BC hydro
FOR GENERATIONS

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During Stage 2 of the Site C Project, studies are underway to update many of the historical studies and information known about the project.

The potential Site C project, as originally conceived, will be updated to reflect current information and to incorporate new ideas brought forward by communities, First Nations, regulatory agencies and stakeholders. Today's approach to Site C will consider environmental concerns, impacts to land, and opportunities for community benefits, and will update design, financial and technical work.

PEACE SITE C PROJECT
ENVIRONMENTAL IMPACT STATEMENT

Part Two

Environmental
and
Socio-Economic Assessment

SECTION 5.0 - PHYSICAL ENVIRONMENT

CONTENTS

SECTION 5.0 - PHYSICAL ENVIRONMENT

5.1 INTRODUCTION

Existing conditions and predicted changes due to the Site C development were studied for the following aspects of the physical environment:

1. Climatic conditions.

2. River regime, sedimentation and ice.

3. Mineral, natural gas and gravel resources.

4. Riverbank and reservoir shoreline stability.

The climate study was based on information from Environment Canada, the B.C. Ministry of the Environment and selected field observations by Thurber Consultants.

Studies by B.C. Hydro on river hydrology, including morphology, sediment regimes and ice regimes were relied upon for these aspects. Information on minerals, gas and gravel resources was available from the government, B.C. Hydro and Thurber Consultants. A separate study by Thurber Consultants for B.C. Hydro's Hydroelectric Design Division on riverbank and reservoir shoreline stability was also used in the assessment.

5.2 CLIMATIC CONDITIONS

Recent trends toward slightly colder temperatures and higher precipitation recorded at Fort St. John are similar to those experienced at Prince George and Fort St. James and generally cannot be attributed to the presence of Williston Lake.

5.2 CLIMATIC CONDITIONS - (Cont'd)

Direct effects of the Site C reservoir on climatic conditions would be confined to the terraces within the valley. The most pronounced effect being a greater frequency and density of fog particularly during cold weather in spring and fall. Under winter conditions sufficiently cold to freeze the reservoir, the amount of fog would be reduced as compared to the present situation in which the river remains open upstream of Site C.

Since cold air could not drain off intermediate and upper terraces as easily with the reservoir as without it, there could be a small decrease in night-time air temperature in the spring through fall on these upper terraces. Although cold air pooling would favour the occurrence of late spring and early fall frosts on the upper terraces, this effect would be offset somewhat by the modifying effect of the warmer reservoir water.

Other parameters such as daytime air temperature, wind speed, humidity, dew fall and precipitation would be affected to a small degree or not at all. Most direct effects of the Site C reservoir on climatic conditions would be confined to the terraces along the shoreline. Long-term observational programs in the valley and energy budget analysis would assist in predicting the magnitude of local effects on climatic variables.

5.3 RIVER AND ICE REGIMES

Estimates have been made of the rate at which deltas would build up at the mouths of tributary arms and the rate at which the main reservoir would fill with fine sediments. The Halfway River would be the main source of sediment; the 7-mile long Halfway arm of the reservoir would be transformed into a silty flood plain with invasion of vegetation within 50 years. The Moberly River arm would not fill so

5.3 RIVER AND ICE REGIMES - (Cont'd)

rapidly and bed-load materials would extend into the reservoir. The main reservoir would take many centuries to fill with sediment.

The B.C. Railway or Alaska Highway bridge foundations which are downstream of Site C are not expected to be affected by degradation of the Peace riverbed.

An ice cover with an open water channel near the centre of the reservoir would develop in most winters. The river would normally remain open for 30 to 65 km (20 to 40 mi) downstream of the dam and there would be a greater frequency of open water in the vicinity of the Clayhurst ferry than at present.

5.4 MINERAL, NATURAL GAS AND GRAVEL RESOURCES

The Site C development would not prevent the extraction of deep coal or gas deposits under the Peace River.

Although numerous gravel bars would be inundated, large quantities (1000 million cu yd) of gravel would remain above the full supply level between Bear Flats and Hudson Hope.

5.5 PRESENT VALLEY SLOPE STABILITY

Landslides, and to a lesser extent flowslides, have played a significant role in the development of the lower Peace River valley; some of the valley slopes are still marginally stable. Most past slides have been shallow seated, and it is for this reason that relatively minor disturbances (e.g. road cuts or fills) can reactivate movement.

A few deep seated slides have also occurred within the proposed reservoir area. The Attachie Slide in 1973 deposited 8 to

5.5 PRESENT VALLEY SLOPE STABILITY - (Cont'd)

12 million cubic yards of overburden in the valley bottom, blocking the river for 10 hours. The Cache Creek slide on the north bank downstream of Bear Flats is an example of a slide in bedrock (shale and sandstone). In the early 1900s some reactivation of the toe of this slide mass occurred.

Slides involving bedrock have occurred infrequently relative to slides in overburden. In order for a slide to develop in shales, it is believed that a shear plane must exist in a critical location parallel to the bedding along with adverse groundwater conditions. Although shear planes of limited extent undoubtedly exist at various horizons, field work to date suggests that extensive shear planes required for large failures may only exist close to the contact of the shale with the overlying Dunvegan Sandstone.

The 750 foot high shale slopes downstream of Tea Creek stand as steep as 2H:1V; a limited amount of bank sliding has occurred but the slope is relatively stable.

The valley slopes upstream of Site C have been classified in terms of magnitude and type of slide potential and the probability of its occurrence. The detailed results of this classification can be found in the geotechnical consultant's report.*

5.6 FUTURE SHORELINE CONDITIONS

The proposed reservoir would consist of about 120 km (73 mi) of banks higher than 150 m (500 ft), referred to as "high banks" in the study, and 130 km (81 mi) of "low banks". The reservoir full supply level would fall below the bedrock/overburden contact for

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* Thurber Consultants Ltd., 1978. Site C Reservoir Shoreline Stability Assessment. B.C. Hydro and Power Authority, Vancouver.

