contain any excess water. Spill response capabilities will be in place throughout the excavation activities, including the use of oil absorbent pads in each 4-foot long excavation. Excavated material will be placed immediately

[1] Alternatively, a tracked excavator could access the beach area with minor grading of the top of the ravine. Prior to selecting this method, exploratory digging would be performed prior to the work to ensure that no contaminated fill materials would be mobilized. At the conclusion of the work the slope would be stabilized to control erosion.

DNR-00017975

into a lined transfer box to contain excess water. Pipe sections would be placed in a separate container from removed sediments so any sections containing sludge can be profiled and disposed of separately. Once filled, the box would be lifted to the upland staging area for direct transfer to a truck for final handling (water management), transport, and disposal at a Subtitle D landfill[2].

5. The excavation will backfilled with clean material stockpiled in the upland staging area. The potential for erosion will be mitigated with the placement of silt fences, jute matting, and hydroseed.
6. After completion of the excavation activities, the in-water containment system will be replaced over the excavation area and periodic inspections will be conducted to ensure that the new pipe closure system (at bluff) is effective and no gross contamination (product) or sheening is observed. If such conditions exist, additional actions will be discussed with EPA.

Additional details for key activities are detailed in the following sections.

[2] Alternatively, an excavator at the top of the bank may transfer material to the lined truck or a second lined storage bank at the top of the bank. The appropriate method of transfer will depend on the rate of removal of sediments.

DNR-00017976

4 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

4.1 Regulatory Coordination

Outreach and coordination with federal, state, and local resource/regulatory agencies is underway and will continue during the Action. The USCG and EPA will lead this effort in close collaboration. No federal, state, or local permits will be necessary for the Action because it is a Time Critical Removal Action being performed under an AOC; however, the Action will need to satisfy the substantive provisions of applicable or relevant and appropriate requirements (ARARs). Those ARARs that may apply to the Action are shown in Table 1. Contact information is included for those agencies that have provided feedback to USCG or EPA.

USCG and EPA will also be in contact with interested and affected tribes—in this case the Suquamish Tribe—in order to provide government-to-government consultation on those elements of the Action that may affect natural and cultural resources.

DNR-00017977

Table 1
Applicable or Relevant and Appropriate Requirements

ARAR	Agency	Trigger	Notes
Section 404, Clean Water Act	U.S. Army Corps of Engineers (USACE)	Work in waters of United States, including wetlands	**Contact:** Jess Jordan 206.439.4536 J.Jorda@usace.army.mil Input on BMPs pending
Section 10 Rivers and Harbors Act	USACE	Placing structure or fill in waters of United States	
Endangered Species Act documentation	U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Services (NMFS)	Federal action or permit that affects listed species	Input on BMPs pending
Section 106, National Historic Preservation Act	USACE in consultation with Washington State Department of Archaeology and Historic Preservation, and tribes	Federal undertaking or permit	Input on BMPs pending
Water Quality Certification (Section 401)	Washington State Department of Ecology	Applying for a federal license or permit for any activity that could cause a discharge of dredge or fill material into water or wetlands, or excavation in water or wetlands.	**Contact:** Brad Martin 425.649.7092 425.941.7698 (cell) bmar461@ecy.wa.gov Input on BMPs pending

DNR-00017978

ARAR	Agency	Trigger	Notes
Hydraulic Project Approval	Washington State Department of Fish and Wildlife (WDFW)	Work that uses, diverts, obstructs or changes the natural flow or bed of state waters	**Contact:** Chris Waldbillig 360.874.7258 360.480.8128 (cell) Chris.Waldbillig@dfw.wa.gov Provided BMPs to USCG
Aquatic Use Authorization or Easement Renewal	Washington State Department of Natural Resources (WDNR)	Use of state-owned aquatic lands	Input on BMPs pending
State Environmental Policy Act (SEPA) review	City of Bremerton	Development project greater than $2,500, and not meeting exemption criteria	Input on BMPs pending
Shoreline Substantial Development	City of Bremerton	Work within 200 feet of shoreline that does not meet exemption standards	Input on BMPs pending
Critical Areas Ordinance Compliance	City of Bremerton	Work in or adjacent to designated critical areas (for example, wetlands, streams, and steep slopes)	Input on BMPs pending
NPDES Permit	Washington State Department of Ecology	Construction activity that creates more acres of land through clearing, grading, excavating, or stockpiling of fill material; construction stormwater enters waters of the state	Input on BMPs pending
Emergency Section 7 Consultation	USFWS and NMFS		Input on BMPs pending

Notes:
Under Emergency Response, the USCG and RP will continue to coordinate and communicate with federal, state, and local agencies, so that activities during post-Emergency Response are documented and any required permits can be provided to required agencies.

