NORTHWEST TERRITORIES WATER BOARD

ONSHORE OIL AND GAS EXPLORATION DRILLING QUESTIONNAIRE

FOR

WATER LICENCE APPLICATIONS

Prepared by:
Department of Indian Affairs and Northern Development
Water Resources Division
August 1999
Version 5.07

Introduction

The purpose of this questionnaire is to solicit supplemental information from an applicant to support their application for a water licence (or renewal). It is anticipated that the completion of this questionnaire will reduce delays arising from the Northwest Territories Water Board having to solicit additional information after an application has already been submitted. This information will also be useful during the environmental assessment and screening of your application, which must be undertaken prior to development and approval of a water licence.

The applicant should complete the questionnaire to the best of his/her ability, recognizing that some questions may not be relevant to the project under consideration. For questions that do not relate to his/her operation, the applicant is requested to indicate "N/A" (Not Applicable).

If any questions arise while completing the questionnaire, the applicant may wish to contact the Northwest Territories Water Board at (867) 669-2772. If your question is that of a technical nature please contact the Regulatory Approvals Section of the Water Resources Division, Department of Indian Affairs and Northern Development (INAC), at (867) 669-2651.

Chairman,
Northwest Territories Water Board

TABLE OF CONTENTS

SECTION	PAGE
1. PRELIMINARY SITE ASSESSMENT	1
2. WATER USE AND WASTE DISPOSAL	4
3. CONTINGENCY, ABANDONMENT AND RESTORATION PLANNING	6
4. ENVIRONMENTAL ASSESSMENT AND SCREENING	7
5. LIST OF ATTACHMENTS	8

If space is insufficient for any of the responses on this questionnaire, use the back of the sheet or attachments.

List attachments in Appendix 1.

Print or type your responses.

SECTION 1:

PRELIMINARY SITE ASSESSMENT

DATE: November 1, 2000

1.1 APPLICANT

COMPANY NAME: Shell Canada Ltd.

ADDRESS: 400 – 4th Avenue SW

Calgary, AB

T2P 0J4

PROPERTY NAME/EXPLORTION LIC. #: EL# 403

CLOSEST COMMUNITY: Aklavik

LATITUDE/LONGITUDE OF CAMP (Degrees, minutes, seconds):
68° 57' 00" 134° 55' 00"

1.2 PRIMARY COMPANY CONTACT:

NAME: John Brown

TITLE: Senior Seismic Supervisor

CONTACT NUMBER: 403-691-3502

ALTERNATE CONTACT NUMBERS: Cell: 403-861-1352

1.3 FIELD CONTACT:

NAME (If known): Dave Berry

TITLE (If known): Consultant

CONTACT NUMBER: 403-691-3502 Cell: 815-6995

1.4 INDICATE THE STATUS OF THIS APPLICATION:

NEW APPLICATION [X] RENEWAL [ ]

IF RENEWAL, INCLUDE LICENCE NUMBER: _____

1.5 SITE HISTORY

INDICATE IF THIS SITE CONTAINS ANY KNOWN:

FORMER WELL SITES	No
WASTE DUMPS	No
FUEL AND CHEMICAL STORAGE AREAS	No
SUMP AREAS	No
WASTE WATER DISCHARGE LOCTIONS	No

DESCRIBE SITES AND REFERENCE THEM ON THE MAP IN QUESTION 1.6

1.6 ATTACH MAPS DRAWN TO SCALE SHOWING LOCATIONS OF EXISITNG AND PROPOSED:

CAMP FACILITIES,	X
WELL SITE(S),	X
SUMPS,	N/A
WATER SOURCES,	X
FUEL AND CHEMICAL STORAGE FACILITIES,	X
DRILLING MUD STORAGE FACILITIES,	N/A
DRAINAGE CONTROLS,	N/A
TRANSPORATION ROUTES (SEASONAL AND ALL WEATHER)*,	X
ELEVATION CONTOURS,	
LOCATIONS OF WATERBODIES	X
DRAINAGE PATTERNS FOR WELL AND CAMP SITES.	

* Clearly identify crossings over water courses greater than 5 m at ordinary high water mark.

Refer to attached Project Description.

1.7 DESCRIBE THE PROPOSED OR CURRENT METHOD OF FRESHWATER WITHDRAWAL, THE TYPE AND OPERATING CAPACITY OF THE PUMPS USED AND THE INTAKE SCREEN SIZE.

Intake screen size 1.3cm (0.5"). Refer to Project Description for further details.

