

# POINT THOMSON

## ENVIRONMENTAL IMPACT STATEMENT

Prepared by

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# Scope of Work Point Thomson Environmental Impact Statement

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## SECTION 1

# Scope of Work

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This Scope of Work (SOW) describes CH2M HILL's technical approach to completing the Environmental Impact Statement (EIS) for the Point Thomson gas cycling project. The following documents and data sources were consulted in preparation of this SOW and associated schedule and budget:

- The requirements of the National Environmental Policy Act (NEPA)
- Council on Environmental Quality (CEQ) Guidelines for NEPA
- *Point Thomson Gas Cycling Project Environmental Report (ER)* (URS, July 2001)
- *Point Thomson Gas Cycling Project Description Revision A (Rev A)* (ExxonMobil, September 2002)
- *Point Thomson Gas Cycling Project Environmental Report Addendum* (URS, July 2002)
- Preliminary data gap analysis by CH2M HILL
- Issues developed through series of meetings with the state, federal and local agencies

The Draft SOW issued in October 2002 was revised after the public scoping meetings, and a review by the U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (COE), and the U.S. Fish and Wildlife Service (USFWS). This revised SOW represents CH2M HILL's best understanding of the issues as of December 2002. However, during the development of alternatives, additional data collection and analysis may be required, thereby resulting in the need to revise this SOW. The response to comments on the Draft EIS (DEIS) may require additional changes. Subsequent revisions will be documented and submitted appropriately as the project progresses.

The five major tasks identified in this SOW include the following:

1. Project Management
2. Data Gap Analysis
3. Scoping
4. Preparation of the DEIS
5. Preparation of the FEIS

## Task 1. Project Management

The CH2M HILL project manager is responsible for ensuring that all project objectives are met. The manager is the primary point of contact with the agencies and the applicant and is responsible for keeping the project team informed on issues that shape the direction and outcome of deliverables.

The CH2M HILL project manager will coordinate with EPA, and keep EPA informed of progress as well as any problems or slowdowns. This will be accomplished through weekly and monthly status reports, weekly status meetings (conference calls), task tracking tool, and regular communication. CH2M HILL will not communicate directly with ExxonMobil; requests for information, as well as deliverables to ExxonMobil, will go through EPA.

Key responsibilities of the project manager includes control of the schedule and cost. Project management activities will be performed in accordance with the Exhibit B Coordination Procedure of the contract (C-60122) between CH2M HILL and ExxonMobil.

**Task 1. Documents/Deliverables:** Project Schedule, Project Calendar, Weekly Status Reports, Monthly Status Reports, Meeting Summaries

## **Task 2. Data Adequacy & Data Gap Analysis**

CH2M HILL is in the process of determining whether available data, provided by the applicant and cooperating agencies, will be sufficient and adequate to complete the Draft EIS. References used to assess data adequacy will include:

- Council On Environmental Quality (CEQ) Guidelines for the implementation of NEPA,
- EPA administrative guidelines for NEPA conformance,
- Applicable Executive Orders, and
- EPA and other federal agency information.

The agencies' administrative guidelines and environmental case law will be applied independently during the review of the ER. Data adequacy will be assessed by NEPA resource and issue category and by individual permit requirements for those resources that have separate compliance requirements. Adequacy will be accepted if the data:

- Characterize the Affected Environment and allow a sufficient analysis of impacts
- Assess impacts adequately
- Satisfy compliance requirements of regulations

We will document the findings of the data adequacy/data gap assessment in the Summary of Information Required, which will be incorporated into the Data Adequacy and Data Gap Analysis Summary document.

Additional data gaps may be identified after the alternatives have been developed, these will be communicated to EPA and addressed immediately. Data gap analysis is integral to the overall EIS process; especially with respect to timely delivery of product and overall schedule.

### **Assumptions**

- The data gap analysis will be based on existing data.
- CH2M HILL will coordinate with EPA to obtain resource documents from the applicant and contractors
- Applicant/Cooperating Agencies will deliver documents in a timely manner from the date of the receipt of the request

- As part of the data gap analysis, CH2M HILL will review the ER Addendum (ExxonMobil, 2002) and provide comments to ExxonMobil.
- Any data gaps identified for the EIS will be filled; EPA will determine whether CH2M HILL or ExxonMobil will develop the information. Additional work will require an amendment to this SOW.
- No additional studies are included in this SOW, any required studies identified in the data gap analysis will require an amendment to the SOW.

**Task 2. Documents/Deliverables:** Summary of Information Required, Data Adequacy and Data Gap Analysis Summary

## **Task 3. Public Involvement and Agency Coordination**

Groundwork for the EIS, as presented in this section, includes the development and implementation of a public involvement plan, scoping process, and coordination with other government agencies. This task also includes revisions to the SOW as necessary.

### **Task 3.1 Public Involvement Plan**

CH2M HILL will develop one draft and one final public involvement plan (PIP) that will describe the public outreach components of the EIS process. The plan will describe the tools used to accomplish the following four goals:

- Effectively engage all potentially affected interests early in the EIS process in order to identify issues that should be researched and analyzed in the course of this study.
- Report back to the public in a credible and understandable manner on those issues and concerns raised.
- Collect comments from the public on the Draft EIS.
- Respond to the public's comments by addressing them clearly and substantially in a Final EIS document.

The first two goals will be fulfilled during the scoping process described in the following section. The last two goals will be accomplished under Task 4 and Task 5.

### **Task 3.2 Scoping Process**

The scoping process includes the facilitation and support required for the public outreach components of an EIS process in compliance with NEPA. The purpose of scoping is to collect input from the public and interested government agencies on the nature and extent of issues to be addressed in the EIS, the range of project alternatives, and concerns regarding potential environmental impacts. For the purposes of this SOW, scoping includes the general public scoping meetings; design, development and administration of a series of scoping tools in a variety of communication mediums; and preparation of the scoping summary report.

### **Task 3.2.1 Scoping Support and Meeting Attendance**

CH2M HILL will assist EPA in preparing appropriate outreach tools to communicate effectively with the target populations. These materials will include:

- A Scoping Newsletter that presents an understandable project description and a clear explanation of the EIS process and opportunities for meaningful public involvement
- An Inupiat language audio tape of the Scoping Newsletter
- A comprehensive mailing list for use through the FEIS
- A website with comment options
- A toll-free project information telephone line
- An EIS project e-mail address for receipt of comments

Public scoping meetings will be held at Kaktovik, Nuiqsut, Arctic Village, Venetie, Barrow, Fairbanks, and Anchorage. The scoping meetings will be structured to obtain input on critical project issues and potential alternatives, and will be advertised as informational, open house/public hearings. CH2M HILL will assist EPA in preparing materials for presentation at these meetings as well as at the government-to-government (G2G) consultations. Materials will include a description of the proposed planning effort and the proposed action, maps showing the project area and land ownership, EIS schedule milestone dates, the purpose and flow of the scoping process, and designated opportunities for public comment. In addition, CH2M HILL will prepare a public notice for each meeting, advertising support, agendas, large-format mapping and graphics support, sign-in and comment sheets, and verbatim transcripts, and Inupiat translation services on-site (in the North Slope Borough villages).

### **Task 3.2.2 Scoping Summary Report**

A Scoping Summary Report will be prepared summarizing and documenting the scoping process for the EIS. The document will also serve as one of the first critical bases of the Administrative Record demonstrating EIS completeness. The purpose of the summary report is to provide the interested parties with a description of the scoping process and what issues and concerns EPA heard these parties raise during scoping.

The summary report will initially include the following:

- A summary of individual scoping comments
- A description of issues identified by the public, tribal, and agency comments

After the working group considers the comments received during scoping, the scoping summary report may be amended to include the following information:

- A list of component options that will be considered in the EIS
- The evaluation criteria, based on issues, that will be used to evaluate component options and select the alternatives to be considered in the EIS
- A draft outline of the EIS

### **Task 3.2.3 Public Reporting**

CH2M HILL will report back to the public on the issues and concerns raised during the scoping meetings. A newsletter will be prepared that gives an account of the meetings and includes a summary of the issues raised as well as other comments received, notification of the public document repository for verbatim transcripts and the Scoping Summary Report, and upcoming public involvement opportunities.

### **Task 3.3 Coordination with other Governments (State and G2G)**

The *Consultation and Coordination with Indian Tribal Governments* (Executive Order [E.O.] 13084) directs federal agencies to establish regular and meaningful consultation and collaboration with Tribal officials in the development of federal policies that have Tribal implications, strengthen the G2G relationships with Indian Tribes, and reduce the imposition of unfunded mandates upon Indian Tribes. EPA Region 10 makes an important distinction between general public involvement and G2G consultation.

CH2M HILL will coordinate and attend G2G meetings in Kaktovik, Nuiqsut, Venetie, Arctic Village, and Barrow. In addition to consultations with Tribal officials, the project team will interact with State of Alaska representatives to share and collect information and receive input during the EIS process.

### **Task 3.4 Develop and Modify Scope of Work**

Modifications to the SOW provided in the CH2M HILL proposal were identified through a series of meetings with the agencies, the applicant, and CH2M HILL. This task captures the costs associated with conducting these SOW meetings and the preparation of draft SOW documents. The SOW will be refined as necessary during the EIS process as new information is developed and/or received.

