

# **APPENDIX 9B**

# **CONCEPTUAL FISH-OUT PLAN**



### **Table of Contents**

9B1	CONCEPTUAL FISH-OUT PLAN	1
9B1.1	Introduction	1
9B1.1.1	Objectives	5
9B1.1.2	Summary of Community Engagement	5
9B1.1.3	Summary of Engagement with Fisheries and Oceans Canada	7
9B2	PROPOSED WORK PLAN	7
9B2.1	Tentative Schedule	7
9B2.1.1	Phase 1 (Catch-Per-Unit-Effort)	8
9B2.1.2	Phase 2 (Final Removal Phase)	8
9B2.2	Roles and Responsibilities	8
9B3	SCIENTIFIC METHODS	9
9B3.1	Study Design	9
9B3.2	Fishing Methods1	1
9B3.3	Biological Data Collection	1
9B3.4	Fish Transfers	1
9B3.5	Diving Bird Avoidance	2
9B3.6	Potential Options for Community Involvement	2
9B3.6.1	Fishing Crew Members12	2
9B3.6.2	2 Fish Processing Crews	2
9B3.6.3	Fish Camps1	2
9B3.7	Processing and Distribution	3
9B3.7.1	Processing1	3
9B3.7.2	2 Storage1	3
9B3.7.3	B Distribution	3
9B4	REPORTING1	4
9B5	REFERENCES1	5

## Maps

Map 9B1.1-1	Location of the Jay Project	2
Map 9B1.1-2	Key Locations in the Conceptual Plan for the Fish-Out	4



### Abbreviations

Abbreviation	Definition
AANDC	Aboriginal Affairs and Northern Development Canada
CPUE	catch-per-unit-effort
DFO	Fisheries and Oceans Canada
Dominion Diamond	Dominion Diamond Ekati Corporation
e.g.	for example
Ekati Mine	Ekati Diamond Mine
et al.	and more than one additional author
Golder	Golder Associates Ltd.
i.e.	that is
NWT	Northwest Territories
Project	Jay Project

### **Units of Measure**

Unit	Definition
%	percent
<	less than
>	greater than
°C	degrees Celsius
cm	centimetre
km	kilometre
km <sup>2</sup>	square kilometre

## 9B1 CONCEPTUAL FISH-OUT PLAN

## 9B1.1 Introduction

The existing Dominion Diamond Ekati Corporation (Dominion Diamond) Mine and its surrounding claim block are located approximately 200 km south of the Arctic Circle and 300 km northeast of Yellowknife, Northwest Territories (NWT) (Map 9B.1-1). Dominion Diamond is proposing an extension of the Ekati Diamond Mine that is referred to as the Jay Project (Project). The Project would develop one new kimberlite pipe, the Jay pipe, which is located beneath Lac du Sauvage. The Project requires the construction of a dike to isolate the Jay kimberlite pipe, and the dewatering of the isolated area of Lac du Sauvage to provide access to the development site.

If the Project is approved, a fish-out will be required by Fisheries and Oceans Canada (DFO) as part of the *Fisheries Act* authorization. Fish-outs involve removing the fish from the portion of the lake that is identified for dewatering before development activities begin. Fish-out activities have been conducted at the Ekati Mine (numerous lakes) and at several other mine developments in the region (e.g., BHP 1998a, 1998b, 1998c, 2000; Dillon 2002a, 2002b, 2003, 2004; Rescan 1998a, 1998b, 1998c, 1998d, 1999, 2000), including the De Beers Canada Inc. Gahcho Kué Project in 2014. DFO has also established a *General Fish-out Protocol for Lakes and Impoundments in the Northwest Territories and Nunavut* (General Fish-out Protocol; Tyson et al. 2011) to guide fish-out efforts.

This conceptual fish-out plan provides an overview of the preliminary plan, based on initial engagement with local communities and DFO, as well as previous fish-outs and site-specific protocols. The plan will be refined after further engagement with communities and DFO, and a final detailed fish-out plan will be prepared before the fish-out is implemented.



