



## David Bustard and Associates

3745 - 12th Avenue

Box 2792

Smithers, B.C.

V0J 2N0

Telephone: (604) 847-2963

Fax: (604) 847-2375

February 23, 1999.

John Craig,  
Pacific Northern Gas Ltd.,  
1400-1185 West Georgia St.,  
Vancouver, B.C.  
V6E 4E6

### Summary of Construction Monitoring at PNG's Maxan Creek Crossing

Recent high water events have accelerated erosion along the river-left bank at the Maxan Creek crossing. This has resulted in approximately 7.5 m of the pipeline being exposed. PNG proposed to armour the bank and install a rock spur above the pipeline to re-direct the streamflow to the old channel location and prevent further bank erosion. As well, the company proposed to cover the exposed pipe with a 5 m wide rock protection cap. A fish salvage would be conducted prior to any instream work. To facilitate construction and the fish salvage it was proposed that a small downstream beaver dam be opened to lower the in-site water levels.

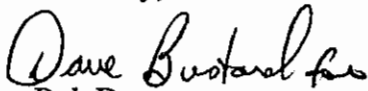
The proposed plan was approved by agency representatives (MOELP - John Stadt and DFO - Eero Karanka) following a February 12, 1999 on-site field inspection. The small beaver dam was partially breached several days prior to the start of construction slowly lowering the water level at the crossing by approximately 30 cm. Rob Dams of Dave Bustard and Associates Ltd was on-site for the first two days of the three-day project to conduct a fish salvage and to serve as an environmental monitor during construction.

The project was initiated on February 15 starting with the removal of a thick layer of surface ice with the excavator. A fish salvage was subsequently conducted within the (50m x 12 m) work area using a Smith-Root BP15-C electroshocker. The site was electrofished with two upstream passes for 1250 seconds of effort. A total of 2 Pacific lamprey ammocoetes, one 25 mm lake chub and one 40 mm large scale sucker were captured and released unharmed downstream from the breached beaver dam. In addition, one sculpin fry and one 50 mm largescale sucker were observed but escaped capture. Some difficulty was experienced in salvaging a small deep portion of the site along the eroded bank. This was not considered to be a problem due to the low density of fish present elsewhere in the site.

On February 16 the site was again salvaged prior to the start of rip-rap placement. No fish were captured. Large quarry rocks (typically 1-2 m diameter) were placed along a 50 m length of shoreline, and an approximately 10 m long spur was constructed out approximately 4 m into the channel at a location and angle as discussed by agency representatives. A single row of rocks was also placed along each side of the exposed pipe.

The completion of the project on the third day consisted of facing smaller rock along the bank behind the large boulders. Throughout the project streamflows remained low and air temperatures stayed below zero C. The excavator did not enter the stream channel and all rocks were placed into position from the streambank. The project was accomplished with a minimum of disturbance to the riparian vegetation and sediment inputs to the stream were minimal from the construction activity.

Sincerely,



Rob Dams,  
Fisheries Technician,  
David Bustard and Associates Ltd.

cc. Eero Karanka, DFO, Smithers  
dd. John Stadt, FES, Burns Lake  
ee. John Safonoff, PNG, Burns Lake

