NORTHWEST TERRITORIES WATER BOARD

Guidelines for Contingency Planning

January, 1987

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Forward

The Northwest Territories Water Board has the responsibility for licensing water use and waste disposal activities in the Northwest Territories. From time to time most of the licensees have suffered operational accidents which threatened or even damaged the water environment. The Water Board came to the opinion that it must do something to assist the licensees to minimize the impact of such accidents. The strategy selected was to write into Water Licences the requirement for the licensees to develop Contingency Plans which would be put into operation when an accident occurred. Licensees were receptive to this approach but immediately posed the question, "What should be the form and content of a Contingency Plan?" To help provide an answer to this question the Water Board, in 1986, asked it's Technical Advisory Committee to develop guidelines for contingency plans which could be used by licensees and applicants for new water licences. A sub-committee was set up and it has produced the following Guidelines for Contingency Planning. The Water Board approved these Guidelines on February 26, 1987.

The Board believes that these Guidelines will be helpful to applicants and licensees in the preparation of Contingency Plans for their operations. More important, these Contingency Plans should enable the operations to react more quickly and effectively when accidents occur, as they are bound to do.

The Water Board is indebted to the members of the sub-committee who prepared the Guidelines. They are: Ron Kent (Chairman), Andrew Cullen, Doug Stendahl, Emery Paquin, David Tilden, Hogler Krutzelmann and Ken Thomas.

Glenn B. Warner
Chairman
N.W.T. Water Board

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1.0 Introduction

The remote location of inland developments in the N.W.T., and the environmental sensitivity of these areas, underlines the necessity for the on-site capability to deal with spills of petroleum products and other hazardous materials, and the failure of systems and system components associated with water use and waste disposal. In recognition of this need, the N.W.T. Water Board requires that all operations requesting licences for Water Use and Waste Disposal prepare comprehensive Contingency Plans to establish a state of readiness which will enable prompt and effective response to possible spill or system failure events.

The preparation of the document is as important as the information it contains. Contingency Planning will identify areas of weakness or deficiency at an operation and thus, enable corrective steps to be taken before an emergency arises.

Plans must demonstrate to the N.W.T. Water Board that the Licence Holder is capable of responding and taking appropriate action in the event of a spill or system failure.

The purpose of this document is to provide a guideline for the preparation of Spill Contingency Plans and General Contingency Plans that are acceptable to the N.W.T. Water Board. Where the Licence Holder is required to submit both types of plans, it is not required that the formats are followed exactly and Plans may be combined, provided that all the necessary information is included. The Water Board will review all submitted Plans and may request changes should they be deemed warranted.

2.0 Guidelines for Spill Contingency Planning

2.1 Introduction

Spills of oil and other hazardous materials cannot be entirely prevented. However, the impacts of spills can be minimized by establishing predetermined lines of response and plans of action. The purpose of this section is to outline a Spill Contingency Plan format acceptable to the N.W.T. Water Board and also to clearly define the procedure used to notify government of spills in the N.W.T. It serves merely as a guide in the preparation of a Contingency Plan. The contents of each Plan will vary according to the nature and magnitude of the particular project.

2.2 Contingency Plan Format

A Contingency Plan designates lines of authority and responsibility, establishes proper reporting and communication procedures, and organizes plans of action and countermeasures to be used in the event of a spill. All the information necessary to effectively control, and clean up, a spill should be included in the Plan.

The Plan must reflect the current state-of-the-art for containment and clean up. Changing conditions on site, such as stage of development and personnel, must also be reflected in the Plan. As a result of these necessities, an easy-to-update format such as that afforded by "loose leaf" binders is most appropriate. Index tabs further increase the useability of the plan by improving access to specific information.

Part of the process of completing the Plan will involve the analysis of potential spills, their fates and effects. This analysis should include the following steps:

- identification of all potential sources of spills;
- estimation of the potential size and type of spills;
- establishemnt of where spills could migrate;

- establishment of a communication network;
- identification of specific preventive measures and procedures;
- identification of specific safety hazards associated with the spills;
- establishment of where, and what type of clean up equipment can be readily obtained;
- identification of what local assistance, or other resources, are available;
- assignment of specific responsibilities to personnel; and
- assessment of response action plans for various types of potential spills (i.e. "what to do" and "how to do it").