3:\CLIENTS\DOMINION\DDEC Jay and Lynx Projects\Figures\13-1328-0041 Jay & Lynx EA\Aquatics\DAR\DAR\_Aqua\_029\_G



Development of the Project will involve dewatering of approximately 4 square kilometres (km<sup>2</sup>) of Lac du Sauvage within an area that will be diked and includes several existing islands that will be connected in a chain within the dike system (Map 9B1.1-2). A stream diversion will be constructed to divert natural stream water into Lac du Sauvage, outside the isolated area. The fish-out will be planned to begin after the lake area is isolated but before dewatering begins. The fish-out may begin prior to dike completion if isolation is achievable with silt curtains.

Based on the hydroacoustic surveys conducted in Lac du Sauvage in 2013 (Annex XIV; Fish and Fish Habitat Baseline Report), it is estimated that there could be 7,100 to 23,400 fish in the isolated area of Lac du Sauvage, with about 5 percent (%) large enough (355 to 1,170) to be distributed for human consumption (i.e., 30 centimetres [cm] long or longer). The remainder would be small and composed of juveniles and small-bodied fish species (e.g., Slimy Sculpin, Ninespine Stickleback). Based on 2013 field data, Lake Trout are expected to be most abundant (36% of total catch in 2013), followed by Lake Whitefish (22%), Round Whitefish (20%), Slimy Sculpin (12%), Cisco (8%), Arctic Grayling (1%), and Ninespine Stickleback (1%).

The fish-out might be initiated as early as 2017, which leaves over two years to plan and implement the fish-out. Engagement with DFO and communities on the fish-out began in early 2014 and will be an important part of the ongoing planning and implementation process.





Developer's Assessment Report Jay Project Appendix 9B, Conceptual Fish-Out Plan October 2014

### 9B1.1.1 Objectives

The main objectives of the Project fish-out are to remove and use as many fish as practical from the isolated area of Lac du Sauvage, and to collect data to fulfill DFO's requirement to provide detailed information on fish communities and ecological conditions of Arctic lakes. The *General Fish-out Protocol for Lakes and Impoundments in the Northwest Territories and Nunavut* (General Fish-out Protocol; Tyson et al. 2011) identifies the following guiding objectives:

- to engage local communities and ensure that fish harvested during the fish-out are fully utilized by traditional resource users; and,
- to collect ecological information (biological, limnological, and habitat) on Arctic lakes in the NWT.

While addressing these guiding objectives, the main goals of the Project fish-out are to:

- remove and utilize as many of the fish from the area of Lac du Sauvage enclosed by the isolation dikes as practical;
- collect and incorporate community input into the plan, and use local community members as part of the fish-out crew, where feasible; and,
- conduct the fish-out in a manner consistent with the General Fish-out Protocol.

### 9B1.1.2 Summary of Community Engagement

Meetings have been held with Aboriginal communities that may be potentially affected by the Project. The need for a fish out and concepts for a fish-out plan were discussed as part of Dominion Diamond's quarterly engagement meetings. Additionally, Project workshops have been held where fish-out concepts were discussed in more detail. Project workshops were held during March 10 to 13, 2014, and June 17 to 26, 2014 that included community members representing the Tłįchǫ Government, Kitikmeot Inuit Association (Kugluktuk), Łutselk'e Dene First Nation, Yellowknife Dene First Nation, and North Slave Métis Alliance.

Communities that were engaged expressed concern for water and fish. Concerns expressed during the March meetings about the size of the dewatering and fish-out area for what was then proposed as the "Jay-Cardinal Project" were a primary factor to Dominion Diamond adjusting the Project proposal to the "Jay Project." This change to the Project reduced the in-lake footprint by more than tenfold from a dewatering and fish-out area of about 44 km<sup>2</sup> to what will now be closer to 4 km<sup>2</sup>.

Communities also expressed interest in being involved in the fish-out, being able to consume fish on the land and in their communities, and ensuring there was little wastage of fish during the fish-out. Their interest led to discussion of ideas on how to get the people involved and what might work best for maximizing the value of the resource to as many members of the communities as is possible.



Most of the ideas for the fish out provided by the communities originated under the initial design of the Jay-Cardinal Project (discussed during March 10 to 13, 2014). The ideas were discussed again during the workshops for the revised Project design for the Jay Project (June/July 2014); some ideas may require further evaluation to determine whether they are still applicable given the reduced footprint and fewer fish to be harvested.