1.8 ESTIMATE MAXIMUM DRAW DOWN AND RECHARGE CAPABILITY OF THE RIVER OR LAKE FROM WHICH FRESH WATER WILL BE DRAWN. QUOTE DRAW DOWN IN CENTIMETRES, OR, STATE PERCENTAGE OF FLOW WITHDRAWN.

Less than 1% of flow to be withdrawn directly from the Mackenzie River (Reindeer Channel).

1.9 INDICATE IF PERMAFROST IS EXPECTED TO BE ENCOUNTERED UNDER:

CAMP FACILITIES	N/A
WELL SITE	N/A
ACCESS ROUTES	X
SUMPS	N/A
OTHER	N/A

1.10 INDICATE ANY POTENTIAL FOR ENCOUNTERING ARTESIAN AQUIFERS OR LOST CIRCULATION WITHIN THE SURFACE HOLE (TO CASING DEPTH)

N/A

1.11 ATTACH A DESCRIPTION OF THE SURFICIAL GEOLOGIC AND HYDRO-GEOLOGIC CONDITIONS IN THE IMMEDIATE VICINITY OF THE WELLSITE

Conditions in vicinity of the seismic program - Refer to attached Project Description.

SECTION 2:

WATER USE AND WASTE DISPOSAL

2.1 OUTLINE ALL WATER USAGE IN THE DRILL PROGRAM, CAMP FACILITIES, AND ROAD CONSTRUCTION. INDICATE THE SOURCE AND VOLUME OF WATER FOR EACH USE.

	Source	Use	Average Volume (m^3/day)
1.	Mackenzie River	camp	22.68 m^3/day
2.		road construction	<100m^3/day
3.		seismic drilling	<100m^3/day
4.			
		TOTAL:	<100m^3/day

2.2 WILL DRILLING WASTES CONTAIN DETRIMENTAL SUBSTANCES INCLUDING, BUT NOT LIMITED TO, OIL BASED OR INVERT MUDS AND HIGH SALINITY FLUIDS?

YES ____ NO ____

IF YES, INDICATE SUBSTANCES:

N/A

2.3 INDICATE THE TOTAL ESTIMATED VOLUME OF DRILLING WASTES

N/A CUBIC METRES

2.4 INDICATE METHODS FOR DISPOSAL OF DRILLING WASTES.

____ SUMP

X DOWN HOLE (REQUIRES NEB APPROVAL) seismic drill cuttings

____ ON-SITE TREATMENT (PROVIDE PLAN)

____ OFF-SITE (GIVE LOCATION ANDMETHOD OF DISPOSAL)

Refer to attached Project Description Section 4.2.5

2.5 IF A SUMP IS BEING USED, ATTACH THE FOLLOWING INFORMATION

SCALE DRAWINGS AND DESIGN OF SUMPS,
CAPACTIY IN CUBIC METRES,
BERM EROSION PROTECTION,
SOIL PERMEABILITY AND TYPE
RECYCLING/RECLAIMING WATERS,
SURFACE DRAINAGE CONTROLS,
ABANDONMENT PROCEDURES.

2.6 WILL A CAMP BE PROVIDED?

YES [X] NO [ ]

2.7 IF YES, THEN INDICATE THE CAPACITY AND THE EXPECTED MAXIMUM NUMBER OF PERSONS THAT WILL BE ACCOMMODATED.

CAPACITY 120 PERSONS

MAXIMUM ACCOMMODATED 120 PERSONS

SECTION 3:

CONTINGENCY, ABANDONMENT AND RESTORATION PLANNING

3.1 ATTACH THE PROPOSED OR EXISTING CONTINGENCY PLAN WHICH DESCRIBES COURSE OF ACTION, MITIGATIVE MEASURES AND EQUIPMENT AVAILABLE FOR USE IN THE EVENT OF SYSTEM FAILURES AND SPILLS OF HAZARDOUS MATERIALS (IN COMPLIANCE WITH NWT WATER BOARD GUIDELINES FOR CONTINGENCY PLANNING, 1987).

See Project Description – Emergency Response Plan is provided in Appendix A.

3.2 ATTACH AN INVENTORY OF HAZARDOUS MATERIALS ON THE PROPERTY (AS DEFINED UNDER TRANSPORTATION OF DANGEROUS GOOD REGULATIONS).

See Project Description- Fuel Storage (Section 4.3.3)

3.3 ATTACH AN OUTLINE OF PLANNED ABANDONMENT AND RESTORATION PROCEDURES.

See Project Description- Section 14.0

SECTION 4:

ENVIRONMENTAL ASSESSMENT AND SCREENING

Your application and other project details, such as this questionnaire, will be sent out for review by local aboriginal and public groups as well as territorial and federal government agencies. Their comments regarding the significance of project impacts are considered before a decision is made to allow the project to proceed. Because formal assessment and screening of water licences was only initiated in about 1989, applicants will find that this process may be required even if the project has been built and in operation for several years. However, if your project has been previously screened a further assessment may not be required, or a more limited process may be used. This will depend on individual circumstances, including the stage of the project. Some projects may need a higher level of review or submission of more information before being screened.