Often, some of the information requested in the Spill Contingency Plan is duplicated in general contingency plans. This information may include: reporting procedures; environmental sensitivity mapping; and response team. For this reason, it may be to the operation's advantage to combine the spill contingency plan with the general contingency plan, when both are required.

2.3 A Typical Contingency Plan

The following is a list of the main elements for a typical contingency plan.

- Preamble
- Introduction
- Response Organization
- Initial Action
- Reporting Procedures
- Action Plans
- Environmental Mapping
- Resource Inventory
- Training and Exercises
- Hazardous Material Information
- Supporting Documents

A typical Spill Contingency Plan is briefly described in Appendix I.

These Guidelines are intended to assist in the organization and preparation of an acceptable Plan. The significant differences which exist between operations prevent the incorporation of site specific detail in these Guidelines.

3.0 Guidelines for General Contingency Planning

3.1 Introduction

Even with the best preventive maintenance program, failures of the systems, and system components, associated with water use and waste disposal cannot be entirely prevented. However, the impact of failures can be minimized by establishing predetermined lines of response and plans of action. The purpose of this Section is to outline a general contingency plan format and contents that will be acceptable to the Water Board. Since each plan will vary according to the nature of the particular project, environment, and hazards, this document can only serve as a guide.

3.2 Plan Format

A General Contingency Plan designates lines of authority and responsibility, and establishes proper reporting and communication procedures. It organizes plans of action and countermeasures to be used in the event of system or system component failure. All the information necessary to prevent, control, and mitigate a failure should be included in the Plan. The Plan must also demonstrate to the Water Board that the company is capable of responding and taking appropriate action.

Changing conditions on site, such as stage of development, technology, and personnel must be reflected in the Plan. As a result of these necessities, an easily updatable format, such as that afforded by loose-leaf binders is most appropriate. Index tabs further increase the useability of the plan by improving access to specific information.

Part of the process of completing the plan will involve the analysis of the potential system failures and their effect on the environment. Thus, environmental sensitivity mapping will be an essential part of the plan.

Often, some of the information requested in the General Contingency Plan is duplicated in spill contingency plans. This information may include: reporting procedures; environmental sensitivity mapping; and response team. For this reason, it may be to the operation's advantage to combine the Genral Contingency Plan with the Spill Contingency Plan, when both are required.

3.3 A Typical General Contingency Plan

The following is a list of the main elements for a typical contingency plan:

- Introduction;
- Reporting Procedures;
- Site Information;
- System Component Failure Prevention;
- System Malfunction Response Actions;
- Response Equipment;
- Response Team; and
- Training Exercises.

These are briefly described in Appendix II.

Appendix I

A Typical Spill Contingency Plan

Date of Issuance of Plan

Company's Oil and Hazardous Material Spill Contingency Plan

Prepared By:

Approved By:

Preamble

The preamble is included to supply the following information:

- effective date of the Plan;
- policy for the application of the Plan;
- Plan distribution; and
- contact for additional or revised copies of the Plan.

Below is an example of statements which could be included in this introductory page.

The Spill Contingency Plan is effective from June 13, 1982 until January 1, 1987 and applies to all projects and operations of Northwest Exploration Limited licenced by the N.W.T. Water Board in the area of Prospect Lake. Latitude 60° 11' 35 and Longitude 90° 09' 30.

The following formal distribution has been made of this Plan.

_____

_____

_____

Additional copies and updates of this Plan may be obtained by writing to:

_____

_____

_____

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1.0 Introduction

The purpose of Northwest Exploration Limited's Oil and Hazardous Material Spill Contingency Plan is to provide a plan of action for every foreseeable spill event at the Prospect Lake operation. It defines the responsibilities of key response personnel and outlines the procedures for responding to spills in a way that will minimize potential health and safety hazards, environmental damage, and clean up costs. The Plan has been prepared to provide easy access to all the information needed in dealing with a spill.

The map (Figure 1) on the following page shows the existing layout of the site in the Northwest Exploration development area at Prospect Lake. Currently there are . . . Exploration is being undertaken . . . Production at this site is presently . . . Hazardous materials used on site include . . . They are stored . . . Products produced at the site are transported . . . etc . . .

It is the policy of Northwest Exploration to initiate clean up activity when, in the opinion of its management, Northwest Exploration is clearly associated, or likely to be associated, with the spilled material. As well, it is our Company policy:

- to comply with existing regulations;
- to provide such protection of the environment as is technically feasible and economically practical;
- to cooperate with other groups working on protection of the environment;
- to anticipate future pollution control requirements and to make provision for them; and
- to keep employees, government officials and the public informed.