The ideas from the community meetings included, but were not limited to, the following:

- Get youth involved in as many parts of the fish-out as feasible.
- Team youth with Elders to provide learning experience.
- Consider organizing angling events to involve more community members.
- Harvest fish during times when the fish can be used by the communities, for example, during Aboriginal Day in Yellowknife.
- Consider quality of fish for food so that no waste occurs.
- Use all fish for communities including fish waste and small fish that die during handling.
- Fish waste and small fish can be provided to trappers and dog handlers for bait and food. Otherwise, plan to transfer live small fish to the main body of Lac du Sauvage to provide potential forage for large fish.
- Use small fish to make fertilizer for use in community gardens.
- Involve community members in the capture, processing, distribution, and data collection components of the fish-out.
- Use this opportunity to create a fish camp where communities can come to be involved in all parts of the fish-out.
- Consider making the fish camp into a facility that can be used by the community on a long-term basis, which will provide value for cultural use including a hunting camp and a resting place.
- Provide freezers in communities for fish storage and distribution.
- Use gill nets through ice to harvest for preservation of quality. Community members with commercial fishing experience could be hired to catch and sell fish.
- Use methods that have been proven to work, and concentrate on maximizing community involvement and employment opportunities.
- Consider other options for fish preservation, such as smoking and canning (jars). Wood to be provided in fish camps by Dominion Diamond.
- Continue to involve communities during detailed design of the fish-out plan and provide adequate time for notification.



# 9B1.1.3 Summary of Engagement with Fisheries and Oceans Canada

Discussions with DFO occurred in February and on May 26, 2014 to discuss the Project, potential aquatic effects, what may be required for a *Fisheries Act* authorization, and offsetting options. The Project fish-out was briefly discussed with an understanding that further discussion would be required to develop site-specific protocols and a detailed fish-out plan.

## 9B2 PROPOSED WORK PLAN

### 9B2.1 Tentative Schedule

Based on the Mine Water Management Plan (Appendix 3A), the fish-out may begin in 2017 once the isolation structures are in place. In 2018, the fish-out would continue within the isolated portion of Lac du Sauvage. In 2019, final removal of fish could potentially occur during dewatering.

In accordance with the General Fish-out Protocol, the fish-out will proceed in two major phases:

- a catch-per-unit-effort (CPUE) phase; and,
- a final removal phase.

The CPUE phase generates fish community CPUE data for each fish population in the lake and to remove a substantial proportion of the fish biomass. The CPUE phase may also represent the period where most of the large-bodied fish are removed before Project development begins (i.e., prior to dewatering). The final removal phase occurs prior to or during dewatering, if practical. The transition from the CPUE phase to the final removal phase will be based on the General Fish-out Protocol and will be developed with DFO as part of the detailed fish-out plan.

The number of days of sampling and specific timing of the CPUE and final removal phases will depend on the catches of fish, as well as on the construction schedule. An estimated schedule based on the anticipated catches from population estimates will be included in the detailed fish-out plan. It is currently expected that the fish-out sampling and associated limnology and physical habitat data collection will be conducted during the open-water seasons of 2017 and 2018 (CPUE phase or CPUE phase with final removal phase initiated), likely between June and October for both fish-out years.

Additional fishing may be deployed following the CPUE phase. Under-ice fishing during winter may be considered, as recommended by the communities, and fishing may be considered during the dewatering phase in 2019, if deemed necessary.



## 9B2.1.1 Phase 1 (Catch-Per-Unit-Effort)

Preparation for fish-out will start during 2016 when communities are engaged to confirm their involvement and set a logistics plan in motion. The start of actual fish-out activities will be contingent on the isolation of the area to be dewatered and the timing of silt curtain placement (used to contain sediment released during dike construction).

Dike construction will commence during summer 2016 and continue through to 2018. During summer construction, turbidity curtains will be installed near the portion of the alignment where dike construction will occur. Communities will be involved in sampling programs and potentially a fish camp to be set up during early summer 2017. Communities have suggested an angling program, which would allow for more community member involvement.