5.6 FUTURE SHORELINE CONDITIONS - (Cont'd)

at least 90 percent of the high bank sections and 60 percent of the low bank sections of shoreline. Thus, for the most part, the reservoir is expected to have minimal adverse effect on the stability of the shoreline.

The risk of occasional large slides (mostly in overburden) unrelated to reservoir flooding is appreciable at defined locations. The frequency of these slides can be expected to be similar to that experienced in the past.

Although flooding is expected to decrease the stability of some of the existing slide and slump debris, the study showed the reservoir would likely have little adverse effect on the Cache Creek Slide.

To assist in land use planning, a residential safeline* has been located for privately owned land on the north side of the river as shown on Map 4 at the end of Part Two (i.e. following Section 15.0).

For the 130 km (81 mi) of low banks, the average setback based upon studies on private property would be 65 m (215 ft) from the full supply level. The residential safeline location for high banks would fall 150 to 180 m (500 to 600 ft) back from the top of the present slope for the entire 120 km (73 mi) of shoreline. The safeline for high bank areas under present conditions is identical to that after flooding. In low bank areas, the present safeline lies close to the riverbank.

Within areas of potential instability the precise location where slope failures would occur has not yet been determined although

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* The residential safeline as used in this report is a conservatively located line above which the safety of residential land uses can be assured. Safeline location has allowed for the possibility of slide-induced waves.

5.6 FUTURE SHORELINE CONDITIONS - (Cont'd)

an estimate of the area of active sliding, after reservoir flooding, has been made. The total area of low bank that could have active slides is expected to be 100 to 160 ha (250 to 400 ac) or less than 20 percent of the area below the low bank safeline. The total high bank area involved in active slides is predicted to be 120 to 360 ha (300 to 900 ac) or about 6 percent of the area below the safeline for high banks. The new pattern of active area should be visible within 5 years of reservoir filling with the area of active slides being similar to that which exists at present.

Further field investigation of specific localities are being carried out. These localities include the steep bank area upstream of the dam and the high banks opposite Bear Flats.

SECTION 6.0 - GENERAL LAND USE

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Photo No.

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6-19	Looking downstream along Hudson Hope waterfront where several properties could be affected by future shoreline instability and protective works would be required.

SECTION 6.0 - GENERAL LAND USE

6.1 INTRODUCTION

General land use studies have provided an account of land use patterns and management practices in the vicinity of the proposed development. This work was done by Thurber Consultants Ltd. in cooperation with B.C. Hydro Properties Division.

Several government agencies* were contacted during the study for information and opinions. An awareness of local opinions on land use was obtained through information exchange meetings and property surveys. A significant portion of the study was devoted to mapping of present and proposed land uses and gathering information on land status.

The general land use studies also aided in coordination of land use information required for agriculture, forestry, recreation, physical environment and social impact assessments.

6.2 REGIONAL LAND USE

Settlement patterns in the Peace River region are shown on Fig. 6-1 which depicts land alienation prior to and since 1952. By 1952 a marked difference had become established between ownership of land on the north and south banks of the lower Peace River. Except for pockets of private land on the south bank near Hudson Hope, Taylor and the Alberta border, all land was still in Crown ownership in 1952. By contrast all land along the north bank was privately owned except for a few pockets of Crown land near Attachie, Bear Flat and Golata Creek.

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* B.C. Ministry of Environment, Land Management Branch; Ministry of Agriculture; Provincial Agricultural Land Commission; B.C. Ministry of Highways; B.C. Forest Service; and Peace-Liard Regional District.

6.2 REGIONAL LAND USE - (Cont'd)

Since 1952 land alienation has extended northward from the Peace River between Hudson Hope and Wilder (Deep) Creek. Virtually no settlement has taken place on the south bank between Hudson Hope and Taylor. The absence of access to the south side has been an obvious deterrent to its settlement although the wildlife reserve on much of this land may also have been an influence. Downstream of Taylor, land alienation has progressed on both banks except for a portion of the south side upstream of the Kiskatinaw River which remains Crown.

Flood reserves under the Land Act have existed since 1957 throughout the lower Peace River valley. These reserves prevent the purchase of Crown land situated below a specific contour. Since 1963 the flood reserve has been to El. 1525 feet. Land within the flood reserve can be leased for agricultural purposes. A large wildlife reserve exists on the south bank and islands upstream of the Moberly River (see Land Use Map 2 Sheets 1-3). Agricultural development is not encouraged in this reserve although grazing is permitted.

Present land uses along the Peace River still reflect early settlement patterns but future uses will be influenced to a greater extent by regional resource management agencies. Principal of these are the B.C. Land Management Branch, B.C. Forest Service, Provincial Agricultural Land Commission and the Peace-Liard Regional District. However, at present there is no coordinating sub-regional plan to guide land allocation within the lower Peace River valley.

6.3 LOCAL LAND USE

Within the Peace River valley between Site C and Site One, agricultural, wildlife and recreation uses have been favoured by a somewhat more desirable microclimate. Floodplain features, wind protection and a slightly longer frost-free period distinguish the valley from the surrounding plateau.