### **Assumptions for Task 3**

- CH2M HILL will coordinate, plan, and schedule travel for all agency, applicant, and consultant EIS team members for scoping and other required public involvement activities
- The original mailing list will be supplied by the lead or cooperating agencies
- Agencies are responsible for their own travel costs
- CH2M HILL will produce 3 newsletters and 8 website updates
- One trip will be made to each potentially affected community for public scoping meetings; including Kaktovik, Nuiqsut, Barrow, Venetie, Arctic Village, Fairbanks, Anchorage.
- Additional trips may be made to those villages that request G2G consultations in response to the lead agency's invitation to consultation
- CH2M HILL will organize, attend and facilitate a Caribou Information Exchange Meeting in Fairbanks for village subsistence hunters and key scientists



- One CH2M HILL representative will attend one G2G consultation visit to each village/city.
- This SOW assumes two major revisions to the SOW, the first in October 2002, and the second in December 2002.

**Task 3 Documents/Deliverables:** PIP, G2G Consultation Plan, Public Notice for Scoping Meetings, Notice of Intent, G2G Meeting Summaries, Inter-agency Scoping Meeting Summary, Scoping Meeting Transcripts, Summary of Scoping Comments, and Scoping Summary Report (2 Parts), Revised SOW

## **Task 4. Preliminary Draft EIS and Draft EIS**

CH2M HILL will prepare a Preliminary Draft EIS (PDEIS) for review by the EPA, and the Cooperating Agencies. The PDEIS will contain all the components anticipated to be included in the DEIS and will be used to review the content of and approach to developing the DEIS. After EPA and the Cooperating Agencies have reviewed the PDEIS and provided comments, CH2M HILL will revise the document and submit the Draft EIS to EPA, according to the process described below under this task.

A draft Table of Contents for the PDEIS is appended to this SOW. In brief, the PDEIS will include:

- Introduction, including a purpose and need statement
- Description of the proposed action and alternatives
- For each resource area:
  - Description of the affected environment
  - Analysis of the environmental consequences: direct, indirect and cumulative effects of each alternative;
- Comparative analysis of impacts of the proposed action and alternatives
- Description of the irreversible and irretrievable commitment of resources resulting from the proposed action or alternatives
- Description of minimization and avoidance strategies, as well as proposed mitigation measures

### **Task 4.1 Purpose and Need and Project Description**

This task includes the development of the Purpose and Need statement and the Project Description. The Purpose and Need statement will be developed in conjunction with EPA and clearly state to the general public the need for action and how the proposed project will meet that need. The Project Description will accurately and thoroughly describe the proposed action, including its location, proposed facilities, construction activities, mitigating features, future phases and/or connected actions.

## Assumptions

- The information used in the Project Description will come primarily from the ER and ER Addendum, additional information will be provided by ExxonMobil as needed.

## Task 4.2 Develop Alternatives

CH2M HILL will work with EPA to identify a reasonable range of feasible alternatives to be evaluated in the DEIS as required by NEPA. The analysis will rigorously explore and objectively evaluate all reasonable component options to construct alternatives, and for alternatives that were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.

For budgetary purposes, up to six (6) alternatives necessary to comply with NEPA requirements, including the No Action alternative and the ExxonMobil's proposed action, as outlined in *Point Thomson Gas Cycling Project Description Revision A* (ExxonMobil 2002), will be developed. The issues raised during the scoping process will form the basis for developing the component options. In addition, the focus of the alternatives analysis will be to identify alternatives that meet the Purpose and Need of the project.

## Methodology

The following methodology will be used to develop alternatives in conjunction with EPA:

1. Conduct project scoping (see Task 3)
2. Identify project issues based on scoping comments (see Task 3)
3. Identify and define project components
4. Identify and define project options based on scoping comments, agency and professional judgement
5. Develop criteria that will be used to construct alternatives; criteria will be based on scoping comments, Purpose and Need statement, CEQ guidelines, NEPA case law, and related projects
6. Assemble alternatives based on component options that meet the criteria developed as part of step 5

CH2M HILL will meet with EPA, COE, and USFWS to assemble alternatives under Step 6. The meeting will be documented in a meeting summary format for inclusion in the Administrative Record. The meeting summary will include the following topics:

- Issues based on Comments Received During Scoping
- Components and Options Considered
- Alternatives Development Criteria and Methodology
- Alternatives Selected for Evaluation in the DEIS
- Alternatives Considered But Eliminated from Further Analysis, including Elimination Rationale

The meeting summary will form the basis for the alternatives section of the DEIS.

### **Assumptions**

- Up to six (6) alternatives necessary to comply with NEPA requirements, including the No Action alternative and ExxonMobil's proposed action, as outlined in *Point Thomson Gas Cycling Project Description Revision A* (ExxonMobil 2002) will be developed

### **Task 4.3 Topics to be Addressed in the PDEIS**

At a minimum the topics described below will be included in the PDEIS. Other topics will be included, as required by NEPA.

#### **Task 4.3.1 Meteorology and Ambient Air Quality**

**Affected Environment.** The Meteorology and Ambient Air Quality Affected Environment section will describe the airshed and pre-project and post project air quality conditions. This section will include the following items:

- Description of the airshed and baseline air quality conditions
- Topographical/geographical description of the area with maps
- Background air quality data and status of the area.
- Meteorological data and summary including wind speed, direction, stability, mixing height, and other relevant data and factors.

**Environmental Consequences.** Environmental consequences will be described based upon the tasks that are described in the affected environment section. Because the facility design is underway and not complete at this time data inputs and will be based upon conceptual designs and using other similar, existing facilities as analogues for the Point Thompson facility. Where assumptions are required to complete this section in accordance with the PDEIS schedule, the assumptions be conservative. This section will include the following:

- Project description with process schematics/flow diagrams
- Air emissions quantification for criteria pollutants
- Green house gas emission estimates
- Ambient air quality impacts of the proposed emissions as estimated by air quality dispersion modeling, comparison with national ambient air quality standards and PSD Class I and II area increments
- Air quality related values impact on soil, vegetation (including sensitive species), and visibility
- Evaluation of impacts to visibility in Class I areas
- Air quality impacts via deposition to bodies of water

- A description of mitigation measures such as proposed air pollution control technologies

**Assumptions.** This SOW assumes that:

- Data is available and easily obtainable from existing sources that will allow adequate description of meteorological conditions and pre-project air quality.
- The applicant will provide adequate project process descriptions and required engineering data to estimate air emissions from the project.
- The applicant will coordinate air permitting efforts with CH2M HILL
- Data provided to CH2M HILL will be of acceptable quality for air quality impact analysis
- CH2M HILL will coordinate technical aspects of the air modeling tasks with the applicant, Alaska DEC, and EPA

#### **Task 4.3.2 Geomorphology**

**Affected Environment.** The geomorphology affected environment section will include maps showing the existing soils/permafrost, underlying geology, and location of subsurface resources (potential gravel extraction sites and the gas reservoir), based on information available. In addition, geologic processes including snowmelt accumulation, surface and subsurface drainage, ice scour/push and shoreline erosion will be described, and, since the Point Thomson area is tectonically active, a discussion of the seismic activity of the area will be included.

**Environmental Consequences.** The effects of each alternative on geologic processes will be analyzed. For example, interception of drainage by roads or well pads, changes in shoreline erosion resulting from armoring, and the effects of gravel mining and construction spoils deposition will be considered. A qualitative assessment of dust production from construction and operation also will be included.

**Assumptions.** This SOW assumes that:

- Existing maps of soils, topography, and drainage are accurate and detailed enough to facilitate analysis
- Sufficiently detailed engineering plans are available to determine effects of each project alternative on surface and subsurface drainage patterns, erosion and ice scour/push, and permafrost
- Modeling of shoreline erosion and ice scour/push is not included in this SOW
- Available information on gravel processing and road and pad construction will be sufficient to determine potential effects from settling, drainage and permafrost depth.
- The shoreline erosion study is being prepared by ExxonMobil and will be in sufficient detail to allow for analysis of impacts on the applicants proposed coastal facilities.

- Further evaluation of the Pt. Thomson No. 3 closed reserve pit will be conducted, to determine if it will be exposed during CIP and CPF construction, production and abandonment.

### Task 4.3.3 Oceanography

**Affected Environment.** The Oceanography Affected Environment section will describe the following as they exist today:

- Physical Oceanography—currents, waves, tides, river inputs, and sea ice
- Sediment Processes—sediment types and processes
- Marine Water Quality—general hydrographic characteristics, trace metals, and contaminants
- Sediment Quality—general sediment characteristics, trace metals, and contaminants
- Benthic Invertebrates

Existing information for the Point Thomson area and surrounding region is extensive with respect to the marine environment. Preliminary data gap analysis indicates that existing baseline oceanographic information contained in the Environmental Report and from other sources will be sufficient in most cases to prepare the oceanography affected environment section of the EIS.