DNR-00017979

Given that the Action will occur primarily during night hours and will include a lighting system, the City of Bremerton should be briefed before commencement of any nighttime work. Noise should not be an issue, although truck traffic may be a concern for nearby residents; therefore, public notice and outreach prior to nighttime work will be performed.

The Action has the potential to cause inadvertent impacts to natural and cultural resources. As part of a a time-sensitive consultation, the USCG and EPA will develop a list of Best Management Practices (BMPs) to be implemented to minimize the impacts to federally listed species, designated critical habitat, and candidate species. Additional BMPs will be developed to aid compliance with other ARARs. During construction, an on-site environmental coordinator will track daily operations, compliance with the appropriate list of BMPs and other external factors (for example, weather and tides).

DNR-00017980

5 ACCESS AGREEMENTS

EPA has secured the access necessary to implement the Action. Access has been granted by WNDR for the intertidal area, Natacha Sesko for a portion of the upland area, and the McConkey Family Trust for the remainder of the upland area.

DNR-00017981

6 HEALTH AND SAFETY

An umbrella Health and Safety Plan (HASP) has been developed for the Action is provided in Appendix A. The contractor will be required to submit its own HASP (consistent with umbrella HASP), before commencing work at the Site.

DNR-00017982

7 CONTAINMENT AND SPILL RESPONSE

Under direction of the USCG, the containment system is currently maintained by a contractor who periodically replaces oil absorbent tubes, re-positions the booms after rough water conditions, and confirms the integrity of the pipe plug. This contractor is also on call for spill response in the event conditions warrant such a response. Cascade Natural Gas will assume responsibility for maintenance of the containment system and any necessary spill response as part of the Action.

DNR-00017983

8 SITE PREPARATION

Cascade will establish a staging area on the uplands immediately above the affected area of the beach (Figure 2). Cascade will improve access to the staging area by clearing Scotch Broom and shrubs and placing gravel on an existing road. Site preparation activities will be performed during daylight hours. No modification of the shoreline will be performed other than improving personnel access (currently a health and safety concern).

Other activities include:

- Set-up o a forward command and communication center and sanitation facilities (portable toilets)
- Improve temporary access for workers to the beach from the uplands (for example, switch back path or temporary stairway with handrail).
- Install a perimeter silt fence for erosion control
- Stockpile backfill material in upland staging area
- Set-up light plants to illuminate the intertidal area
- Position a boom truck in material transfer area
- Mobilize equipment to the upland staging area

DNR-00017984

9 SECURING LOCATION OF 12-INCH PIPE AT BLUFF

An initial element of the Action will be to excavate at the toe of the bluff to verify the upland alignment of the pipe. The objective will be to locate and plug the pipe as close to the bluff as possible taking special precautions to not impact other unidentified pipes. Before excavation commences, it will be necessary to remove the existing plug at the shoreside location, drain off any water in the pipe, and install a new plug to contain any continuing flow from upland areas. Spill response capabilities will be in place during these activities.

DNR-00017985

10 REMOVAL OF 12-INCH PIPE AND SURROUNDING SEDIMENTS

After the pipe is plugged near the bluff, excavation of the pipe and adjoining sediments will commence at the bluff and then proceed toward the water until the end of the pipe is reached. The excavation will follow the receding tide to maximize the amount of removal during the low tide period. Due to the seasonal low tides, which will occur between 2200 and 0600 hours, excavation of the pipe and sediments must occur in small 4-foot sections. Spill response capabilities will be in place throughout the excavation activities, including the use of oil absorbent pads in each 4-foot long excavation. Excavated material will be placed immediately into a lined transfer box to contain excess water. Once filled, the box will be lifted to the upland staging area for direct transfer to a truck for final handling, transport, and disposal at a Subtitle D landfill.