6.3 LOCAL LAND USE - (Cont'd)

A simplified system of classification of present land use was applied within the direct zone of influence of the proposed Site C development. Symbols and classes used for mapping and property surveys are given below along with their nearest equivalent in the Canada Land Inventory (CLI) system:

	This Study	CLI Symbol
A	Cultivated Agricultural Land	A
G	Grazing and (Improved) Pasture Land	K or P
R	Residential and Related Uses	B
I	Industrial Facilities and Land	B or E
W	Woodland and Undeveloped Wildland	T,U,M or L
	Watercourses and Sand Flats apparent on photomosaic base	X,S
	Recreation Reserves noted on maps	O

Several maps were prepared for use by the study team and formed an integral part of the general land use studies. The maps employ various scales, base plans, overlays and notations to illustrate and record present and proposed land uses. Maps included at the end of this Summary have been reduced to fit a report format and do not show as much detail as the working maps used in the study. Map 1 is a key to the various map sheets.

The study area is divided into land management units which are illustrated on Map 2. Privately managed lands are divided into units varying in size from isolated quarter sections and fractions thereof to a single ranching operation that includes almost all land between the Halfway River and Farrell Creek. Crown management units also vary greatly in size. Land use, management unit size and location are interrelated. Wildlife and grazing units for example, must be sufficiently large to carry expected herds. More intensively managed units, such as those cultivated for crops, derive their usefulness more from high soil/climate capability than overall size.

6.3 LOCAL LAND USE - (Cont'd)

To deal with land use within management units and subdivisions a survey of some 400 parcels was conducted. Parcels were numbered and grouped to show common ownership. Primary present use, acreages affected and potential uses without and with the proposed Site C development were derived for each group. Details of this analysis can be found in the land use sub-report.

6.4 CHANGES IN LOCAL LAND USE

Lands within the direct zone of influence of the Site C development can be grouped into four broad categories:

1. Land flooded by the reservoir (below flood supply level El. 1515 ft) approximately 4600 ha (11,500 ac).

2. Watercourse flooded by the reservoir (below full supply level El. 1515 ft) approximately 4840 ha (12,100 ac).

3. Low bank land unavailable for residential use around the reservoir (between full supply level and safeline) approximately 840 ha (2100 ac).

4. Other land temporarily or permanently altered by heavy construction or other direct effects, approximately 480 ha (1200 ac).

Major changes in the use of land would occur on 5080 ha (12,700 ac [11,500 plus 1200 acres]) due to flooding, heavy construction, clearing and shoreline erosion. An additional 4840 ha (12,100 ac) of watercourse would be altered from a river to a reservoir condition. Approximately 50 percent (2540 ha; 6350 ac) of the land directly affected by the development probably has only grazing potential. Land below the residential safeline on low banks would be restricted to non-residential uses due to the reservoir. High bank areas are presently

unsuitable as building sites and would be restricted to ensure a high level of safety around the reservoir.

Assuming that most of the land within the B.C. Agricultural Land Reserve has potential for arable agriculture, about 2600 ha (6500 ac) of arable land would be removed from the agricultural land inventory by the development.

Filling of the reservoir would necessitate the relocation of about 21.8 km (13.6 mi) of Highway 29 including four existing bridges.

6.5 MITIGATION AND ENHANCEMENT OPPORTUNITIES

Mitigation and enhancement measures could be applied at four levels to moderate land use impacts:

1. Sub-regional planning,
2. multiple use of damsite area,
3. highway planning, and
4. special land uses around reservoir shoreline.

Sub-regional planning would be an effective means of optimizing land uses in the Peace River valley and minimizing adverse impacts due to the Site C development. Land use planning would be desirable whether a hydroelectric development proceeds or not, but a sub-regional plan would be a useful framework within which mitigation proposals could be formulated. A significant part of such a plan would be the delineation of lands that could be included in an "Agricultural Improvement District" within which assistance would be provided to improve farm operations, increase productivity of selected crops and stabilize marketing of local produce.

6.5 MITIGATION AND ENHANCEMENT OPPORTUNITIES - (Cont'd)

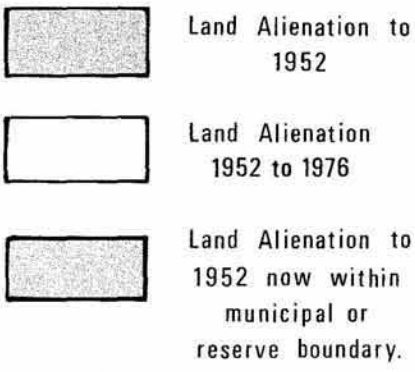
Several possibilities exist to reduce adverse impacts upon special land uses around the future shoreline including: careful delineation of residential safelines; maintaining present uses on leaseback land; replotting parcel boundaries to increase their utility; promoting the use of Farrell Creek community pasture; reservation of potential recreational sites; and designation of suitable land reclamation sites.

Since the Site C damsite would be within easy driving distance of Fort St. John and the Alaska Highway, it is expected to attract local residents and tourists. The site could also offer a new crossing of the Peace River to agricultural and mineral developments to the south. This new link between Fort St. John and Chetwynd would be somewhat shorter than the existing routes via Dawson Creek or Hudson Hope. Multiple use of the damsite area for recreation, agriculture (primarily grazing) and hydroelectric purposes should be assumed in planning layouts and reclamation of construction areas, access routes and viewpoints.

Access would be maintained to residences above the residential safeline. Highway 29 relocations could be designed to enhance scenic qualities. In addition to planned recreational facilities on the reservoir, abandoned portions of the highway could be used to provide access to the water.

Most of these mitigation measures are of an institutional or management nature as opposed to specific capital projects. For this reason specific costs cannot be determined until the magnitude of programs is agreed to by government and private interests. The Peace-Liard Regional District, B.C. Land Management Branch, affected property owners and B.C. Hydro would need to be involved in program planning. One of the first steps would be discussions on preparation of a sub-regional plan for the lower Peace River valley.