**Environmental Consequences.** The major project issues that were considered in developing the scope of work with respect to the marine resource areas of physical oceanography, water and sediment quality, and benthic resources included the following:

- Dock design, construction, and marine impacts associated with the construction, maintenance, and long-term effects of the proposed dock.
- Navigation channel dredging near the proposed dock head and impacts to water/sediment quality and benthic resources during construction and maintenance activities
- Disposal of dredge sediments and data needed for modeling and to address concerns with respect to water and sediment quality and impacts to benthic communities as a result of dredge disposal operations

Analyses that will be performed for the environmental consequences section of the EIS include the following oceanographic components:

- Modeling of sediment plumes from dredge disposals at five locations
- Modeling of sediment plume at the dredging location
- NPDES ocean discharge alternative for camp waste
- Examination of dock impacts with respect to oceanography and marine benthos

The Oceanography section will consider potential impacts to physical oceanographic characteristics and coastal processes such as circulation, salinity, and temperature patterns, and to the benthic biological resources. Impacts will be assessed using what is known from construction and operation of existing facilities and modeling exercises.

Dredging of a navigation channel for the proposed dock and disposal of the dredge spoils will be of key importance for determining impacts to the marine environment. This issue will be addressed with the COE/EPA Automated Dredging and Disposal Alternatives Modeling System (ADDAMS) models to determine the size of the impact area, persistence of turbidity plumes, affects on water quality, and impacts on benthic biota communities. Since dredging has not been a prominent component of past projects on the North Slope, it has been determined that the dredge disposal modeling will be required for the EIS. For purposes of this scope of work, it is assumed that open-water disposal at five ocean sites will be examined with the STFATE module of ADDAMS. In addition, the DREDGE module of ADDAMS will be utilized to examine sediment plumes as a result of open-water hydraulic dredging operations at the dredge site. Sediment transport within the barrier islands and its effects on maintaining a navigation channel and subsequent maintenance dredging will be addressed qualitatively.

An offshore NPDES discharge alternative will be developed as part of this EIS. CH2M HILL will examine this offshore NPDES alternative through the use of EPA's PLUMES model for one offshore discharge scenario. Results will be presented in an interpretative discussion for the EIS.

The oceanography environmental consequences section will also address the potential impacts to circulation, hydrography, and water quality of the proposed dock and alternatives. This issue will be a key concern to the public and agencies reviewing the proposed development since the proposed dock could change circulation, salinity, and temperature patterns in the area. Key similarities and differences in the proposed Point Thomson dock versus other causeways in the region (e.g., length and location within the barrier islands) are important and will need to be highlighted to address concerns with respect to potential impacts and cumulative impacts of another causeway structure on the North Slope.

Deliverables for the environmental consequences section of the EIS will include interpretive analyses sections that will discuss the environmental consequences associated with dredging, dredge disposal, and the dock on the physical oceanography, water and sediment quality, sedimentation, and benthic resources. In addition, a separate dredge modeling report will be prepared that includes ADDAMS model outputs in tabular and graphical format that depict the size and duration of the dredge disposal plume and impacts to the sediment resources for each of the five disposal locations. This report will be prepared for inclusion as an appendix to the EIS.

**Assumptions.** This SOW assumes that:

- No additional field studies are required.
- Open-water disposal at five (5) ocean sites will be examined with the STFATE module of ADDAMS.
- NPDES wastewater modeling of the preferred onshore alternative disposal would be part of ExxonMobil's NPDES permit application and would not be performed as part of the EIS.

- The one offshore disposal alternative for wastewater discharge will only be examined to a limited extent with EPA's PLUMES model since it is not a preferred alternative.
- No additional new analyses or oceanographic modeling will be required to address the dock issue.
- Benthic biological resources are limited to those presented in the Environmental Report.

#### **Task 4.3.4 Water Resources**

**Affected Environment.** Hydrologic features and processes within the potentially affected area will be described, including the rivers east and west of the proposed project area, tundra streams, shallow thaw lakes, ground ice, and snowmelt floods. Precipitation, flow volumes during breakup, and storage capacity within the tundra and thaw lakes will be quantified. Aerial photos showing how the locations of surface lakes and streams migrate over time will be included. Freshwater quality will be addressed. Descriptions will be based on information available in the Environmental Report and other existing data sets.

**Environmental Consequences.** CH2M HILL will conduct a qualitative evaluation of potential impacts of the project alternatives to drainage patterns and surface hydrology. Issues of concern include obstruction of flow (roads, well pads, airstrip), wastewater discharge, spills and leaks, water removal for ice roads, gravel mining and gravel pit dewatering, and freshwater quality.

**Assumptions.** This SOW assumes that:

- Water quality impact assessments for NPDES discharge evaluations (e.g., initial dilution modeling) if required, would be part of ExxonMobil's NPDES permit application and would not be performed as part of the EIS.
- Accurate digital mapping of drainages and water courses are available and will be provided.
- No new mapping of water bodies is required.

#### **Task 4.3.5 Biological Resources**

The overall content to be included in the biological resources' affected environment and environmental consequences sections is described below. The content to be included in each specific biological resources topic area follows this information.

**Affected Environment.** The affected Biological Resources will be described based on existing information including data sets collected specifically for the project, regional and site specific data available from the USFWS, ADFG, and the North Slope Borough including habitat maps, and information contained in the Point Thomson Environmental Report (URS 2002). Specific resource areas that will be addressed include: Wetlands and Vegetation, Terrestrial Mammals, Marine Mammals, Avian, and Aquatic Resources (Habitat and Fish). Each resource area under the Biological Resources section will provide a general or specific (depending on the quality and quantity of existing data project) discussion of the relevant ecology of the analysis area and the location and extent of various resources such as wetlands, vegetation communities, breeding habitat, foraging habitat, insect avoidance

habitat, seasonal use areas, and primary movement paths. This section will include sufficient detail regarding federally listed and proposed species to facilitate preparation of a Biological Assessment.

**Environmental Consequences.** This section will address the potential impacts of the proposed project on the biological environment. It will include an assessment of potential effects of direct habitat loss; impacts to movement, reproduction, foraging; and the potential effects of visual (e.g. human, vehicles, light) and noise disturbance. The analysis of potential effects will be founded on site-specific and regional fields studies supported by primary literature and accepted ecological principles.

**Wetlands/Vegetation. Affected Environment.** The affected wetlands environment will include all wetlands and vegetation communities impacted by each alternative, including the proposed action. Vegetation maps illustrating *Arctophila* wetlands and salt-affected coastal habitats in the affected area will be produced from existing vegetation maps, recent reports and publications, and by applying NWGI wetlands inventory methods.

**Environmental Consequences.** The permanent and temporary impacts to wetlands and vegetation communities from the action alternatives will be assessed and described. GIS maps of project footprints will be overlain on the vegetation map to provide estimates of potential habitat losses.

Indirect effects to wetland resulting from changes in surface and ground water hydrology will be estimated. Other effects associated with operation such as "dusting" from vehicle traffic, sediment production from road and gravel pads, and hazardous material spills will be assessed. Rehabilitation plans for the gravel mine, and for a total of 5 abandoned exploratory drill sites in the Pt Thomson Unit will be completed.

**Assumptions.** This SOW assumes that:

- Draft GIS figures will be produced from digital maps provided by the applicant.
- The project footprint for each alternative is provided by the applicant for GIS mapping in one iteration.
- The GIS study area map will be provided by the applicant in one iteration.
- Vegetation data are available from LGL in ArcView or ArcInfo format and are adequate for EIS purposes, including differentiation of *Arctophila* wetlands and salt-affected coastal habitats.
- Only one version of the gravel footprints at toe of berm (polygons) is provided by the applicant for each alternative (ArcView or ArcInfo format).
- Adequate data are provided by the applicant to develop rehabilitation plans for a total of 5 abandoned exploratory drill sites in the Pt Thomson Unit.
- A Determination of Mitigation Under the Clean Water Act Section 404 (b)(1) will be conducted and documented in a separate report in accordance with the 404(b)(1) guidelines (40CFR 230 Subpart B)



**Terrestrial Mammals. *Affected Environment.*** The Terrestrial Mammal Affected Environment section will focus on the habitat, distribution, and movement of caribou, muskox, arctic fox, grizzly bear, and other mammals known to inhabit the North Slope at some time during their life-cycle. Predator behavior will also be addressed. Resources for this section will include recent reports and publications, and agency and applicant data sets particularly regarding caribou observations.

***Environmental Consequences.*** Potential effects to terrestrial mammals from construction and operation of the proposed facility will be considered for each alternative. Direct and indirect effects from human activity (e.g. visual and noise disturbance and vehicles operation), and hazardous material spills will also be considered.

The proposed project and alternatives will be evaluated with respect to what is known about mammal distribution in the area, incorporating impact analyses from other similar North Slope projects.

***Assumptions.*** This SOW assumes that:

- Draft GIS figures will be produced from digital maps provided by the applicant.
- The project footprint for each alternative is provided by the applicant for GIS mapping in one iteration.
- The GIS study area map will be provided by the applicant in one iteration.
- Caribou location data from baseline aerial transect surveys are provided in digital form by applicant.
- Caribou telemetry location data are provided by ADFG & USFWS.
- Muskox/moose/bear sighting locations from baseline aerial transect surveys are provided by applicant.
- Muskox and grizzly bear telemetry locations are provided by USFWS and ADFG.
- Fox den locations from applicant's 2001 and 2002 field work are provided.

**Marine Mammals. *Affected Environments.*** The affected environment section for marine mammals will summarize information from recent reports and publications to describe the distribution, feeding and mating habits, and migration patterns of the whales, seals, walrus' and polar bears that inhabit the Beaufort Sea.