Based on the General Fish-out Protocol and experience on other fish-outs, the CPUE phase will use many multi-panel gill nets as the primary method for fish capture. Once the isolation structures are in place, gill netting would begin during summer 2017. The sampling will follow a random or stratified random design to allow for later calculation of population sizes, as per the General Fish-out Protocol. Angling may also be considered as a removal method during the CPUE phase. Under-ice gill netting may also be conducted in the following winter, based on engagement with DFO and overall site logistics. The standard unit of effort will remain unchanged for the duration of the CPUE phase.

### 9B2.1.2 Phase 2 (Final Removal Phase)

Phase 2 may start during late summer 2017 or summer 2018 and may consist of a gill netting program during the open-water season, as well as additional fish capture methods to remove all fish within the isolated area (e.g., electrofishing, set lines, minnow traps, seine nets, etc.). The netting program may target potential areas of fish congregation during the fall migration in 2017.

Other sampling methods may also be used during the final removal phase. Small fish will be targeted during the same sampling period by using methods such as minnow trapping, electrofishing, and beach seining. Fishing efforts may take place or continue during dewatering in 2019, if deemed necessary. The schedule, sampling effort, and methods will consider input from communities and DFO.

## 9B2.2 Roles and Responsibilities

The DFO habitat biologist will be the principal contact for the Project and will be informed by Dominion Diamond before and during the fish-out.

The project manager will be Dominion Diamond's representative for the fish-out and will be responsible for approving and coordinating the detailed fish-out plan, schedule and budget, staffing, communicating with DFO, and providing deliverables.

A project biologist will be involved in developing the work plan and will be responsible for training field staff, supervising field activities and data collection, quality assurance and quality control, conducting data analysis, and preparing deliverables.



Field crew leads will work under the supervision of the project biologist and will be in charge of fishing, data collection, and health and safety for each field crew. Field crew technicians will conduct the fish-out and data collection under the supervision of the crew leads and project biologist. If possible, field leaders and technicians will be members of local communities with experience in gill netting, fish handling, and processing.

## 9B3 SCIENTIFIC METHODS

## 9B3.1 Study Design

The fish-out will follow the framework and general protocols described in the General Fish-out Protocol (Tyson et al. 2011). An overview of the conceptual study design is provided below. Detailed methods, sampling protocols, and schedules will be determined in consultation with local communities and DFO, and provided in a detailed fish-out plan before the program is initiated.

Based on the objectives listed in Section 9B1.1.1, the core components of the fish-out are:

- the removal of fish;
- the distribution of fish to communities; and,
- the collection of basic fish and fish habitat data.

Also under consideration is the possibility of transferring small-bodied fish to the non-diked area of Lac du Sauvage. A fish salvage was the preferred method of removing small-bodied fish (e.g., fish not desirable for human consumption) based on feedback at the community meetings. However, additional discussions will be undertaken with DFO and communities about potential effects of transferring fish to the productivity and the stability of the fishery in Lac du Sauvage and Lac de Gras.

At completion of the fish-out, through baseline studies and additional work conducted during the fish-out, there will be sufficient information collected within the affected area to describe the following:

- 1) fish community;
- 2) aquatic biology/limnology; and,
- 3) physical habitat inventory.

Baseline information for each of these three components was collected as part of baseline reporting for the Project, which includes the Fish and Fish Habitat Baseline Report (Annex XIV), the Benthic Invertebrate Baseline Report (Annex XIII), the Plankton Baseline Report (Annex XII), and the Water and Sediment Quality Baseline Report (Annex XI). An overview of the study plans for fish communities, limnology, and physical habitat inventory is provided in the following sections.



#### **Fish Community**

The fish community component will consist of a CPUE phase and a final removal phase. The CPUE phase will be used to estimate the population size of fish based on the removal method (Tyson et al. 2011). The CPUE phase consists of repeated sampling using consistent protocols and gear types, and will be conducted before any changes to the physical habitat (i.e., before dewatering).

The final removal phase will begin when most large-bodied fish have been removed based on a site-specific protocol that will be developed as part of the detailed fish-out plan, and as agreed upon with DFO. The objective of the final removal phase will be to remove as many of the remaining fish from the study area as practical using a wide range of sampling methods. Dewatering of the study area may start during the final removal phase, which can concentrate remaining fish into a smaller volume of the lake.