4.1 HAS THIS PROJECT EVER UNDERGONE AN INITIAL ENVIRONMENTAL ASSESSMENT, INCLUDING PREVIOUS OWNERS?

YES [X] NO [ ]

IF YES, BY WHOM / WHEN: EA completed by Inuvialuit Environmental Inc. November 2000. Refer to attached Project Description.

4.2 HAS BASELINE DATA BEEN COLLECTED FOR THE MAIN WATER BODIES IN THE AREA?

YES [ ] NO [X]

IF YES, ATTACH DATA.

4.3 HAS BASELINE DATA BEEN COLLECTED AND EVALUATED WITH RESPECT TO THE BIOPHYSICAL COMPONENTS OF THE ENVIRONMENT POTENTIALLY AFFECTED BY THE PROJECT (WILDLIFE, SOILS, AIR QUALITY).

YES [X] NO [ ]

IF YES, ATTACH DATA.
Refer to attached Project Description.

4.4 ATTACH A DESCRIPTION OF ALL PROPOSED AND EXISTING ENVIRONMENTAL MONITORING PROGRAMS.
Refer to attached Project Description.

4.5 HAS A COMMUNITY CONSULTATION PROGRAM BEEN INITIATED?

YES [X] NO [ ]

IF YES, PROVIDE DETAILS OF THE PROGRAM
Refer to attached Project Description.

SECTION 5:

LIST OF ATTACHMENTS

Reference to Question #	Title	Number of pages
1.6	Project Description	
1.11	Project Description	
2.4	Project Description	
3.1	Project Description	
3.2	Project Description	
3.3	Project Description	
4.1	Project Description	
4.3	Project Description	
4.4	Project Description	

EXECUTIVE SUMMARY

Shell Canada Ltd. is applying to conduct winter 2000/2001 2D and 3D seismic programs within the Mackenzie River Delta region of the Northwest Territories. The 2D program entails the seismic exploration of approximately 153 kilometres of line largely within Exploration Licence #403. The proposed 2D program encompasses approximately 61.2ha of land along surveyed seismic lines. The 3D program entails the seismic exploration of approximately 684km of source lines and 818km of receiver lines largely within Exploration Licence #403. The surveyed 3D seismic lines would cover an approximate surface area of 518ha. The proposed 3D program encompasses an area of 294km^2 east of Shallow Bay and largely south of Reindeer Channel. These blocks of land are located on Crown lands within the Inuvialuit Settlement Region (ISR). The proposed seismic programs fall under Federal and Territorial regulatory jurisdiction. Pending regulatory approval, the seismic exploration is scheduled to commence in January 2001.

Inuvialuit Environmental Inc. (IEI) has been commissioned by Shell to prepare this Project Description for the South Kugpik 2D and 3D seismic programs. The Project Description has been prepared to meet the requirements of INAC, and fulfill the operating guidelines and procedures of the Environmental Impact Screening Committee (EISC).

The proposed project is located within a delta environment. The topography in the project area is flat to gently rolling. Vegetation in the area is limited mainly to grasses, shrubs and willows up to approximately 2.5m tall. Some small coniferous stands are found in the southern portion of the program area. Clearing of the lines will be required over the majority of the program area. Any coniferous trees along the lines will be avoided wherever possible.

The winter seismic program has been developed with the consideration of minimizing impacts on the environment and land users. Seismic technology not previously used in this region will be employed to mitigate potential environmental impacts on fish habitat specifically. However the potential still exists for certain environmental impacts to occur over the course of the program. Potential environmental concerns for the project may include temporary alteration of wildlife habitat; elevated noise, air pollution and traffic levels, resulting in short-term wildlife displacement; impacts to traditional land use in the vicinity of the project and thermal disturbance to permafrost.

Protection measures designed to mitigate the potential environmental impacts are presented in this Project Description and in Table 10. Shell and its contractors are committed to following these measures in order to minimize the risk of potential environmental impacts and disturbance of culturally and historically significant areas.

SECTION 1:

PRELIMINARY SITE ASSESSMENT

DATE: November 1, 2000

1.1 APPLICANT

COMPANY NAME: Shell Canada Ltd.