***Environmental Consequences.*** This section will address potential impacts of the proposed project and alternatives to marine mammals, including direct impacts and the effects of sea vessel traffic, air traffic, construction and operation of the ice roads, and human activity on the habitat and behavior of marine mammals.

***Assumptions.*** This SOW assumes that:

- Draft GIS figures will be produced from digital maps provided by the applicant.
- The project footprint for each alternative is provided by the applicant for GIS mapping in one iteration.

- The GIS study area map will be provided by the applicant in one iteration.
- Polar bear den locations, beluga whale sightings, date and location of bowhead whale strikes for Kaktovik and Nuiqsut, and autumn migration patterns of bowheads are provided in digital form by applicant and by agencies (USFWS, MMS, NMFS, NSB).

#### **Avian.**

**Affected Environment.** This section will describe species distribution, seasonal movements/activities, and habitat use for various water birds, seabirds, shorebirds, and passerines, based on information from recent reports and publications.

**Environmental Consequences.** The potential direct and indirect effects on habitat use, productivity, and potential mortality from each alternative will be analyzed. Activities that may have an impact include:

- Alteration/disruption of habitat components, particularly wetland and pond habitat
- Human activity (e.g. visual and noise disturbance and vehicles operation)
- Construction and operation
- Hazardous material spills
- Facility lighting and structures that may cause disorientation and collisions

**Assumptions.** This SOW assumes that:

- Draft GIS figures will be produced from digital maps provided by the applicant.
- The project footprint for each alternative is provided by the applicant for GIS mapping in one iteration.
- The GIS study area map will be provided by the applicant in one iteration.
- The applicant will provide any data collected since 2000 on Long-tailed Duck distribution from aerial surveys and data from shorebird breeding plots in the Point Thomson area.

**Aquatic Resources. Habitat. Affected Environment.** Freshwater and marine habitat will be described in this section with respect to summer feeding, migratory routes, and over-wintering space.

**Environmental Consequences.** Potential impacts to marine and freshwater fisheries habitat will be assessed and described for each alternative. Impacts to marine fish habitat will be predicated on the results of the Oceanography section and will include the effects of dredging, disposal, the dock, and sea traffic. Impacts to freshwater fisheries habitat that will be considered will include sediment production, stream crossing and culverting, and water removal for ice road construction. The potential impacts of a hazardous materials spill will be considered for both freshwater and marine habitats. A determination of the impacts of each alternative on Essential Fish Habitat (EFH) will be conducted.

**Fish. Affected Environment.** This section will describe the population distribution, movement, behavior and other life history traits of the major freshwater and marine fish that spend some part of their life cycle in the waters of the Beaufort Sea or the freshwater system of the North Slope.

**Environmental Consequences.** The potential impacts of each alternative on marine and freshwater fish will be considered. The impacts on fish movement, behavior, and other life history traits from the proposed dock, dredging, spoils disposal and sea vessel operation will be described. Freshwater fish impacts that will be analyzed include impacts to passage and potential effects of increased suspended and bedload sediments. The potential impacts of a hazardous materials spill will be considered for both freshwater and marine fish.

**Assumptions.** This SOW assumes that:

- The project footprint for each alternative is provided by the applicant for GIS mapping in one iteration.
- An Essential Fish Habitat Assessment for compliance with the Magnuson Stevens Fishery and Conservation Act is included.

**Biological Assessment.** A Biological Assessment (BA) will be prepared to fulfill the requirements of Section 7 of the Endangered Species Act (ESA). The BA will consider potential impacts to bowhead whale and spectacled eider. It will provide recommendations of finding of effects for EPA's approval. Sensitive information regarding locations and important habitat areas will not be included in the EIS.

**Assumptions.** This SOW assumes that:

- Eider and bowhead whale sighting locations will be provided in digital form by applicant and agencies (includes USFWS data for 2002 aerial survey for spectacled eiders and any 2001–2002 eider data collected by TERA [or other consultant] in project area).
- The project footprint for each alternative is provided by the applicant for GIS mapping in one iteration.
- The GIS study area map will be provided by the applicant in one iteration.
- Sensitive information regarding locations and important habitat areas of T&E will not be included in the public distribution copy of the EIS.

#### **Task 4.3.6 Visual**

**Affected Environment.** Existing conditions will be identified in the project area that could be changed substantially by one or more of the project alternatives. Information will be collected to provide a description of existing baseline conditions for use in the discussion of potential visual quality impacts.

The viewshed for each of the proposed alternatives will be mapped using existing topographic and land cover information and the proposed vertical and horizontal alignments of the alternatives. This defined viewshed will be the study area for the aesthetics and visual impact analysis.

The landscape units will be defined within the viewshed by topography and differences in the vegetative context. Significant visual features and landmarks within each landscape unit

will be located and the intrinsic qualities that characterize each landscape unit will be described in text form. Specific resources to be defined include:

- Character of existing development including topography, vegetation, land use/subsistence patterns, community identity.
- Refuges and other recreation areas.
- Areas of special visual or aesthetic character including shoreline views and distant scenic views.
- Landmarks or clusters of development that help define the visual character of an area or its historic nature

Key observation viewpoints (KOV) will be identified and mapped. The selected KOV's will be used as existing conditions in the development of simulations of the proposed project alternatives.

The following KOV's are anticipated and budgeted for in this SOW:

- Offshore (Flaxman Island)
- From Canning River tundra bench area
- From Kaktovik village
- From the air

Potential viewer groups will be identified within the study area through a review of demographic data, existing information provided by ExxonMobil, North Slope Borough, ANWR, and the public participation process. Viewer groups are anticipated to include:

- Local residents
- Subsistence use in the area
- Business people and their customers
- Individuals visiting the ANWR
- Other interested parties identified through the public participation processes
- Wildlife

**Environmental Consequences.** The visual resources section will investigate, assess, rank, and describe the potential visual quality and aesthetics impacts that could occur under each alternative. Methods used to assess potential visual impacts during construction and operation are described below.

Photo visual simulations based on aerial photographs will be prepared to present the appearance of specific alternatives as viewed from the air. The methodology to be used for visual simulations will be coordinated with the public involvement leads to ensure that the products produced will serve multiple functions EIS preparation and public presentations. If adequate photographs are available from USFWS and ExxonMobil photo simulations will be developed from up to four Key Observation Viewpoints.

A written analysis of the visual impacts of each alternative as observed from the KOV's will be prepared within each landscape unit will be identified by combining the level of change and viewer sensitivity evaluation information.

An analysis will be conducted of the viewer sensitivity to the potential change associated with each alternative. Key viewer sensitivity factors will include; viewer numbers, viewer position, viewer activity, frequency of viewer exposure, view duration, and cultural significance.

**Assumptions.** This SOW assumes that:

- No more than 5 viewer groups for analysis
- No more than 4 separate viewpoints will be assessed
- No site visits will be necessary; air photo images and vegetative analysis will be used to divide the project viewshed into a series of landscape units
- Digital base maps compatible with ArcInfo/ ArcView which illustrate detailed site topography and delineate the shoreline are available. USGS mapping will be used to supplement gaps in topography data.
- Specific land use mapping is available in a digital format compatible with ArcInfo/ ArcView.
- Current human access patterns are available from the USFWS and the North Slope Borough.
- Construction and operation access points are available from the ExxonMobil
- Current aerial photographs of existing conditions for the analysis area are available.
- Design features of alternatives, including horizontal and vertical dimensions, information for each alternative, structure elevations, preliminary design of access, docks, borrow sites, towers including flares, temporary construction cranes, ventilation risers, lighting intensity, height, color and operation duration, will be available.
- ExxonMobil will provide artistic renditions of the site, and where necessary for visual simulations, CADD drawings of preliminary engineered facilities comprising the project.
- Photos will be provided by others to allow the production of three photo simulations of three existing view points and the three view points with the proposed development.
- One photo simulation will be prepared utilizing an aerial photo overlaid on GIS/USGS topography. This mapping will be prepared for overlay of the proposed development (proposed facilities 3D renderings will be provided by ExxonMobil). Four aerial perspective before and after views will be produced.
- USFWS will provide one or more photographs of the tundra beach area and the Canning River with views towards the proposed facility.

#### **Task 4.3.7 Noise**

**Affected Environment.** CH2M HILL will identify the noise-sensitive areas in the vicinity of the project area based on information provided by ExxonMobil. It is anticipated that the noise-sensitive areas will include campsites within the Arctic National Wildlife Refuge

(ANWR) utilized by boaters and hikers visiting the area, and known sea and land wildlife species habitats in the general project area.

Based on existing documentation pertaining to the North Slope area, environmental reports developed for other projects in the immediate area, and other available literature, CH2M HILL will characterize the existing ambient noise environment in the project area. Estimation of background noise levels at identified noise-sensitive areas will be developed and documented.

CH2M HILL will identify all federal, state or local noise regulations which may be applicable to the project. The regulatory information will be used to develop significance thresholds for determination of human noise impacts. It is anticipated that the human threshold of significance will be based on criteria established by USEPA's Office of Noise Abatement and Control March 1974 report titled "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." Biological thresholds will be determined in consultation with the biological environment project team.