The sampling design in terms of sample locations and effort is being developed, and will be provided as part of the detailed fish-out plan.

#### **Aquatic Biology/Limnology**

Basic limnology data were collected as part of the baseline data collection and reporting (Annex XIV, Annex XII, Annex XII, and Annex XI). Water quality variables measured included water temperature, dissolved oxygen, pH, Secchi depth, and conductivity. Limnology data also included nutrient concentrations, chlorophyll *a* as a surrogate for primary productivity, and zooplankton and benthic invertebrate community composition. Data were collected during August and September of 2013 in Lac du Sauvage and several smaller lakes in the surrounding sub-basins. Field water quality parameters (e.g., temperature and dissolved oxygen) will be collected during fish-out activities; however, no additional detailed limnology studies will be required to satisfy the fish-out requirements. Additional studies may be considered to support complementary offsetting measures, as part of the final offsetting plan for the Project to be developed with input from communities and DFO.

#### **Physical Habitat Inventory**

A habitat inventory of the lake was conducted as part of the fish and fish habitat baseline data collection and reporting (Annex XIV). Data were collected from early August to mid-September of 2013 in Lac du Sauvage and several smaller lakes in the surrounding area. Habitat inventories included bathymetric surveys, shoreline and deep water substrate characterization, and qualitative shoreline habitat mapping. The habitat maps and classifications will be used to confirm all habitat types are sampled during the CPUE phase, using a stratified-random sampling design for fishing gear deployment. No additional habitat inventory surveys will be required to satisfy the fish-out requirements. Additional studies may be considered to support complementary offsetting measures.



## 9B3.2 Fishing Methods

Because small- and large-bodied fish are present in the study area, several different gear types will be used in the fish-out. Gill nets will be used for the CPUE phase, to be consistent with the General Fish-out Protocol. Previous fish-outs have shown that this method is the most effective for capturing adult and large-bodied fish, which will be processed and distributed as food (Section 9B3.7). During the final removal phase, gill nets will continue to be used, and the mesh sizes of nets may be adjusted to target the strongest size classes of fish remaining in the lake. In addition, the removal phase may use Gee minnow traps to target small-bodied fish. Other methods, such as angling, baited traps, fyke nets, beach seines, set-lines, or electrofishing may also be used to capture as many of the remaining fish as practical, depending on conditions during sampling. Where possible and agreed upon with DFO, feedback on fishing methods and community involvement will be considered and incorporated into the fish sampling design for each phase of the fish-out.

## 9B3.3 Biological Data Collection

All fish captured will be counted, identified to species, and distributed as described in Section 9B3.7. Life history data will be collected from a sub-sample of small, younger fish and all larger, older fish. Biological data recorded from the sub-sample of fish will include length (total or fork; to nearest millimetre), weight (to nearest gram), and where applicable, the sex, maturity, and ageing structure(s). Tissue samples (e.g., muscle, stomachs) are sometimes collected during fish-outs to gather additional biological data in the study area. Whether or not tissue samples will be collected and analyzed for the Project fish-out will be discussed with DFO and local communities before the final detailed fish-out plan is prepared.

Details of any additional studies to be considered for complementary offsetting measures will be developed as part of the detailed fish-out plan.

## 9B3.4 Fish Transfers

In accordance with the objective to fully utilize fish harvested during the fish-out, it is expected that all large fish captured will be sacrificed, and distributed to the communities. Although the catch from fish-outs can potentially be transferred alive to another waterbody, this method of fish disposal is the least desirable, as it may cause adverse effects to the remaining population in the lake where the fish are transferred. According to the General Fish-out Protocol, live transfer should only be considered when the fish-out is conducted in a small, isolated portion of a lake and fish are transferred to a much larger waterbody. The Lac du Sauvage fish-out meets the criteria of a small area of a large lake being isolated. Communities have expressed an interest in small-bodied and juvenile fish being captured alive and transferred to the main body of Lac du Sauvage. The feasibility of completing live transfers will be evaluated as part of the detailed fish-out plan.