Figure 1 – Large Scale Map of Site Plan and Surrounding Area at Northwest Exploration's Prospect Lake Operation

(Insert map)

Figure 2 – Site Specific Plan Drawings of Facilities

(Insert drawings)

2.0 Response Organization

This section contains an organization chart of the Spill Response Team and a listing of the duties of key personnel responsible for responding to spills (e.g. On-scene Coordinator, Environmental/Safety Advisor, Field Operations Supervisor).

3.0 Initial Action

This section is included to educate company personnel about the proper procedures for reacting to a spill.

The suggested course of action of the first person at the spill scene is the following:

(a) Be alert and consider your safety first. If possible, identify the product spilled;
(b) Assess the hazard to persons in the vicinity of the spill;
(c) If possible, without further assistance, control danger to human life;

(d) Assess whether the spill can be readily stopped or brought under control;
(e) If safe to do so, and if possible, try to stop the flow of material;
(F) Gather information on the status of the situation;
(g) Report the spill without delay to the Spill Response Team and ensure that government is notified at the same time by the N.W.T. 24 Hour Spill Report Line (403) 920-8130; and
(h) Resume any effective action to contain, clean up, or stop the flow of the spilled product.

4.0 Reporting Procedure

This part of the Plan describes the communication system put in place by the plan holder to ensure an expedient response to a spill. It includes the means of communication available to activate the Spill Response Team and the telephone numbers of company officials, consultants and other companies which may have to be contracted to supply the resources, expertise and advice needed to deal with the spill. A listing of government contacts who can provide technical assistance and information regarding environmental sensitivity, spill response procedures, clean up measures, and the like, should also be included. Reference should be made to the N.W.T. 24 Hour Spill Report Line (403) 920-8130, the telephone service used throughout the N.W.T. to inform all government departments that a spill has occurred. The specific information requested when a spill is reported to government is outlined on the enclosed Spill Report Form.

All spills or potential spills of petroleum products or other hazardous materials must be reported to the 24-hour Spill Report Line to ensure that an investigation may be undertaken by the appropriate government authority.

SPILL REPORTING PROCEDURE

1. Fill out "SPILL REPORT" form as completely as possible before making the report.
2. Report IMMEDIATELY to Yellowknife using the 24-hour Spill Report Line

24-HOUR SPILL REPORT LINE (403) 920-8130

3. Where telex is available, follow up immediately by sending a copy of the Spill Report.

TELEX: 034-45623

NOTE. Telephone calls can be made collect by informing the Operator that you wish to report a spill.

4. RCMP communications may be used if other means are not available

Additional Information or Assistance:

Government of the Northwest Territories Pollution Control Division, Yellowknife	Phone: (403) 873-7654 (403) 873-7654 Telex: 034-45528 034-45531
Department of Indian Affairs and Northern Development, Yellowknife	Phone: (403) 920-8240 Telex: 034-45623
Environment Canada. Yellowknife	Phone: (403) 873-3456 Telex: 034-45646

Government of the Northwest Territories

SPILL REPORT

(Oil, Gas or Other Materials, i.e. Hazardous Chemicals, etc.)

Phone
(403) 920-8130

A	Report Date	Date and Time of Spill if Known
B	Location and Map Coordinates (if known) and Direction if Moving	
C	Party Responsible	
D	Product Spilled and Estimated Quantities (Provide Metric Volumes/Weights if Possible)	
E	Cause of Spill	
F	Is Spill Terminated or Continuing	
G	Extent of Contaminated Area	
H	Factors Affecting Spill or Recovery – Temperatures, Wind, Snow, Ice, Terrain, Buildings, etc.	
I	Containment – Naturally, Booms, Dykes or Other, No Containment	
J	Action, if any, Taken or Proposed to Contain, Recover, Clean-up or Dispose	
K	Do You Require Assistance	If so, what Form
L	Hazard to Persons or Property or Environment – Fire, Drinking Water, Threat to Fish or Wildlife	
M	Comments and/or Recommendations	

Reported by	Position, Employer, Location	Telephone
Reported to	Position, Employer, Location	Telephone

5.0 Action Plan

This section describes the typical response for the most likely spill possibilities such as an overflow of tailings pond, a breach of sewage lagoon, a tailings line break, or a fuel spill. For each type of spill, there should be: a description of the response personnel, equipment and sequence of actions that will most likely be needed to properly contain, recover and dispose of the spilled material; and the restoration measures that would be undertaken for the affected area.