**Environmental Consequences.** CH2M HILL will evaluate project-related operational noise exposure at noise-sensitive areas near the project area. Project noise impacts will be evaluated for both on- and off-shore sources of noise. Key sources of operational noise from the proposed project are expected to be as follows:

- Operations at the Central Processing Facility
- Dredging operations
- Sea lift operations
- Air Traffic

To determine the potential noise impact of the proposed processing facility on nearby noise-sensitive areas, CH2M HILL will evaluate noise levels from the proposed turbines and compressor units based on sound power level, far-field sound pressure level data provided, or on sound level measurements/evaluation of a similar facility in service elsewhere. Data shall be provided by ExxonMobil. CH2M HILL will estimate the noise impacts from supplied data. If noise modeling proves to be the only option for evaluating noise from the proposed facility, ExxonMobil shall provide CH2M HILL with a conceptual facility layout in AutoCAD that has the locations of major noise sources, including the turbine and compressor units, identified.

The noise impact analysis will be performed by applying appropriate acoustical methodology to the reference noise levels (manufacturer data or measured data). The plant noise modeling will be performed using the CADNA/A noise model. CADNA/A is based on the ISO 9613-2 propagation algorithms which account for distance attenuation, atmospheric absorption and local terrain effects.

The noise impacts from aircraft will be evaluated using an approved FAA noise model. ExxonMobil will provide all necessary data required to conduct the aircraft noise analysis. This is anticipated to include at a minimum estimated flight path, aircraft type and number of existing and proposed trips. It is not anticipated that subterranean or aquatic noise impacts will require modeling or quantitative evaluation.

The projected facility noise levels would then be combined with estimated background noise levels to determine the overall noise levels at noise-sensitive areas identified in Affected Environment.

Noise exposure due to other operational sources of noise, such as dredging, and sea lift, will be developed based on information provided by ExxonMobil.

**Construction noise** effects of the proposed project, including drilling and pipeline construction, will be addressed at the nearest noise-sensitive areas to the project site and along the pipeline corridor. Evaluation of construction noise exposure will be based on previously-published construction equipment noise level data and primarily based on noise attenuation due to distance. Reference noise levels will be derived from the 1977 "Power Plant Construction Noise Guide." Noise levels from project-specific construction equipment will be used in the evaluation if sound power level data is provided by Exxon Mobil. Construction noise levels will be identified at locations identified in Affected Environment.

Calculated project operational and construction noise levels will be compared to the thresholds established in Affected Environment.

**Assumptions.** This SOW assumes that:

- No field studies will be performed.
- ExxonMobil will provide information on equipment, machinery and facility design, construction and operation parameters sufficient to estimate noise regimes during construction and operation.
- USFWS will provide locations of noise sensitive areas within ANWR.
- North Slope Borough will provide culturally important noise sensitive areas.

#### **Task 4.3.8 Land Use/Recreation**

**Affected Environment.** In order to identify and describe existing land use and federal, state and local land management in the project vicinity we will consider the following documents:

- North Slope Borough (NSB) and Alaska Coastal Management Programs
- NSB Title 19 Land Management Regulations
- NSB Comprehensive Plan
- ANWR Comprehensive Conservation Plan

This section will describe the overall Land Management and Regulations for the Point Thomson area. In addition, pending land use policy proposals within or near the project area will be determined by contacting federal, state and local officials (including ANWR and NSB) to identify pending land use proposals within the project area. Officials expected to be contacted include:

- USFWS, manager of ANWR
- Bureau of Land Management (Native allotments)
- Alaska Department of Natural Resources
- NSB (including communities of Nuiqsut and Kaktovik)

In addition, the types and intensity (user numbers) of recreational use, location and time of year will be identified. Activities we expect to identify will primarily be limited to:

- Floating the Canning River
- Camping in ANWR

**Environmental Consequences.** CH2M HILL will define the consistency of the project with existing land uses and with federal state and local comprehensive and management plans within and surrounding the project area. We will also define the direct land use impacts of each of the alternatives with respect to existing land uses and land uses that are proposed within the federal, state and local plans.

In addition to defining consistency and impacts within the purview of these plans and regulations, this section of the EIS will also address the consistency and impacts of the project with respect to subsistence and traditional land use patterns.

The impacts of the project to both the designated recreational areas adjacent to the project and to the recreational users will also be defined here. The primary recreation area in the project vicinity is ANWR, where recreational use consists primarily of hikers and floaters within the Canning River canyon. For recreation, impacts such as air quality, noise and light intrusion may be more important than direct physical impacts, Therefore the analysis will draw upon the conclusions reached in the air quality, visual, and noise analysis. Secondly it is important to establish the consistency of the project with management plans applicable to ANWR.

CH2M HILL will determine the consistency of the project with applicable land use/recreational plans and identify any conflicts with adopted plans. To avoid conflict with any pending plan, federal, state and local officials (including ANWR and NSB) will be contacted to identify pending land use proposals within the project area. Officials expected to be contacted include:

- USFWS, manager of ANWR
- Bureau of Land Management (Native allotments)
- Alaska Department of Natural Resources
- NSB (including communities of Nuiqsut and Kaktovik)

Activities most likely to affect recreational users will be identified and the magnitude and duration of the impacts determined. This assessment will be based on and supported by the information in the Air Quality, Noise and Visual sections of the EIS. We expect that these activities would include airplane flights, ocean traffic, drilling and operation of wells.

In order to determine consistency with ANWR Plans all recreational related plans and policies related to ANWR will be compiled and reviewed relative to the each alternative. Plans expected to be used in the analysis include: Comprehensive Conservation Plan, Wilderness Review, and Wild River Plans. An assessment of consistency with relevant sections of the plan(s) will be prepared.

Traditional land use patterns/activities will be identified in the Traditional Knowledge/Subsistence section. Potential impacts on traditional resources within identified



land areas associated with specific subsistence resources and activities will be determined for each alternative.

**Assumptions.** This SOW assumes that:

- Recreational data will be provided by USFWS
- The analysis of subsistence and traditional land use will rely on communications derived through scoping meetings and other public involvement meetings conducted through the NSB.
- Project options and alternatives as designed will be found consistent with applicable federal, state and local plans and policies.
- Potential consistency conflicts of the project with proposed comprehensive and management plan policies and requirements will be identified.

#### **Task 4.3.9 Socioeconomics**

**Affected Environment.** Socioeconomic analysis will be conducted to determine the existing conditions within the affected communities and affected entities. Data developed will include information on employment, population (including age structure and workforce), and income including the economic assessment of subsistence activities. The analysis will include the communities of Kaktovik, Nuiqsut, Arctic Village, Venetie, and Barrow, a regional analysis of the North Slope Borough and the State of Alaska.

**Environmental Consequences.** Socioeconomic impacts of each alternative (if they differ) will be assessed at the community level for Kaktovik, Nuiqsut, Arctic Village, Venetie and Barrow. The analysis will include effects on local economy's and incomes associated with employment from construction and operation of the project, capital construction costs and location of expenditures as well as a calculation of the fiscal benefits to the North Slope Borough and the State of Alaska. The analysis will include the link between the community economy of the affected villages and their subsistence activities. The economic impacts of any adverse effects on subsistence activities will also be considered.

**Assumptions.** This SOW assumes that:

- No visits to the affected communities are planned to collect data.
- ExxonMobil will provide estimations of the location and timing of work, types of skills needed by location, number of temporary (construction and operation start-up) and permanent staff that will be required, estimations of salary information and overall payroll, and capital expenditures.

#### **Task 4.3.10 Cultural Resources, Subsistence, and Traditional Knowledge**

**Cultural Resources. Affected Environment.** This section will identify and describe cultural resources, such as traditional cabin sites, camp sites, burial grounds, traditional subsistence harvest sites, and other traditional land use locations in the area of potential effect. Archeological and historical sites will be considered as well as continued access to them. Information will be obtained through review of the Office of History and Archaeology Alaska Heritage Resources Survey (AHRs), North Slope Borough (NSB) Traditional Land

Use Inventory (TLUI), and archeological survey reports for the Point Thomson area. In addition, the U. S. Department of Interior Minerals Management Service (MMS) historic shipwreck database will be consulted for the presence of known shipwrecks in the vicinity. A map showing the location of AHRs and TLUI sites in relation to the project area will be prepared. Due to confidentiality reasons, the map will likely not be included in the EIS.

**Environmental Consequences.** Using the resource map and available information, impacts of the proposed project and alternatives to the various cultural resources in the area of potential effect will be assessed. A Section 106 compliance review, including any consultations and field surveys (e.g., ROW for airstrip and road, mine site, and 25-foot contour line) as recommended by the State Historic Preservation Officer (NHPA), will be completed.

**Assumptions.** This SOW assumes that:

- Information for this section will be available from existing literature, database resources/inventories, and local consultation.

**Subsistence. Affected Environment.** This section will provide specific descriptions of the current subsistence use areas and practices of the Nuiqsut, Kaktovik, Arctic Village, Venetie, and Barrow residents to the extent that data are available. This section will focus on the subsistence use area and practices that could be potentially affected by the Point Thomson project. Information and harvest data will be obtained from the Alaska Department of Fish and Game (ADF&G) Division of Subsistence and North Slope Borough (NSB) Department of Wildlife Management subsistence reports and data. Additional information will be obtained from the caribou meeting with participants from each of the villages, and additional interviews or workshops as necessary. At a minimum, additional fieldwork will be conducted in Kaktovik.