10.1 Best Management Practices

Potential BMPs that will be observed during excavation activities include:

- Equipment will not be in use while tidal waters occupy the area.
- Fines will not be stockpiled below the ordinary high high water (OHHW) mark. Fines will be transferred to a lined transfer box, which will be isolated from marine waters.
- Oil absorbing pads will be placed as needed to absorb any free product in the excavation trench. Linear silt and oil booms will be set on the outside perimeter of the excavation trench to retain any potential sheen through the first few tide cycles after excavation.
- The Contractor shall be responsible for the preparation and deployment of the Spill Prevention Control and Countermeasures Plan (SPCC).
- Excavation equipment will be decontaminated following each work cycle.
- Construction personnel will limit access to the beach using designated access areas.
- Construction personnel will be trained in hazardous material handling and will be equipped with appropriate response tools, including absorbent oil booms.
- The contractor will inspect fuel hoses, oil or fuel transfer valves, and fittings on a regular basis for drips or leaks in order to prevent spills into the surface water.
- Impacted materials will be removed from the Site and disposed of at an approved location.

DNR-00017986

- Removal of clean sediments and organic matter will be minimized.
- In order to reduce the potential impacts on listed species, as much work as possible will be conducted in dry weather.
- Turbidity and other water quality parameters will be monitored to verify construction activities are in compliance with Washington State Surface Water Quality Standards (173-201A WAC).
- If the excavation activities create excessive turbidity and/or surface sheens that escape the limits of the containment boom, the contractor will cease the activity and make necessary corrections.
- Oil-absorbent pads will be available to be deployed in the event of sheen created during work.

10.1.1 Best Management Practices Proposed by WDFW

BMPs provided by WDFW include:

- Contaminated materials shall be removed from the site and disposed of at an approved location.
- Equipment shall not work while tidal waters occupy the area, with the exception of work being done on a barge in isolation of marine waters such as inside cofferdams or isolated steel sheet pile.
- Fines shall not be stock piled below the OHWL; they shall be placed on a barge or in a skip box, isolated from marine waters and above the OHWL.

DNR-00017987

11 BACKFILL EXCAVATION AREA

After excavation of each trench segment and prior to tide inundation, each excavation will be back filled with 10-inch Streambed Cobbles per Section 9-03.11(2) of the Washington State Department of Transportation (WSDOT) handbook. The backfill will be placed from the bottom of the excavation to within 2 feet of the previous established beach grade. All excavations will be filled prior to tidal inundation. The backfill material will be a well-graded streambed cobble that passes all material smaller than 10 inches. No angular rock will be placed on the beach.

The top 2 feet of excavated area (for example, trench) and any area disturbed by equipment on the beach will be filled or covered with a smaller beach mix similar to the following table.

Table 2
Fill and Cover for Backfill Excavation

Sieve Size	Percent Passing by Weight
2-inch	100
1-inch	60 to 100
1/2-inch	30 to 50
3/8-inch minus	0 to 30

11.1 Best Management Practices

Potential BMPs applicable to backfill activities include:

- Line transfer area with plastic sheeting to catch and spilled material for immediate cleanup by laborers
- The Contractor will be required to use a tightly sealing rehandling bucket and to monitor for spillage during transfer operations.
- Transport trucks will be water-tight and covered during transport to the disposal facility.

DNR-00017988

11.1.1 Best Management Practices Proposed by WDFW

BMPs provided by WDFW include:

- Trench filled back in with clean materials which should meet the following specs:
  - From the bottom of the excavation to within 2 feet of the previous established beach grade should be back filled with 10-inch Streambed Cobbles per Section 9-03.11(2) WSDOT handbook. This material is a well graded streambed cobble that passes all material smaller than 10 inches. No angular rock should be placed on the beach.
- The top 2 feet of trench and any area disturbed by equipment tracks on the beach should be filled or covered with a smaller beach mix similar to the following:

Sieve Size	Percent Passing by Weight
2-inch	100
1-inch	60 to 100
1/2-inch	30 to 50
3/8-inch minus	0 to 30

DNR-00017989

12 SITE HANDLING TRANSPORT AND DISPOSAL OF PIPE AND SEDIMENTS

Once filled, the transfer box will be lifted to the upland staging area for direct transfer to a truck for final handling (water management), transport, and disposal at a Subtitle D landfill. Pre-approval for acceptance at the landfill for the material[3] will be secured before the Action begins.

[3] Pipe sections containing sludge will be containerized separately, temporarily stored on-site, and profiled for disposal after removal.