6.0 Environmental Mapping

In this section, large scale maps are included of the areas where impacts could occur from spills. The following is a list of the types of information to include on the maps:

- parks, game preserves, resource harvesting areas;
- fish spawning and other environmentally sensitive areas;
- public or private water supplies and other priority protection areas;
- spill containment and control sites;
- spill response equipment depots;
- approved disposal sites;
- water currents and direction of flow; and
- access to priority areas.

7.0 Resource Inventory

This section should describe and list the manpower, and the specific types of equipment, machinery and tools available to respond to possible spills. These resources should be described in two categories:

- resources available on site; and
- resources available from other sources.

The strategic locations where the equipment and the responsible personnel are located should be identified, as well as the contact numbers for deploying these persons and pieces of equipment.

8.0 Training and Exercises

It is not sufficient to prepare a Contingency Plan without testing its elements through mock spill control and communication exercises. These exercises function to train personnel, to evaluate the plan holder's ability to respond to a spill, and to demonstrate to government and to the public that there is adequate preparation should a spill occur. This section of the Contingency Plan should detail the expertise and formal training of personnel responsible for supervising the response to spills, as well as outlining any training or simulation exercises which are planned or required. Each copy of the Contingency Plan should be catalogued as to location and person responsible for keeping it updated and available for use.

Attachment I

Hazardous Material Information

This section provides information on all potentially hazardous materials stored, handled, or transported by the plan holder such as fuels, explosives, chemical reagents and additives.

The following information is required for each compound:

Name of chemical and chemical supplier:

(1) Chemical formula or composition;

(2) Physical and chemical properties;

(3) Potential Hazards:
- fire
- explosion
- human health
- environment

(4) Emergency response action;
- fire
- explosion
- human health/first aid
- environmental protection

(5) Outline of transportation, handling, storage, use, and disposal methods; and

(6) Rate of usage, quantity, and location of storage.

Attachment II

Supporting Documents

This appendix includes a listing of reference materials, and government or company reports, which are relevant to the types of hazardous material stored, handled, or transported and to the environmental setting of the areas where impacts could occur.

Appendix II

A Typical General Contingency Plan

1.0 Introduction

Contains the purpose of the Plan and the policy regarding the Plan's implementation.

2.0 Reporting Procedures

Describes the communication system put in place to ensure an expedient response to a failure event. It should include the means of communication available to the response team and should also contain the telephone numbers of company officials, consultants, and other companies which may have to be contacted to supply the resources, expertise, and advice needed to deal with any emergency. A listing of government contacts who can provide technical assistance and information regarding environmental sensitivity, response procedures, mitigation measures, and the like, should also be included. Additionally, reference should be made to the N.W.T. 24 Hour Spill Report Line (403) 920-8130, the number used throughout the N.W.T. to inform all government departments that an event hs occurred.

3.0 Site Information

Describes and maps all the systems and system components associated with water use, diversion, containment, treatment and disposal of water. Also describes environmental sensitivity and potential impacts. Environmental sensitivity maps are an important component of this section.

4.0 System Component Failure Prevention

Describe routine monitoring of system components, preventive maintenance procedures, and records keeping.

5.0 System Malfunction Response Action

Describes response actions to malfunction events, mitigation measures, and rehabilitation procedures (where applicable).

6.0 Response Equipment

Describe the type, location, and all possible uses for the on-site response equipment. Also describes the type and location of response equipment located elsewhere, should this equipment be necessary.

7.0 Response Team

Contains an organizational chart of the response team and a listing of the duties of key personnel responsible for responding to failure events.

8.0 Training Exercises

It is not sufficient to prepare a general contingency plan without testing its elements through mock failure event and control exercises. These exercises serve to train the key personnel and point out any weaknesses in the plan. This section should detail the expertise and the formal training of the personnel responsible for supervising the response to events, as well as outlining any training or simulation exercises that are planned or required.

References

The references should include a list of all materials, reports, and other information used to develop the General Contingency Plan.

NORTHWEST TERRITORIES WATER BOARD

Additional Information

Additional information on the Board can be obtained by writing to:

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Executive Assistant
N.W.T. Water Board
P.O. Box 1500
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