**Environmental Consequences.** The major issues with respect to the proposed project and alternatives that will be considered in this section include:

- Effects from pipelines, drill pads, and roads on the migratory and calving habits of the caribou herds and how that affects accessibility of hunting areas particularly along the coast
- Impacts of the dredging and dock on fish and marine mammal subsistence harvests and uses.

These impacts will be assessed using information from the literature and existing data, workshops, meetings, and focussed interviews (at a minimum in Kaktovik).

**Assumptions.** This SOW assumes that:

Information for this section will be available from existing literature, database resources/inventories, workshops, and fieldwork.

**Traditional Knowledge.** Traditional Knowledge (TK) encompasses contemporary indigenous knowledge and includes expertise on weather, sea ice, snow, ocean currents, fish and wildlife organisms and behavior, historic and current uses of land and water for subsistence

activities and other uses, and impacts of human activities on wildlife and the environment. Traditional knowledge will be acquired from the following data sources:

- Traditional Knowledge of the North Slope database that Ukpeagvik Iñupiat Corporation (UIC) Science Division is preparing for the MMS.
- Northstar EIS TK Database
- Testimony from North Slope oil and gas lease sales (dating from 1979).
- NSB Iñupiat History Language and Culture publications
- Bowhead whaling and the Cross Island bowhead whale task that is part of the MMS Arctic Nearshore Impact Monitoring in the Development Area [ANIMIDA] study.

Focused interviews with knowledgeable residents of Kaktovik specific to the Point Thomson Project will provide:

- Information on the physical, biological, and human environment in the vicinity of the project
- Informed views related to the potential impacts, if any, of the proposed project
- Issues and concerns related to oil/gas activities
- Any observations regarding project design, construction, and operation characteristics based on TK

Traditional knowledge relevant to the project alternatives will be incorporated into the Cultural Resources and Subsistence sections, and be provided for integration into other sections of the EIS.

**Assumptions.** This SOW assumes that:

- One field trip to Kaktovik will be required.
- Information for this section will be available from existing literature, database resources/inventories, workshops, and fieldwork.

#### **Task 4.3.11 Product Spill Risk Analysis**

This section will present the probability of a spill based on the type and number of extraction, transfer (pipelines) and injection facilities; characteristics of the gas field; and the design elements of the proposed facility intended to reduce the probability of a spill. The type, quantity, and location of material spilled will also be estimated based on facility design, past experience, and professional judgement.

The physical and chemical characteristics of the spill material, as well as its behavior in the various environments, will be discussed. Environmental fate, e.g. breakdown and weathering, will be included in this assessment.

For an expected spill type and volume and a worst case spill, the potential effects on humans, aquatic resources (wetlands and aquatic fauna), marine resources (fish, benthos,

and marine mammals) and terrestrial resources (vegetation, terrestrial animals, and birds) will be assessed based on the published literature.

**Assumptions.** This SOW assumes that:

- ExxonMobil will provide facility design and operation details and materials information necessary for the assessment
- ExxonMobil will provide the chemistry of the extracted materials.
- ExxonMobil will provide estimated volumes and locations of contained material (e.g. fuel, lubrication and cooling oils) and storage method.

#### **Task 4.4 Preliminary Draft EIS Production**

The individual subdiscipline reports and appendices will be compiled and formatted into a document with the introductory sections. A section that summarizes the cumulative effects, and a section that presents the summary and comparison of alternatives will be completed under this task. This document will represent the body of the PDEIS. Other materials such as title page, table of contents, lists of figures, tables, and maps, and a “Dear Reviewer” letter will be prepared, collated with the above material, and submitted as the PDEIS to EPA and USFWS/COE and ExxonMobil for review and comment.

CH2M HILL will use ArcView to develop display figures and conduct analysis. Maps produced for the EIS will be developed from existing basemaps. Basemaps will be provided in a format compatible with ArcView and will include data dictionaries.

Material determined by EPA to be directly relevant to public review will be included as Appendices. Other pertinent project information will be maintained as part of the Administrative Record. Appendices will include:

- List of Preparers
- List of Agencies/Organizations
- Index

#### **Task 4.5 Draft EIS**

##### **Task 4.5.1 Draft EIS Development and Production**

Following completion of the PDEIS, CH2M HILL will provide a standardized electronic comment tracking sheet for internal comments from the Lead Agency and other reviewers. CH2M HILL will arrange, attend, and facilitate meetings with the EIS team to review the PDEIS and receive comments from reviewers. CH2M HILL will review the comments and prepare a summary of the major topic areas, and a response to comments. These documents will be reviewed and approved for distribution by the EPA.

Reviewers will independently review the PDEIS and attend a meeting to discuss the comments on the submittal. Reviewing agencies will consolidate their comments on a single electronic response form (one set of response for each responding agency) and submit the form to the EPA and CH2M HILL before the meeting. The review meeting will be held over a 2-day period in Anchorage, and will be attended by up to three CH2M HILL team members.

The PDEIS will be revised based on review comments received from EPA and cooperating agencies, then resubmitted to EPA and USFWS/COE for a clearance to print. Upon receipt of the clearance to print order, 150 copies of the Draft EIS will be printed and distributed to an approved list of recipients.

Agency review of the DEIS will be limited to reviewing responses to comments on the PDEIS. CH2M HILL will attend up to 17 additional monthly meetings in Anchorage to coordinate with the EPA during the development of the DEIS.

#### **Task 4.5.2 Executive Summary**

Prior to finalizing the DEIS, CH2M HILL will prepare an Executive Summary (ES) that summarizes the DEIS impacts, conclusions, areas of controversy, and issues to be resolved, if any. In addition, the ES will be preceded by a cover sheet that includes: (1) Name of Lead Agency, (2) Title of Proposed Action, (3) Lead Agency contact, (4) Designation as an DEIS, (5) A one-paragraph abstract, and (5) Due date for comments. The ES will also include a table summarizing impacts by resource area and alternative (including the No Action Alternative and the proposed Action).

#### **Task 4.5.3 Prepare Notice of Availability (NOA)**

CH2M HILL will prepare the NOA for the DEIS. After obtaining comment on the draft NOA, CH2M HILL will finalize and arrange for the NOA to be published in local newspapers and mailed to parties identified by the Lead Agency. CH2M HILL will assist the Lead Agency in coordinating placement of the NOA in the *Federal Register*.

#### **Task 4.5.4 Public Hearing Support**

Subsequent to the release of the DEIS, CH2M HILL will provide logistical support for up to seven meetings in support of the DEIS. The meetings will be held in the following sequence: Kaktovik, Nuiqsut, Barrow, Venetie, Arctic Village, Fairbanks, and Anchorage. These meetings be held approximately three weeks after the release of the DEIS to accommodate adequate public review and to allow for initial development of public responses during the comment review period. CH2M HILL will provide the following support: a pre-meeting newsletter, public notice, display advertising, village flyers, agenda development, large format mapping and graphics support, hand-out design and reproduction, sign-in and comment sheets, and summary transcripts. If requested, facilitation support will be available.

**Task 4. Documents/Deliverables:** Draft Project Description, Annotated Outline for EIS, Section 404(b)(1) Analysis, Biological Assessment, Essential Fish Habitat, PDEIS, DEIS, NOA

## **Task 5. Prepare Final EIS**

### **Task 5.1 Administrative Record**

The purpose of the Administrative Record is to provide EPA a legally defensible record that will allow the agency to effectively disseminate information requested by stakeholders under the Freedom of Information Act (FOIA) and to support EPA defense against any

potential legal challenges that may occur during or after the life of the Point Thomson EIS project.

EPA expects that it may be required to retrieve sets of documents accurately reflecting stakeholder requests or for internal needs for a minimum of 5 years after project completion. The Administrative Record will be designed to support that need. Our approach to maintaining and managing the Administrative Record is described below.

All CH2M HILL and subconsultant technical staff developing deliverables for the Point Thomson EIS will forward lists of documents in support of their required deliverable to administrative staff responsible for inventorying and cataloguing documents for the administrative record.

Administrative staff will make an initial inventory and catalogue of documents in simple Excel spreadsheets. Major categories of documents to be included in the administrative record will include:

- Date received
- Date of document
- Document type
- Document category
- Author name/Affiliation
- Freedom of Information Act (FOIA) exempt
- Key words

Once an initial catalogue is developed, staff trained in *Zasio* will enter this and finer levels of information into *Zasio* software. This includes loading of documents already in electronic form into the software.

*Zasio* has powerful controls on individuals having access to the information contained within, for example the ability to restrict access per document, and to designate read only or input access capability. CH2M HILL will develop access strategies in concert with EPA and ExxonMobil upon completion of staff training in the use of *Zasio* and initiation of the database.

In order to control costs within a realistic budget, as well as to provide a legally defensible record for EPA's use, CH2M HILL will include in *Zasio* and manage the following types of documents.

- CH2M HILL will include in the Administrative Record those documents that are conclusory but not include those that are deliberative. Conclusory documents include completed technical studies, final documents that reach decisions through the completion of mandated processes, or that make formal decisions and select and determine courses of action. Deliberative documents are those where issues are in flux, decisions have yet to be finalized, alternatives selected, or courses of action set.