ADDRESS: 400 – 4th Avenue SW

Calgary, AB

T2P 0J4

PROPERTY NAME/EXPLORTION LIC. #: EL# 403

CLOSEST COMMUNITY: Aklavik

LATITUDE/LONGITUDE OF CAMP (Degrees, minutes, seconds):
68° 57' 00" 134° 55' 00"

1.2 PRIMARY COMPANY CONTACT:

NAME: John Brown

TITLE: Senior Seismic Supervisor

CONTACT NUMBER: 403-691-3502

ALTERNATE CONTACT NUMBERS: Cell: 403-861-1352

1.3 FIELD CONTACT:

NAME (If known): Dave Berry

TITLE (If known): Consultant

CONTACT NUMBER: 403-691-3502 Cell: 815-6995

1.4 INDICATE THE STATUS OF THIS APPLICATION:

NEW APPLICATION [X] RENEWAL [ ]

IF RENEWAL, INCLUDE LICENCE NUMBER: _____

1.5 SITE HISTORY

INDICATE IF THIS SITE CONTAINS ANY KNOWN:

FORMER WELL SITES	No
WASTE DUMPS	No
FUEL AND CHEMICAL STORAGE AREAS	No
SUMP AREAS	No
WASTE WATER DISCHARGE LOCTIONS	No

DESCRIBE SITES AND REFERENCE THEM ON THE MAP IN QUESTION 1.6

1.6 ATTACH MAPS DRAWN TO SCALE SHOWING LOCATIONS OF EXISITNG AND PROPOSED:

CAMP FACILITIES,	X
WELL SITE(S),	X
SUMPS,	N/A
WATER SOURCES,	X
FUEL AND CHEMICAL STORAGE FACILITIES,	X
DRILLING MUD STORAGE FACILITIES,	N/A
DRAINAGE CONTROLS,	N/A
TRANSPORATION ROUTES (SEASONAL AND ALL WEATHER)*,	X
ELEVATION CONTOURS,	
LOCATIONS OF WATERBODIES	X
DRAINAGE PATTERNS FOR WELL AND CAMP SITES.	

*** Clearly identify crossings over water courses greater than 5 m at ordinary high water mark.**

Refer to attached Project Description.

1.7 DESCRIBE THE PROPOSED OR CURRENT METHOD OF FRESHWATER WITHDRAWAL, THE TYPE AND OPERATING CAPACITY OF THE PUMPS USED AND THE INTAKE SCREEN SIZE.

Intake screen size 1.3cm (0.5"). Refer to Project Description for further details.

1.8 ESTIMATE MAXIMUM DRAW DOWN AND RECHARGE CAPABILITY OF THE RIVER OR LAKE FROM WHICH FRESH WATER WILL BE DRAWN. QUOTE DRAW DOWN IN CENTIMETRES, OR, STATE PERCENTAGE OF FLOW WITHDRAWN.

Less than 1% of flow to be withdrawn directly from the Mackenzie River (Reindeer Channel).

1.9 INDICATE IF PERMAFROST IS EXPECTED TO BE ENCOUNTERED UNDER:

CAMP FACILITIES	N/A
WELL SITE	N/A
ACCESS ROUTES	X
SUMPS	N/A
OTHER	N/A

1.10 INDICATE ANY POTENTIAL FOR ENCOUNTERING ARTESIAN AQUIFERS OR LOST CIRCULATION WITHIN THE SURFACE HOLE (TO CASING DEPTH)

N/A

1.11 ATTACH A DESCRIPTION OF THE SURFICIAL GEOLOGIC AND HYDRO-GEOLOGIC CONDITIONS IN THE IMMEDIATE VICINITY OF THE WELLSITE

Conditions in vicinity of the seismic program - Refer to attached Project Description.

SECTION 2:

WATER USE AND WASTE DISPOSAL

2.1 OUTLINE ALL WATER USAGE IN THE DRILL PROGRAM, CAMP FACILITIES, AND ROAD CONSTRUCTION. INDICATE THE SOURCE AND VOLUME OF WATER FOR EACH USE.

	Source	Use	Average Volume (m^3/day)
1.	Mackenzie River	camp	22.68 m^3/day
2.		road construction	<100m^3/day
3.		seismic drilling	<100m^3/day
4.			
		TOTAL:	<100m^3/day

2.2 WILL DRILLING WASTES CONTAIN DETRIMENTAL SUBSTANCES INCLUDING, BUT NOT LIMITED TO, OIL BASED OR INVERT MUDS AND HIGH SALINITY FLUIDS?