KEY

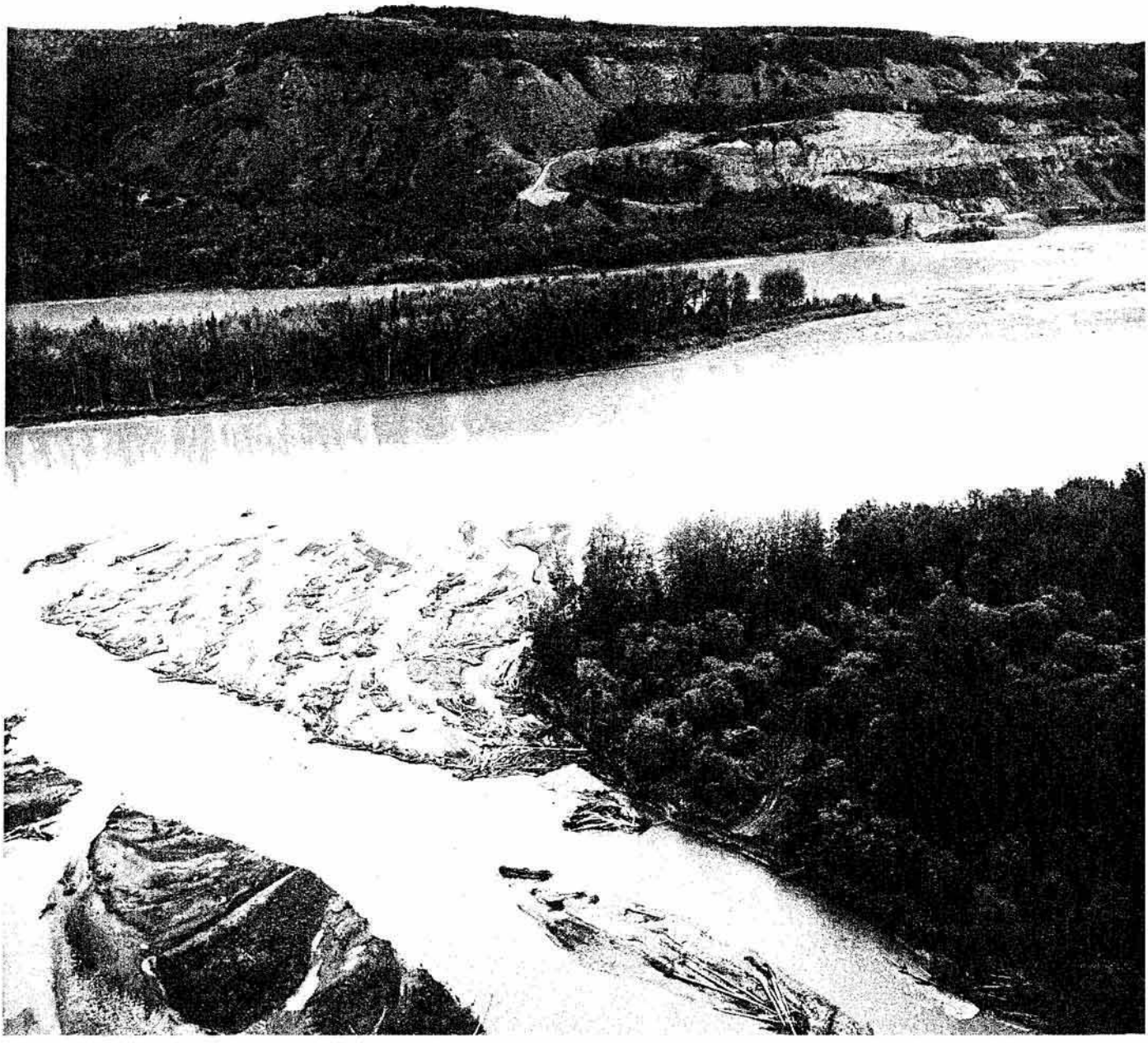


References: – National Topographic Series Map 94A Fort St. John Second Status. Edition 1976.
– B.C. Dept. of Lands and Forests, Peace River Map Pre-Emptor Series Revised to 1952.

LAND ALIENATION PATTERN
IN PEACE RIVER REGION

FIGURE 6-1

PHOTO 6-1 - Looking north from mouth of Moberly River toward parcel 8 just upstream of proposed Site C dam axis, (location of parcels referred to in photo captions is shown on Land Use Map 4).