Northern lakes are typically oligotrophic, with low nutrient levels that limit the productivity and the density of fish that can be supported. Many of these lakes are near their carrying capacity for fish, and transfer of additional fish will likely result in greater competition, reduced growth and survival, and no long-term increase in the standing stock of fish. However, it is feasible that the transfer of some small-bodied forage fish from the isolated area could benefit larger piscivorous fish (fish that feed on other fish) in the main lake. The final decision of whether to sacrifice all fish or transfer some small-bodied fish to Lac du Sauvage will be made in discussion with DFO and Aboriginal communities.

## 9B3.5 Diving Bird Avoidance

During the execution of the CPUE phase of the fish-out, the large-scale gill netting program could result in incidental mortalities of diving waterbirds (e.g., loons and grebes) if they become entangled in the gill nets. A diving bird mitigation strategy will be described as a component of the detailed fish-out plan.

## 9B3.6 Potential Options for Community Involvement

## 9B3.6.1 Fishing Crew Members

Local community members would have the opportunity to participate in fish capture and data collection during the fish-out and as field leaders and technicians, based on experience.

One potential scenario is for three-person fishing crews, where the crew lead would be an experienced technician that would operate the boat and record the data, and two local community members would assist with setting and retrieving the fishing gear, and then processing the catch to collect the necessary biological data. Specific staffing of the fish-out crews will depend on the interest and availability of community members with the necessary skills, experience, and safety training.

## 9B3.6.2 Fish Processing Crews

Processing fish is a key way to utilize the skills of traditional resource users. Local community members would be responsible for filleting large-bodied, consumable fish captured during the fish-outs. Biological information would be collected by the fishing crews on the boats, but fish would be transferred to processing stations for filleting and packaging as described in Section 9B3.7. The details of fish processing stations will be developed based on site conditions as part of the detailed fish-out plan.

## 9B3.6.3 Fish Camps

Fish camps are a potential component of the fish-out that would allow greater involvement of local communities, especially for youth, Elders, and less experienced fishers (Map 9B1.1-2). Fish camps would provide an opportunity for traditional resource users to harvest fish. The camps would also create opportunities for education and knowledge transfer among Elders and youth from local communities. Fish caught during the camps could be prepared and consumed at the camp, or transferred to the processing station for packaging and distribution.



If determined to be feasible, the fish camps would be conducted during the early phases of the fish-out, when densities of fish are highest and most of the large fish are being removed (potentially at ice-out of first year). The feasibility of fish camps will be examined by Dominion Diamond during the development of the detailed fish-out plan based on logistical details at the Ekati Mine and through continued engagement on how fish camps can best be incorporated while still satisfying the phased fishing effort requirements of the DFO fish-out protocols.

## 9B3.7 Processing and Distribution

## 9B3.7.1 Processing

Methods for processing the fish will be determined in discussion with the local communities that will use the fish. Large-bodied fish of species that are desired for consumption could be filleted, vacuum-sealed, and then frozen, although alternate options for processing will be considered based on community preferences. Fish not desirable for human consumption (e.g., Slimy Sculpin, Ninespine Stickleback, juvenile fish) could be packaged whole and distributed for use as dog food or trapping bait. Disposal of wastes from fish processing (e.g., guts, un-usable trimmings) will be determined in discussion with DFO and described in the detailed fish-out plan. Wastes from fish processing may be used for dog food, trapping bait, or disposed of within the lake.

Fish will be processed at a designated station. One option is for floating processing stations, which would reduce the potential for wildlife attraction and conflicts, and also facilitate clean-up and waste disposal. Alternatively, a shore-based station could be constructed, which might require electric fences for protection from wildlife, but would simplify fish storage and transport. Map 9B1.1-2 shows a potential location for fish processing; actual location(s) would be determined as part of the detailed fish-out plan in coordination with the construction activities occurring at the site.

Fish that may be transferred live to Lac du Sauvage, if deemed feasible and desirable, will require consideration for handling and transport to minimize damage and maximize survival. Designated transport routes, transfer locations, and maximum holding times will be established during the development of the detailed fish-out plan.

## 9B3.7.2 Storage

Storage will be determined in discussion with the local communities that will use the fish. A proposed method is to flash-freeze vacuum-sealed fish using dry ice and then transfer the fish to freezers for storage until distribution. If desired by local communities, and if feasible, processing could also include smoking a portion of the fish, possibly as part of the fish camps.