CH2M HILL as part of this contract further proposes to include only the following categories of documents at this time:

- Technical studies in direct support of the Point Thomson EIS.

- Technical studies done for other EISs or for other purposes which answer basic questions in support of this EIS and which preclude the need for additional research in that subject area.
- Technical studies or other EISs, portions of which may serve as surrogates for data needed to support the Point Thomson project, which would otherwise need to be developed and analyzed for this project. An example would be an analysis of traditional knowledge done for another EIS that would apply without modification to this project.
- The Scoping Meeting Summary.
- The DEIS, FEIS and ROD.
- Public Comments on the DEIS and Public Hearing.
- Transcripts of the Scoping meetings and the Public Hearing.
- All Final Monthly Meeting Minutes.
- All Final Interagency Coordination meetings.
- All Final Status Meeting Minutes.

*Zasio* is a full electronic data management system (EDMS) with a high level of functionality. CH2M HILL will not make full use of the EDMS capability as part of this work scope. CH2M HILL as part of this scope of work will enter the most relevant sets of key words for document types into *Zasio* for retrieval.

CH2M HILL will provide all of the labor for creating and maintaining the Administrative Record and will store all of the electronic files and paper files at its offices for the duration of the project.

Upon completion of the Point Thomson EIS, CH2M HILL will submit all physical and electronic files to EPA, along with the document management software from *Zasio*.

## **Task 5.2 Work Products**

An Administrative Record of the Point Thomson EIS project consisting of the physical and electronic files and the *Zasio* Document Management software to EPA for the documents and categories of documents described in the Methodology above.

These would include the technical studies prepared to support the analysis and conclusions of the EIS. These would also include technical studies for other facilities on the north slope prepared in support of EISs for those projects.

Also part of the Administrative Record will be many documents generated during the life of the Point Thomson EIS that support NEPA processes mandated by law and guided by public policy.

The large number of comments from the interested public will also be part of the Administrative Record. The Administrative Record will allow EPA to relate those comments to the sets of technical documents described above, and retrieve the correct documents in response to comments.

**Assumptions.** This SOW assumes that:

- CH2M HILL will not respond to FOIA requests as part of this scope of work, and will not assume any FOIA costs as part of this scope of work.
- Vendor supplied training in *Zasio* for CH2M HILL staff is budgeted in this scope of work.
- CH2M HILL assumes that the total records included in the Administrative Record will include no more than 1,500 records totaling 50,000 pages, whether hard copy or electronic.

### **Task 5.3 Public Comments**

EPA must respond to comments formally submitted by stakeholders during the Scoping process and in response to the DEIS and public hearing. The actions defined below will provide for organization of comments and the effective response to the comments of interested stakeholders and Agencies.

- CH2M HILL will categorize and prepare responses to comments received from the public and agencies during the formal scoping process and in response to the DEIS and public hearing.
- CH2M HILL will scan comment letters into *eComment<sub>TM</sub>* software, where we will assign a source identifier (such as public agency, organization, tribal letter) to comments, allowing us to manage responses to comments. This task includes handling comments coming in email or web comment format during the formal scoping process, and identifying comments in the formal court transcripts generated during the public hearing.
- Comments will be included in the Scoping Process Summary or in the FEIS upon completion of EPA reviews described below.
- CH2M HILL will delineate individual comments in each of the comment letters and assign a responder. Upon completion of this activity, CH2M HILL will meet with the EPA to discuss the product of this task (delineated comments and assigned responder).
- Subsequent to EPA's review, CH2M HILL will prepare draft responses to comments. CH2M HILL will prepare and submit two draft response deliverables prior to finalizing the responses to comments for inclusion in the FEIS. Responders will include key technical staff to handle the specific comments related to their area of expertise.
- CH2M HILL will make revisions based on EPA's review, and prepare draft responses.
- CH2M HILL will maintain the original comment letters for the Administrative Record.
- CH2M HILL will provide regular status updates on the progress of the response process and will attend up to four meetings to discuss the progress/status of the responses to comments.



## Work Product

All the comments, their assigned source identifier generated in *eComment*<sup>TM</sup>, the summary of comments, and the responses to those comments contained in the Scoping Meeting Report Summary and the FEIS will be compiled into a single word document.

**Assumptions.** This SOW assumes that:

- EPA will provide CH2M HILL with a complete set of the comments received on the DEIS.
- CH2M HILL assumes approximately 20,000 comments will be received during the formal comment periods mandated by NEPA, either by comment letter, web mailbox, email, or through formal public hearing testimony
- EPA will provide comment on the delineation of comments and assigned responders.
- No new data will be generated, and no new analysis will be conducted.
- CH2M HILL assumes that one-third of the responses will require clarification of existing analysis in the EIS, one-third will be on common themes than can be addressed by master responses, and one-third will require additional clarification and coordination with the applicant and EPA.
- No new data will be generated, and no new analysis will be conducted as a result of responding to comments.
- CH2M HILL assumes that one-third of the responses will require an average of 15 minutes to complete, while the remaining two-thirds would take an average of 5 minutes to complete.
- Response to comment meetings will be attended by the CH2M HILL PM and up to four staff and four meetings will be conducted in Anchorage. Each meeting will require 12 hours for preparation and attendance.

## Task 5.4 Preliminary FEIS

Comments on the DEIS (or summaries of comments) and the responses to those comments will be included in the Preliminary Final EIS. We assume that amendments to the DEIS will appear as errata in the Preliminary FEIS in response to public comments and further review by the EPA and cooperating agencies and as additional information, corrections, modifications, and changes. The PFEIS will be submitted to EPA and USFWS/COE for their review and comment.

**Assumptions.** This SOW assumes that:

No comments will result in the need for developing new alternatives.

## Task 5.5 Final EIS

### Task 5.5.1 Revise, Produce, and Distribute FEIS

The Preliminary Final EIS will be revised based on review comments received from EPA and the cooperating agencies, then resubmitted to EPA for a clearance to print review. Upon receipt of the clearance to print order, 150 copies of the FEIS will be printed and distributed to an approved list of recipients. CH2M HILL will produce a camera-ready copy of the document.

**Assumptions.** This SOW assumes that:

- CH2M HILL will be responsible for printing the document.
- Reviewers will independently review the PFEIS and attend a meeting to discuss the comments on the submittal.
- Reviewing agencies will consolidate their comments on a single electronic response form (one set of response for each responding agency) and submit the form to the EPA and CH2M HILL before the meeting.
- Agency review of the FEIS will be limited to reviewing responses to comments on the PFEIS.

### Task 5.5.2 Record of Decision

CH2M HILL will prepare a Draft ROD that discusses significant, new public review comments received on the FEIS. CH2M HILL will submit the Draft ROD to the EPA as the Lead Agency for review. The Final ROD (reviewed and approved by the EPA) will provide notice of the final and include the rationale for the Lead Agency's decision. To expedite the schedule, CH2M HILL will prepare the Draft ROD during the 30-day review period for the FEIS. The Draft will be updated to include any response to public comments within one week of the close of the 30-day period.

Specifically the ROD will summarize the germane elements of process and decision making which support the selected alternative analyzed in the Point Thomson FEIS.

The ROD will be supported by source materials and appropriate documentation developed during the course of the project. The ROD will include:

- Introduction and Background
- Decision And Rationale
- Issues and Alternatives Considered
  - Public and Agency Involvement
  - Description of Options and Alternatives Considered in Detail
  - The Selected Alternative
  - Summary of Environmental Impacts
- Means to Avoid Environmental Harm
- Findings Required by Other Laws and Authorities
  - National Environmental Policy Act
  - Coastal Zone Management Act
  - Endangered Species Act

- Clean Water Act
- Clean Air Act
- Flood Plains and Wetlands
- Environmental Justice
- Civil Rights Laws
- Tribal Government Consultation

**Assumptions.** This SOW assumes that:

- The ROD will summarize completed decisions and processes through the Point Thomson FEIS.
- No additional research or coordination will be required to supplement the first assumption in Completing the ROD.
- The ROD will contain up to 50 pages of text with one appendix of no more than five pages and no more than two black and white 8.5X 11 graphics.