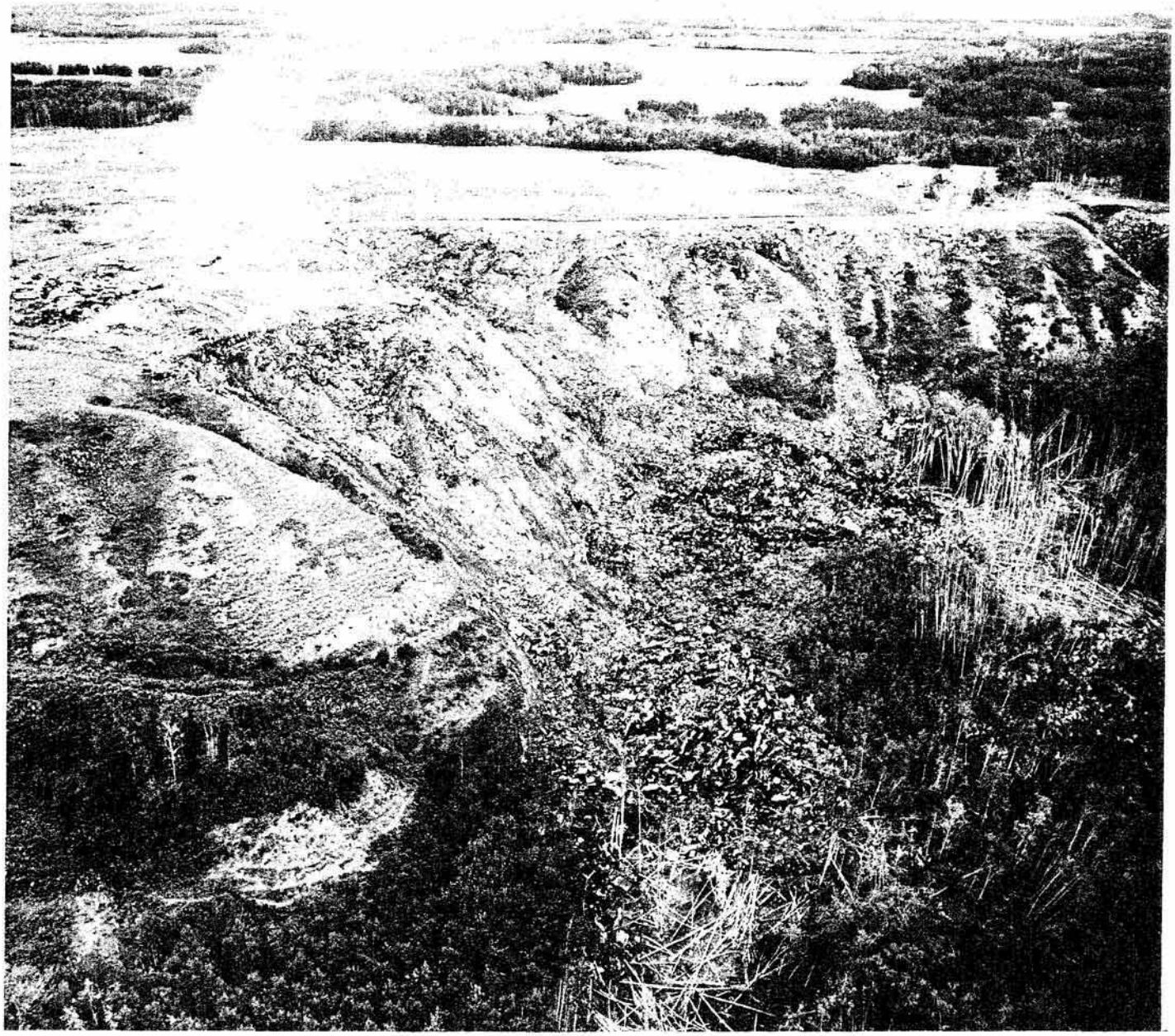
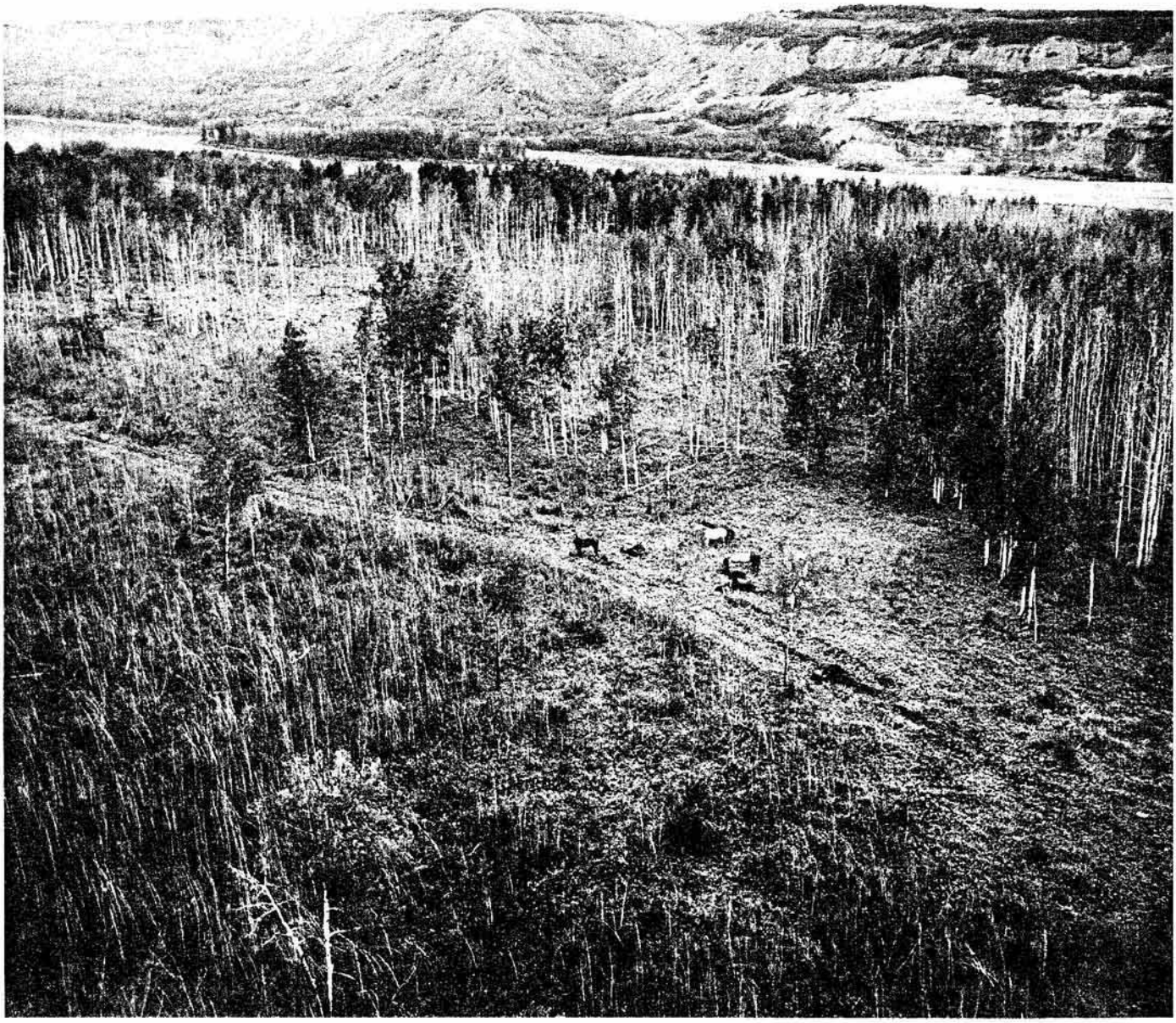


PHOTO 6-2 - City of Fort St. John garbage dump and land site in parcel 9a.

