



**Environment**

**Arrow and Kurdistan marine oil spills  
Crown Land Oily Waste Management Sites**

**Phase II environmental site assessment  
project**

## **Background:**

In February of 1970 the tanker *Arrow* released bunker C cargo into Chedabucto Bay, between Richmond and Guysborough counties. As a result, bunker C oil eventually washed ashore along beaches extending from Point Michaud in Cape Breton, to Black Duck Cove in Guysborough county.

In 1979, the tanker *Kurdistan* broke up in the Canso Straits northeast of Cape Breton Island, once again releasing bunker C oil into the area surrounding Chedabucto Bay between Cape Breton Island and mainland Nova Scotia. Beaches and coastlines in Guysborough, Richmond and Cape Breton counties, including sites as far east as Glace Bay, Lingan and Dominion, were oiled.

The clean up debris from these oil spills was disposed primarily on provincial crown land, at numerous locations in Guysborough, Richmond, and Cape Breton counties. In some cases municipal landfills, private lands, and federal properties were used. Provincial agencies involved in the response included Lands and Forests (now the Department of Natural Resources) and the Nova Scotia Department's of Fisheries, Environment, and the former Nova Scotia Water Resources Commission.

In all, crown land was used to manage oily waste material at *nine locations* in Richmond and Guysborough counties from the two separate oil spills.

The 9 crown sites are located near the following areas, with the corresponding marine spill listed in brackets:

### Municipality of the District of Guysborough County sites

1. Dover Road (Arrow)
2. Fox Island Main (Arrow)
3. Hadleyville (Kurdistan)
4. Sand Point (Arrow)

### Richmond county sites

5. Janvrins island (Arrow)
6. Oban Road (Kurdistan)

7. Fourchu (Kurdistan)
8. Evanston (Arrow)
9. Macintyre's Lake (Arrow)

## **What we have done to date:**

An interdepartmental provincial working group (comprised of the Department of Natural Resources (DNR), Nova Scotia Department of Environment (NSE), and Transportation and Infrastructure Renewal (TIR)) has been established to acquire more detailed information about the environmental condition of these sites. Work began in 2009 and continues today.

To date, the Departments of Environment and Natural Resources have completed initial Phase I type environmental site assessments at the crown sites. Phase I work involved the collection of historical information, site visits, and basic mapping of the sites in order to verify or estimate the type and amount of material at the locations, and identify any particular environmental issues, such as proximity to wells and watercourses.

*Phase I work also involved:*

- determining which sites were actually used, and for how much debris
- conducting inspections at each site with the Department of Natural Resources, recording site details and taking photographs,
- screening the sites to determine any immediate risks to human health or the environment

**Based on this work we are satisfied that there are no immediate human health or environmental risks at these sites.**

## **Next Steps:**

The next step will be to conduct more detailed site assessments at select crown sites. Department of Environment staff have recommended five sites, 2 in Richmond County and 3 in Guysborough County, to undergo Phase II environmental site work. This will involve the hiring of a professional environmental consulting firm to go to the sites and take samples of the soil and water and produce a report.

The administration and management of the contracts for this work will be done by professional staff of the Environmental Services Section of the Department of Transportation and Infrastructure.

*Phase II work will involve:*

- acquisition of permits by the environmental consultant from the Department of Natural Resources, to access the crown lands and bring in testing equipment
- mobilization of drilling and testing equipment to the sites by the environmental consultants
- drilling small diameter holes in the subsurface to obtain soil samples, and the installation of plastic piping within the same holes to obtain groundwater samples.
- sampling and monitoring of the sites
- re-establishment of the sites to limit access

We plan to have this work completed during the spring and summer of 2010, at the following sites. A final report is expected in the fall of 2010.

1. Hadleyville, Municipality of the District of Guysborough
2. Dover Road, Municipality of the District of Guysborough
3. Fox Island Main, Municipality of the District of Guysborough
4. Fourchu, Richmond County
5. Oban, Richmond County

***Role of Departments involved***

- *Nova Scotia Department of Environment's* primary role for this project is to assist in identifying, inspecting and monitoring these crown owned sites.
- The *Department of Natural Resources* is the landowner of these crown lands, and is working with the Department of Environment in the location, evaluation and assessment of these sites.
- *Transportation and Infrastructure Renewal's* Environmental Services section, which specializes in contracting professional environmental services and studies, will administer and manage the contracts necessary to conduct the Phase II work on these sites.

# Questions and Answers

## Provincial Crown environmental site assessment project Kurdistan and Arrow oily waste management sites

### ***What type of material is on the sites?***

The material that was placed on the crown sites is mainly beach debris, such as rock, seaweed, sand, and wood that was picked up along the shorelines during the cleanups in 1970 and 1979. For the most part, the debris was bagged, placed in drums and taken to the Crown sites for placement within trenches or pits.

### ***What is Bunker C oil?***

Bunker C is a petroleum compound; (*also called bunker, #6 oil, heavy oil etc.*) produced from the refining of crude oil. It is used as a fuel for some ships and large boilers.

Bunker C oil is dark colored, sticky, thick and heavy. It is not as volatile as other petroleum products like gasoline.

### ***Where are these sites located?***

There are five crown sites in Richmond County and four in the Municipality of the District of Guysborough. The actual disposal areas are relatively small in size, and are remotely located.

### ***What concerns does the placement of beach debris at these sites pose to the environment?***

Given the characteristics of bunker C we believe the potential for environmental impacts from these sites to be relatively low. However, there are several things we want to accomplish by conducting phase II testing of the sites. The first task is to determine if any of the bunker C oil has moved away from the disposal areas, either downward into the ground, or away from the sites. In addition, we want to gather information on the groundwater quality in the immediate vicinity of the areas.

Following the Phase II work and reports from the consultant, we will know more information about the condition of the sites.

***What are the long term plans for these sites?***

Before any decisions are made we need to gather more information about the condition of the sites, and receive recommendations from the professional consultants concerning what short and long term measures may be necessary for dealing with the material at these locations. We do foresee that a period of monitoring will be required before any decisions are made concerning any required future actions.

***What plans does government have for dealing with oily waste material from future marine spills?***

The Nova Scotia Department of Environment is part of an interprovincial working group, consisting of provincial and federal government departments. This group is undertaking work to plan for any potential future events that may lead to clean up and disposal of oily waste.

In addition, in 2008 the Department of Environment commissioned a waste management study to provide guidance for responsible parties and government in managing oily waste.

***Would government permit future placement of oily debris on crown lands for long term disposal?***

Today the responsible party (shipowner or cargo owner) would be liable for the clean up and disposal of any marine oil spill, including shorelines under the jurisdiction of the province. We would expect responsible parties to treat and dispose of oily waste materials at their own expense, at approved locations, under strict conditions of approval from the province.

In the past, the federal government assumed control of the response and clean up associated with the marine spills from the Arrow and Kurdistan tankers. Assistance was requested from the province in providing crown land for placing oiled debris from the clean up operations.

Recent Photos of Several Kurdistan waste management sites  
2009