**Appendix A**  
**List of Deliverables to be Prepared**  
**During the EIS Process**

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**TABLE A-1**  
List of Deliverables to be Prepared During the EIS Process

<b>Task</b>	<b>Deliverable</b>
Task 1 Project Management	Project Schedule
	Project Calendar
	Weekly Status Reports
	Monthly Status Reports
	Meeting Summaries
Task 2 Data Adequacy and Data Gap Analysis	Summary of Information Required
	Data Adequacy and Data Gap Analysis Summary
Task 3 Public Involvement and Agency Coordination	Public Involvement Plan
	Government to Government Consultation Plan
	Public Notice for Scoping Meetings
	Notice of Intent
	Government to Government Meeting Summaries
	Inter-Agency Scoping Meeting Summary
	Scoping Meeting Transcripts
	Summary of Scoping Comments
	Scoping Summary Report (2 Parts)
	Revised Scope of Work
Task 4 Preliminary Draft EIS and Draft EIS	Draft Project Description
	Annotated Outline for EIS
	Biological Assessment
	Essential Fish Habitat
	Section 404(b)(1) Analysis
	Preliminary Draft EIS
	Draft EIS
Task 5 Final EIS	Notice of Availability
	Draft Final EIS
	Final EIS
	Notice of Availability
	Administrative Record
	Record of Decision

**Appendix B**  
**Draft Table of Contents**  
**Preliminary Draft EIS**

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# Table of Contents (December 10, 2002)

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## Abbreviations

## Executive summary

### 1. Introduction

- 1.1 Project Overview
- 1.2 Purpose and Need for Action
- 1.3 Agency Goals for this EIS
- 1.4 Agency Responsibilities (NEPA and other Regs [table]) see Northstar
  - 1.4.1 Cooperating Agencies
  - 1.4.2 Participating Agencies/Stakeholders
  - 1.4.3 Other Federal Agencies
  - 1.4.4 Government to Government Coordination
  - 1.4.5 State of Alaska
- 1.5 Summary of the Scoping Process, Key Issues Identified, and Development of Alternatives
- 1.6 DEIS Public Review and Comment Period
- 1.7 Organization of the EIS
- 1.8 Impact Evaluation Criteria

### 2. Proposed Project Description and Alternatives

- 2.1 Introduction
- 2.2 XOM Proposed Project
- 2.3 Options or Alternatives Considered but Eliminated from Detailed Analysis
- 2.4 Alternatives selected for evaluation in this EIS
  - 3.4.1 Alternative 1–No Action
  - 3.4.2 Alternative 2–Applicant’s proposed project
  - 3.4.3 Other alternatives to be identified
- 2.5 References

### 3. Traditional Knowledge

- 3.1 Introduction
- 3.2 Definition of Traditional Knowledge
- 3.3 Project Area’s Relationship to Traditional Knowledge
- 3.4 Traditional Knowledge Work Plan
  - 3.4.1 Review of Past Testimony (tier to Northstar)
  - 3.4.2 Collection of Traditional Knowledge Related to the Alaskan Beaufort Sea and Project Area
  - 3.4.3 Contact with Community Representatives
  - 3.4.4 Preparation of Questions to Obtain Traditional Knowledge
  - 3.4.5 Data Collection Trips to Communities

- 3.4.6 Use of Traditional Knowledge in the EIS
- 3.4.7 Categories of Traditional Knowledge Collected
- 3.4.8 Incorporation of Traditional Knowledge into the EIS
- 3.5 References
- 4. **Affected Physical Environment and Impacts**
  - 4.1 Introduction
  - 4.2 Climate, Meteorology, and Air Quality
    - 4.2.1 Information Resources Used (Traditional Knowledge and Western Science)
    - 4.2.2 Affected Environment:
    - 4.2.3 Environmental Consequences
    - 4.2.4 Summary
    - 4.2.5 References
  - 4.3 Geology and Geomorphology
    - 4.3.1 Information Resources Used (Traditional Knowledge and Western Science)
    - 4.3.2 Affected Environment:
    - 4.3.3 Environmental Consequences
    - 4.3.4 Summary
    - 4.3.5 References
  - 4.4 Freshwater Resources
    - 4.3.1 Information Resources Used (Traditional Knowledge and Western Science)
    - 4.3.2 Affected Environment:
      - Hydrology and water quality
      - Placement of gravel fill
      - Ice roads
      - Wastewater, stormwater runoff, etc.
      - Gravel mining
    - 4.3.3 Environmental Consequences
    - 4.3.4 Summary
    - 4.3.5 References
  - 4.5 Physical Oceanography and Coastal and Marine Water Resources
    - 4.5.1 Information resources used (Traditional Knowledge and Western Science)
    - 4.5.2 Affected Environment:
      - Physical Oceanography
      - Sediment Processes
      - Marine Water Quality
      - Sediment Quality
    - 4.5.3 Environmental Consequences
    - 4.5.4 Summary
    - 4.5.5 References
  - 4.6 Sea Ice
    - 4.6.1 Information Resources Used (Traditional Knowledge and Western Science)



- 4.6.2 Affected Environment:  
Sea roads, offshore discharge
- 4.6.3 Environmental Consequences
- 4.6.4 Summary
- 4.6.5 References

**5. Affected Biological Environment and Impacts**

- 5.1 Introduction
- 5.2 Marine Mammals
  - 5.2.1 Information Resources Used (Traditional Knowledge and Western Science)
  - 5.2.2 Affected Environment:  
Resource uses (Subsistence, commercial, and recreational)
  - 5.2.3 Environmental Consequences of Alternatives
  - 5.2.4 Summary of Environmental Consequences
  - 5.2.5 References
- 5.3 Estuarine and Freshwater Ecosystems
  - 5.3.1 Information Resources Used (Traditional Knowledge and Western Science)
  - 5.3.2 Affected Environment:  
Marine System  
River Delta/Estuarine System  
Freshwater Systems  
Marine Fish Species  
Migratory Fish Species  
Freshwater Fish Species  
Benthic Invertebrates  
Resources Use (Subsistence, Commercial, and Recreational)
  - 5.3.3 Environmental Consequences of Alternatives
  - 5.3.4 Summary
  - 5.3.5 References
- 5.4 Wetlands/Vegetation
  - 5.4.1 Information Resources Used (Traditional Knowledge and Western Science)
  - 5.4.2 Affected Environment:  
Wetland Habitat  
Tundra Habitat  
Resources use (Subsistence, commercial, and recreational)
  - 5.4.3 Environmental Consequences of Alternatives
  - 5.4.4 Summary
  - 5.4.5 References
- 5.5 Terrestrial Mammals
  - 5.2.1 Information Resources Used (Traditional Knowledge and Western Science)
  - 5.2.2 Affected Environment:  
Small mammals  
Large mammals

	Food web dynamics
	Resource uses (Subsistence, commercial, and recreational )
5.2.3	Environmental Consequences of Alternatives
5.2.4	Summary of Environmental Consequences
5.2.5	References
5.6	Birds
5.5.1	Information Resources Used (Traditional Knowledge and Western Science)
5.5.2	Affected Environment: Loons, Waterfowl, Seabirds, Shorebirds, Passerines Seasonal Movements and Activities Habitats Resources Use (Subsistence, Commercial, Recreational)
5.5.3	Environmental Consequences of Alternatives
5.5.4	Summary
5.5.5	References
5.6	Threatened and Endangered Species (Based On Species Listed in Northstar)
5.6.1	Information sources (Traditional Knowledge vs. Western Science)
5.6.2	Affected Environment: Bowhead Whale (Endangered) Spectacled Eider (Threatened) Steller's Eider (Threatened)
5.6.3	Environmental Consequences of Alternatives
5.6.4	Summary
5.6.5	References
<b>6.</b>	<b>Affected Human Environment and Impacts</b>
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6.2	Information sources (traditional knowledge and western science)
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6.3.1	Affected Environment: Overview of Subsistence Harvesting Factors Affecting Subsistence Activities Access to Subsistence Harvest Areas
6.3.2	Environmental Consequences of Alternatives
6.3.3	Summary
6.3.4	References
6.4	Cultural/Archaeological Resources and Human History
6.4.1	Relevant Legislation Affecting Cultural Resources
6.4.2	Human History Barrow Nuiqsut Kaktovik
6.4.3	Overview of Archaeological Periods
6.4.4	Cultural Resources
6.4.5	Environmental Consequences of Alternatives

- 6.4.6 Summary
- 6.4.7 References
- 6.5 Land and Water Use
  - 6.5.1 Affected Environment:
    - Land and Water Jurisdiction and Ownership
    - Existing Land Use
    - Land Use Regulations and Management
    - Coastal Zone Management
  - 6.5.2 Environmental Consequences of Alternatives
  - 6.5.3 Summary
  - 6.5.4 References
- 6.6 Socioeconomics
  - 6.6.1 Affected Environment:
    - State of Alaska
    - North Slope Borough
    - Barrow
    - Nuiqsut
    - Kaktovik
    - Prudhoe Bay/Deadhorse
  - 6.6.2 Environmental Consequences of Alternatives
  - 6.6.3 Summary
  - 6.6.4 References
- 6.7 Transportation
  - 6.7.1 Affected Environment:
    - Marine Transportation System
    - Highway Transportation Systems
    - Aviation Transportation Systems
    - Pipeline Transportation Systems
  - 6.7.2 Environmental Consequences of Alternatives
  - 6.7.3 Summary
  - 6.7.4 References
- 6.8 Visual/Aesthetic Characteristics
  - 6.8.1 Affected Environment:
    - Physical Appearance
    - Atmospheric Conditions
    - Cultural Context
  - 6.8.2 Environmental Consequences of Alternatives
  - 6.8.3 Summary
  - 6.8.4 References
- 6.9 Noise
  - 6.9.1 Affected Environment:
    - Noise Sensitive Areas
    - Operational
    - Construction
  - 6.9.2 Environmental Consequences of Alternatives
  - 6.9.3 Summary
  - 6.9.4 References

- 6.10 Recreation
    - 6.10.1 Affected Environment:
    - 6.10.2 Environmental Consequences of Alternatives
    - 6.10.3 Summary
    - 6.10.4 References
  - 6.11 Environmental Justice Considerations
  - 7. Arctic National Wildlife Refuge
  - 8. Impacts of HC Release on the Environment
  - 9. Effects of \_\_\_\_\_ (TBD)
  - 10. Cumulative Impacts
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  - 12. List of Preparers
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