YES ____ **NO** ____

IF YES, INDICATE SUBSTANCES:

N/A

2.3 INDICATE THE TOTAL ESTIMATED VOLUME OF DRILLING WASTES

N/A **CUBIC METRES**

2.4 INDICATE METHODS FOR DISPOSAL OF DRILLING WASTES.

____ SUMP

X DOWN HOLE (REQUIRES NEB APPROVAL) seismic drill cuttings

____ ON-SITE TREATMENT (PROVIDE PLAN)

____ OFF-SITE (GIVE LOCATION ANDMETHOD OF DISPOSAL)

Refer to attached Project Description Section 4.2.5

2.5 IF A SUMP IS BEING USED, ATTACH THE FOLLOWING INFORMATION

SCALE DRAWINGS AND DESIGN OF SUMPS,
CAPACTIY IN CUBIC METRES,
BERM EROSION PROTECTION,
SOIL PERMEABILITY AND TYPE
RECYCLING/RECLAIMING WATERS,
SURFACE DRAINAGE CONTROLS,
ABANDONMENT PROCEDURES.

2.6 WILL A CAMP BE PROVIDED?

YES [X] NO [ ]

2.7 IF YES, THEN INDICATE THE CAPACITY AND THE EXPECTED MAXIMUM NUMBER OF PERSONS THAT WILL BE ACCOMMODATED.

CAPACITY 120 PERSONS

MAXIMUM ACCOMMODATED 120 PERSONS

SECTION 3:

CONTINGENCY, ABANDONMENT AND RESTORATION PLANNING

3.1 ATTACH THE PROPOSED OR EXISTING CONTINGENCY PLAN WHICH DESCRIBES COURSE OF ACTION, MITIGATIVE MEASURES AND EQUIPMENT AVAILABLE FOR USE IN THE EVENT OF SYSTEM FAILURES AND SPILLS OF HAZARDOUS MATERIALS (IN COMPLIANCE WITH NWT WATER BOARD GUIDELINES FOR CONTINGENCY PLANNING, 1987).

See Project Description – Emergency Response Plan is provided in Appendix A.

3.2 ATTACH AN INVENTORY OF HAZARDOUS MATERIALS ON THE PROPERTY (AS DEFINED UNDER TRANSPORTATION OF DANGEROUS GOOD REGULATIONS).

See Project Description- Fuel Storage (Section 4.3.3)

3.3 ATTACH AN OUTLINE OF PLANNED ABANDONMENT AND RESTORATION PROCEDURES.

See Project Description- Section 14.0

SECTION 4:

ENVIRONMENTAL ASSESSMENT AND SCREENING

Your application and other project details, such as this questionnaire, will be sent out for review by local aboriginal and public groups as well as territorial and federal government agencies. Their comments regarding the significance of project impacts are considered before a decision is made to allow the project to proceed. Because formal assessment and screening of water licences was only initiated in about 1989, applicants will find that this process may be required even if the project has been built and in operation for several years. However, if your project has been previously screened a further assessment may not be required, or a more limited process may be used. This will depend on individual circumstances, including the stage of the project. Some projects may need a higher level of review or submission of more information before being screened.

4.1 HAS THIS PROJECT EVER UNDERGONE AN INITIAL ENVIRONMENTAL ASSESSMENT, INCLUDING PREVIOUS OWNERS?

YES [X] **NO** [ ]

IF YES, BY WHOM / WHEN: EA completed by Inuvialuit Environmental Inc. November 2000. Refer to attached Project Description.

4.2 HAS BASELINE DATA BEEN COLLECTED FOR THE MAIN WATER BODIES IN THE AREA?

YES [ ] **NO** [X]

IF YES, ATTACH DATA.

4.3 HAS BASELINE DATA BEEN COLLECTED AND EVALUATED WITH RESPECT TO THE BIOPHYSICAL COMPONENTS OF THE ENVIRONMENT POTENTIALLY AFFECTED BY THE PROJECT (WILDLIFE, SOILS, AIR QUALITY).

YES [X] **NO** [ ]

IF YES, ATTACH DATA.
Refer to attached Project Description.

4.4 ATTACH A DESCRIPTION OF ALL PROPOSED AND EXISTING ENVIRONMENTAL MONITORING PROGRAMS.
Refer to attached Project Description.

4.5 HAS A COMMUNITY CONSULTATION PROGRAM BEEN INITIATED?

YES [X] **NO** [ ]

IF YES, PROVIDE DETAILS OF THE PROGRAM
Refer to attached Project Description.

SECTION 5:

LIST OF ATTACHMENTS

Reference to Question #	Title	Number of pages
1.6	Project Description	
1.11	Project Description	
2.4	Project Description	
3.1	Project Description	
3.2	Project Description	
3.3	Project Description	
4.1	Project Description	
4.3	Project Description	
4.4	Project Description	