PHOTO 6-3 - Crown land managed under grazing permit on south bank of Peace River in parcel 6a. This area is typical of that which would be used to obtain borrow materials for the proposed dam.



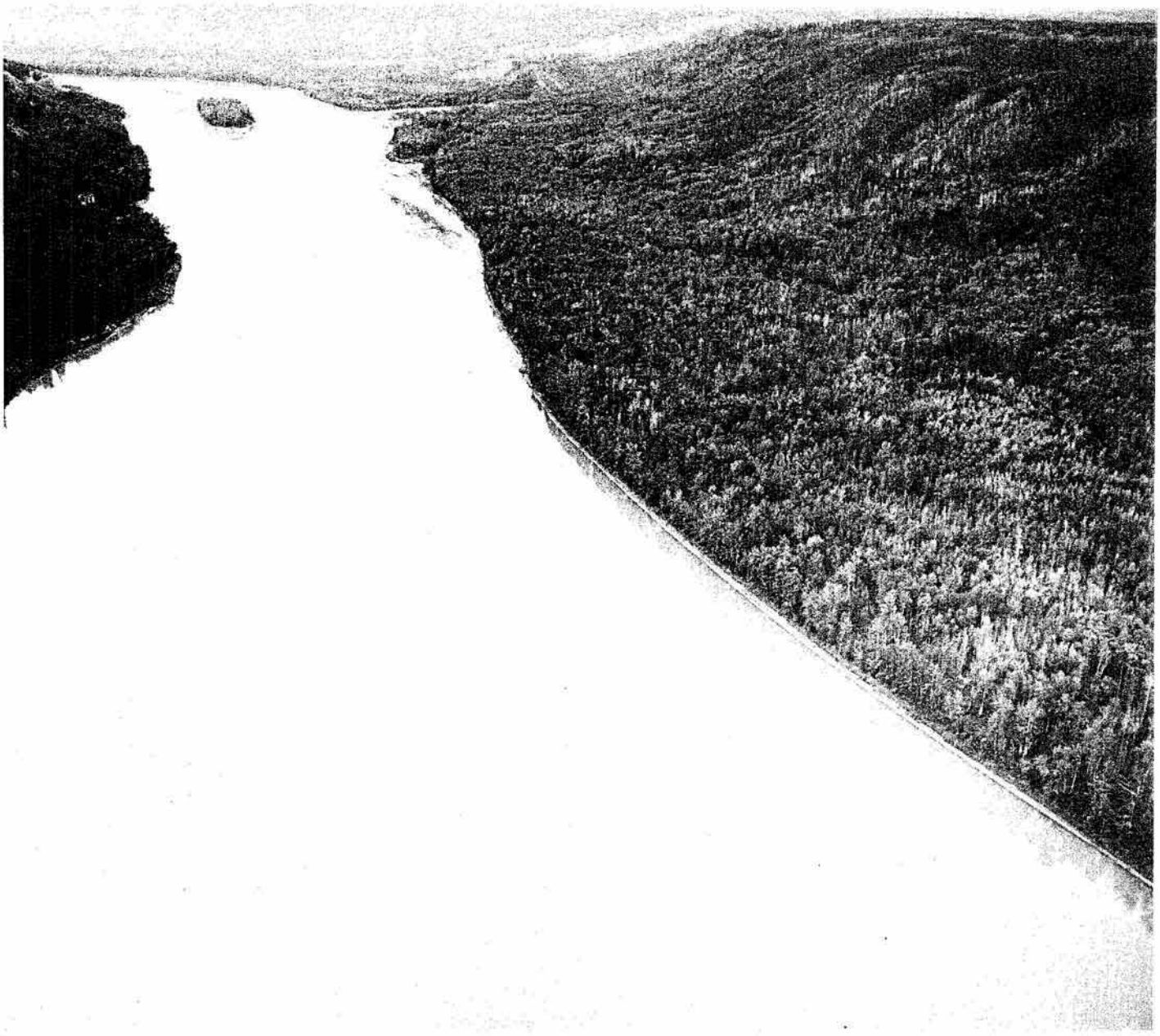
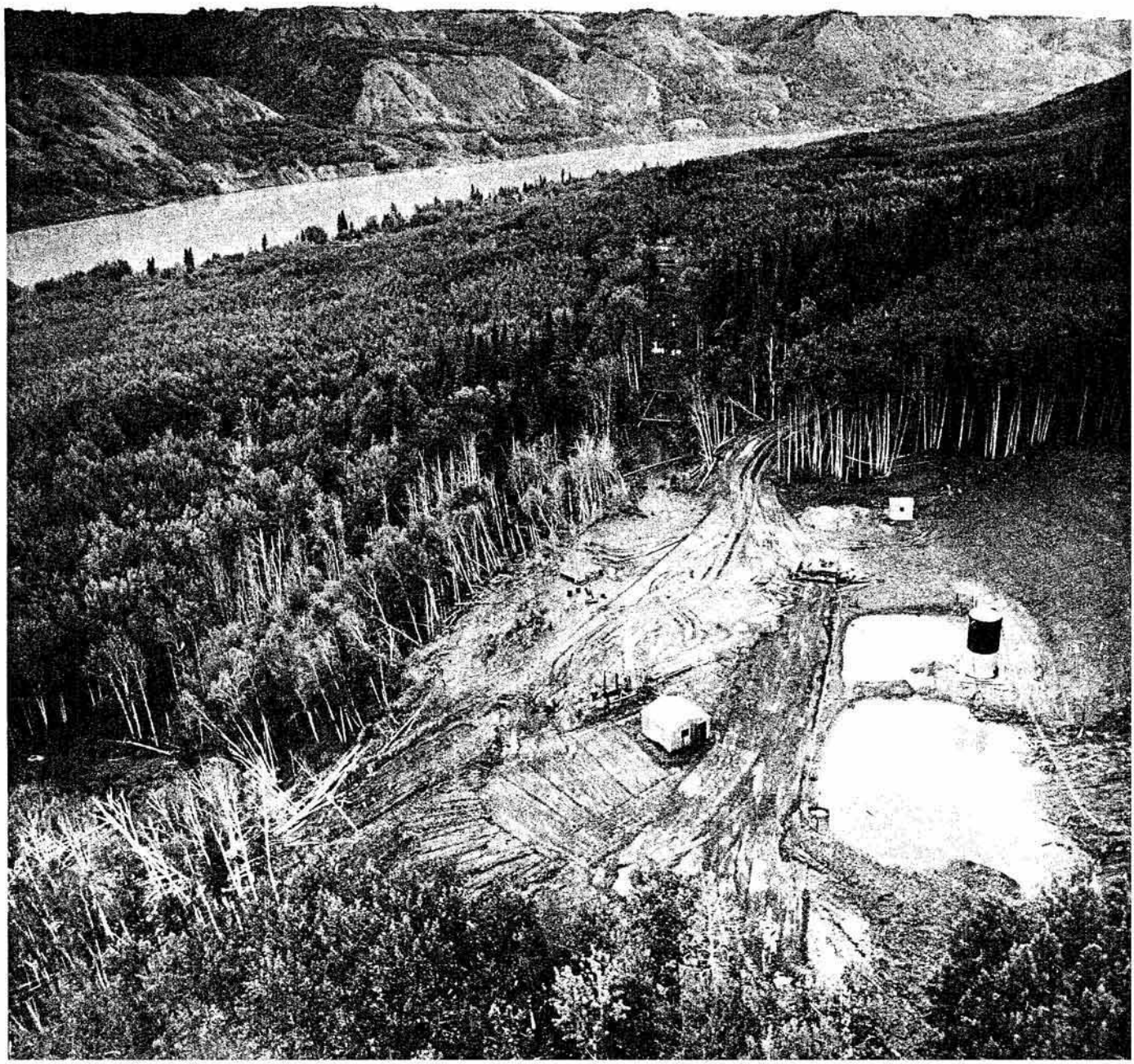