## 9B3.7.3 Distribution

Fish will be distributed to communities as soon as practical after processing. Flights that normally fly to communities could carry fish. The fish would then be delivered to a designated distribution facility that may include a storage freezer or shelves for storage of dry or preserved fish. Details of distribution of fish for eating and/or dog food or trapping bait will be determined closer to fish-out implementation to best meet community requests.



## 9B4 REPORTING

A reporting protocol will be established as part of the detailed fish-out plan. The reporting is expected to include a weekly or daily report, including total fish catch and effort, which will be submitted electronically to the DFO habitat biologist. This information will be used to determine when to transition from CPUE to final removal phase, and when the final removal phase will be complete. A summary data report will be provided after the fish-out is completed. The report will meet the requirements for deliverables described in the General Fish-out Protocol and will include the following:

- biological and survey data;
- data analysis;
- CPUE population estimates;
- comparison of results to baseline, assessments, and predictions;
- quality assurance and quality control results; and,
- discussion relating the data to the fish-out objectives.

At completion of the fish-out, DFO will also be provided with copies of photographs, copies of field notes and data, and an electronic database of collected data.



## 9B5 REFERENCES

- BHP (Broken Hill Proprietary Company). 1998a. 1997 Lake Fish-Out Program: Koala Lake Report. Prepared for BHP Diamonds Inc., Yellowknife, NWT, Canada. Prepared by Rescan Environmental Services Ltd.
- BHP. 1998b. 1997 Lake Fish-Out Program: Long Lake Data Report. Prepared for BHP Diamonds Inc., Yellowknife, NWT, Canada. Prepared by Rescan Environmental Services Ltd.
- BHP. 1998c. 1997 Lake Fish-Out Program: Panda Lake Report. Prepared for BHP Diamonds Inc., Yellowknife, NWT, Canada. Prepared by Rescan Environmental Services Ltd.
- BHP. 2000. King Pond Live Fish Transfer Report for Fisheries Authorization No. SC00028. Submitted to DFO by BHP Diamonds, Inc., Yellowknife, NWT, Canada. January 18, 2000.
- Dillon (Dillon Consulting Ltd.). 2002a. Desperation and Carrie Pond Fish Transfer Study, 2001. Prepared for BHP Billiton Diamonds Inc., Yellowknife, NWT, Canada.
- Dillon. 2002b. Fox Lake 2001 Fish-Out. Prepared for BHP Billiton Diamonds Inc., Yellowknife, NWT, Canada.
- Dillon. 2003. Beartooth Lake 2002 Fish-out. Report for BHP Billiton Diamonds Inc.
- Dillon. 2004. Two Rock Lake and Sable Lake: 2002 Fish-out. Report for BHP Billiton Diamonds Inc.
- Rescan. 1998a. 1997 Lake Fish-Out Program: Koala Lake Report. Prepared for BHP Billiton Diamonds Inc., Yellowknife, NWT, Canada.
- Rescan. 1998b. 1997 Lake Fish-Out Program: Long Lake Data Report. Prepared for BHP Billiton Diamonds Inc., Yellowknife, NWT, Canada.
- Rescan. 1998c. 1997 Lake Fish-Out Program: Panda Lake Report. Prepared for BHP Billiton Diamonds Inc., Yellowknife, NWT, Canada.
- Rescan. 1998d. 1997 Lake Fish-Out Program: Misery Lake Data Report. Prepared for BHP Billiton Diamonds Inc., Yellowknife, NWT, Canada.
- Rescan. 1999. 1998 Long Lake Cell C Fish-Out Program Data Report. Prepared for BHP Billiton Diamonds Inc., Yellowknife, NWT, Canada.
- Rescan. 2000. 1999 Long Lake Cell D Fish-out Program Data Report. Prepared for BHP Diamonds Inc. Ekati Diamond Mine. Prepared by Rescan Environmental Services Ltd, Yellowknife, NWT, Canada.
- Tyson JD, Tonn WM, Boss S, Hanna BW. 2011. General fish-out protocol for lakes and impoundments in the Northwest Territories and Nunavut. Canadian Technical Report of Fisheries and Aquatic Sciences 2935: v + 34 p.