DNR-00017990

13 COMPLETION OF ACTION

The Action will be deemed complete when the Site Closure, Observation, and Reporting (see the following sections) have been completed.

DNR-00017991

14 SITE CLOSURE

The excavation and disturbed areas will backfilled with clean material stockpiled in the upland staging area. Spill response capabilities will be in place, including the use of oil absorbent pads in each 4-foot long excavation. The improvements to the existing road will be removed at the direction of the landowner (as specified in the Access Agreement) and the potential for erosion will be mitigated with the placement of silt fences. Silt fences will be removed once revegetation is established.

DNR-00017992

15 OBSERVATIONS

The containment system will be replaced over the excavation area and periodic inspections will be conducted to ensure that the new pipe closure system (at bluff) is effective and no gross contamination (product) or sheening is observed. If such conditions exist, additional actions will be discussed with EPA.

DNR-00017993

16 REPORTING

Reporting is to-be-determined, based on the AOC.

DNR-00017994

17 SCHEDULE

A proposed schedule of activities necessary to complete the Action is summarized in Table 3.

Table 3
Action Activities Schedule

Action Element	Start Date	Notes
Mapping, access analysis, and pipe surveying	Oct. 22, 2010	
Low tide inspection of visible pipe and access analysis	Oct. 23, 2010	
Utility locates performed in project area	Oct. 25, 2010	
Locate pipe as close to the bluff as possible	Oct. 27-28, 2010	
Contractor mobilization, access improvements, and staging	Oct. 28-31, 2010	
Equipment mobilization and excavation commencement	Nov. 1-5, 2010	Construction to be completed between 2200 and 0600 due to low tides. Excavation to be backfilled prior to tidal inundation.
Demobilization and site revegetation	Nov. 6-15, 2010	
Closure reporting	Nov. 15, 2010	Closure reporting will be submitted 30 days after the construction has been completed.

DNR-00017995

18 REFERENCES

U.S. Environmental Protection Agency (EPA), 2010 (pending). Action Memorandum.

DNR-00017996

FIGURES

NOTES:

1. Horizontal Datum: WA State Plane North Zone, NAD83, Feet.
2. Site visit performed on October 22, 2010 between 1000 and 1330 hours.
3. Low tide approx. 1115, +5.1' MLLW.
4. Multiple probes conducted by AQ along USCG trench at 6" intervals to depth of 4', no pipe located. Moderate hydrocarbon odor present.
5. Multiple probes conduced by AQ near probe location inside boom. Sheen produced by all.
6. Approximate OHWL estimated by visual observation of vegetation and beach sediments.
7. Aerial photo provided by Google Earth Pro.
8. Base data provided by Aspect Consulting.
9. Site visit data collected using Trimble handheld GPS and base station corrected post-collection.
10. Assumed pipe alignment approximated from probing back at 1' intervals from pipe end location. Probing located pipe towards shore approx. 10'. Line was then projected towards shoreline for estimated aligment. Further probing along alignment to depth of 4' did not locate pipe.

LEGEND

- Assumed Pipe Alignment (Note 10)
- Initial Response Boom
- Trail in Bank
- Concrete Rubble Wall (height varies)
- Bank Top and Toe
- Approx. OHWL (Note 6)
- Historical Pipeline

Feet
0 10 20 30 40

ANCHOR QEA

Figure 1
Site Map
Cascade MGP Emergency Action
Bremerton, WA

\\hamster\gis\jobs_BremertonMGP\Maps\BremertonMGP_SiteRecon_102210.mxd epipkin 10/23/2010 2:24 PM

\\hamster\gis\Jobs_BremertonMGP\Maps\CascadeMGP_revised_staging.mxd epipkin 10/25/2010 2:58 PM

ANCHOR QEA

NOTES:
1. Horizontal Datum: WA State Plane North Zone, NAD83, Feet.
2. Aerial photo provided by Google Earth Pro.
3. Base data provided by Aspect Consulting.

Feet
0 25 50 75 100

Figure 2
Site Access and Staging
Cascade MGP Emergency Action
Bremerton, WA

APPENDIX A
HEALTH AND SAFETY PLAN

APPENDIX B
TO-BE-DETERMINED (BASED ON AOC)

APPENDIX C
TO-BE-DETERMINED (BASED ON AOC)