PHOTO 6-4 - Woodland and undeveloped wildland upstream of Site C. Looking downstream toward parcel 12 and mouth of Moberly River.

PHOTO 6-5 - Industrial land use (gas well) on south bank of Peace River opposite parcel 27 could be affected by reservoir.



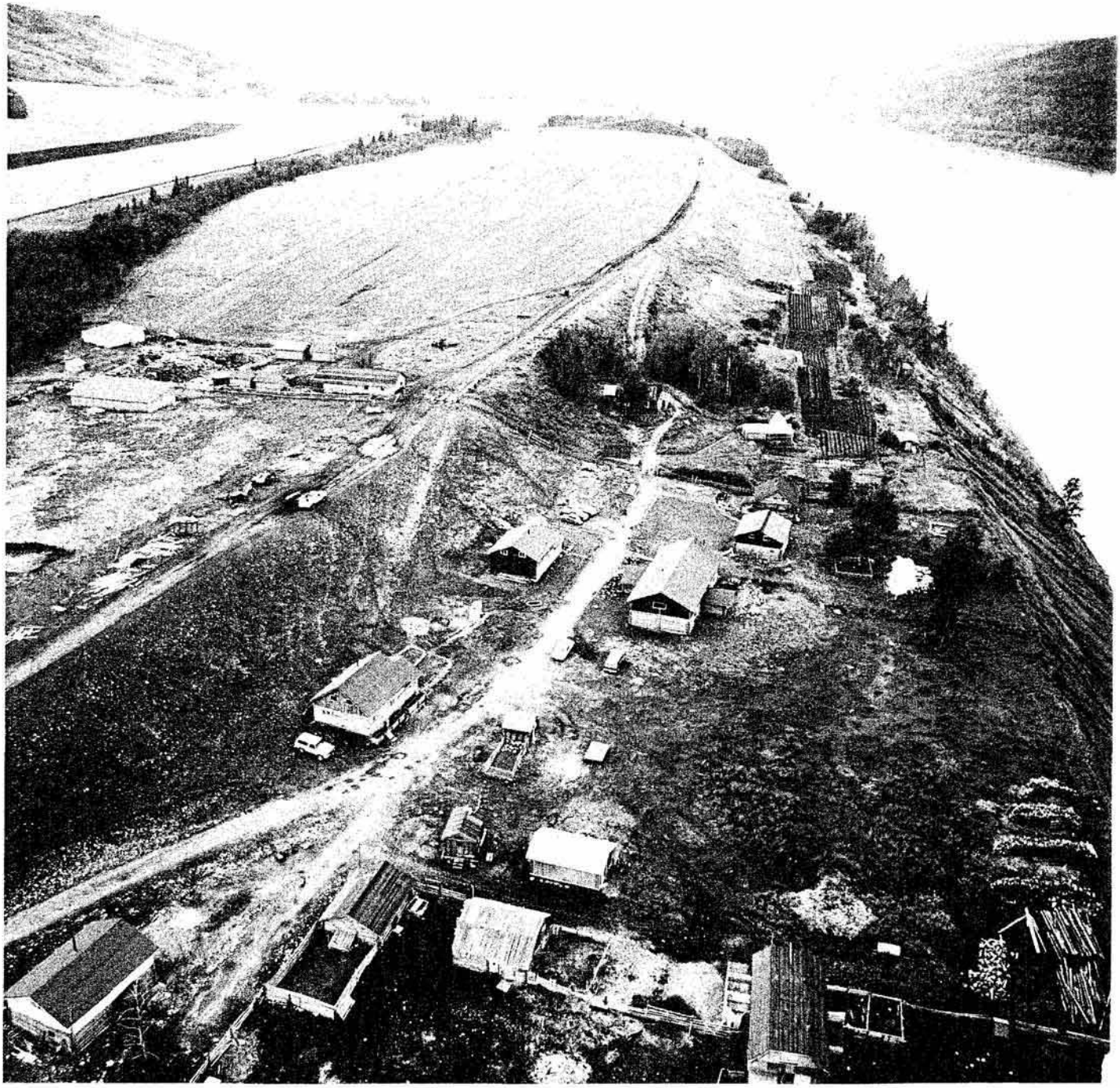


PHOTO 6-6 - Farmstead situation on lower terrace of parcel 57 is below proposed reservoir level.

PHOTO 6-7 - Access road to farmstead in photo 6-6 near parcel 64. This road passes mostly through grazing land and would probably be abandoned in favour of access from the east to the "Jim Rose Prairie" area.

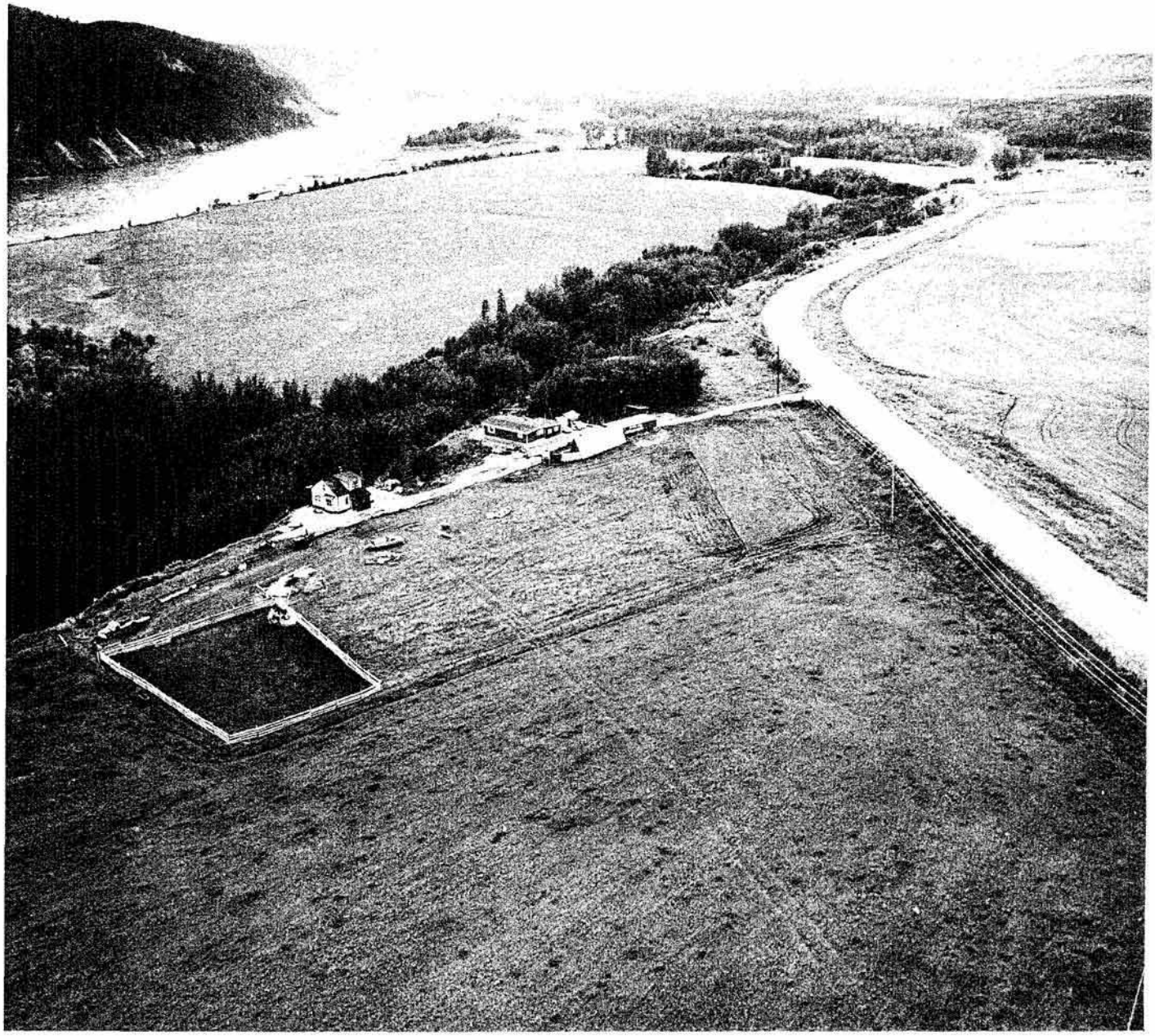
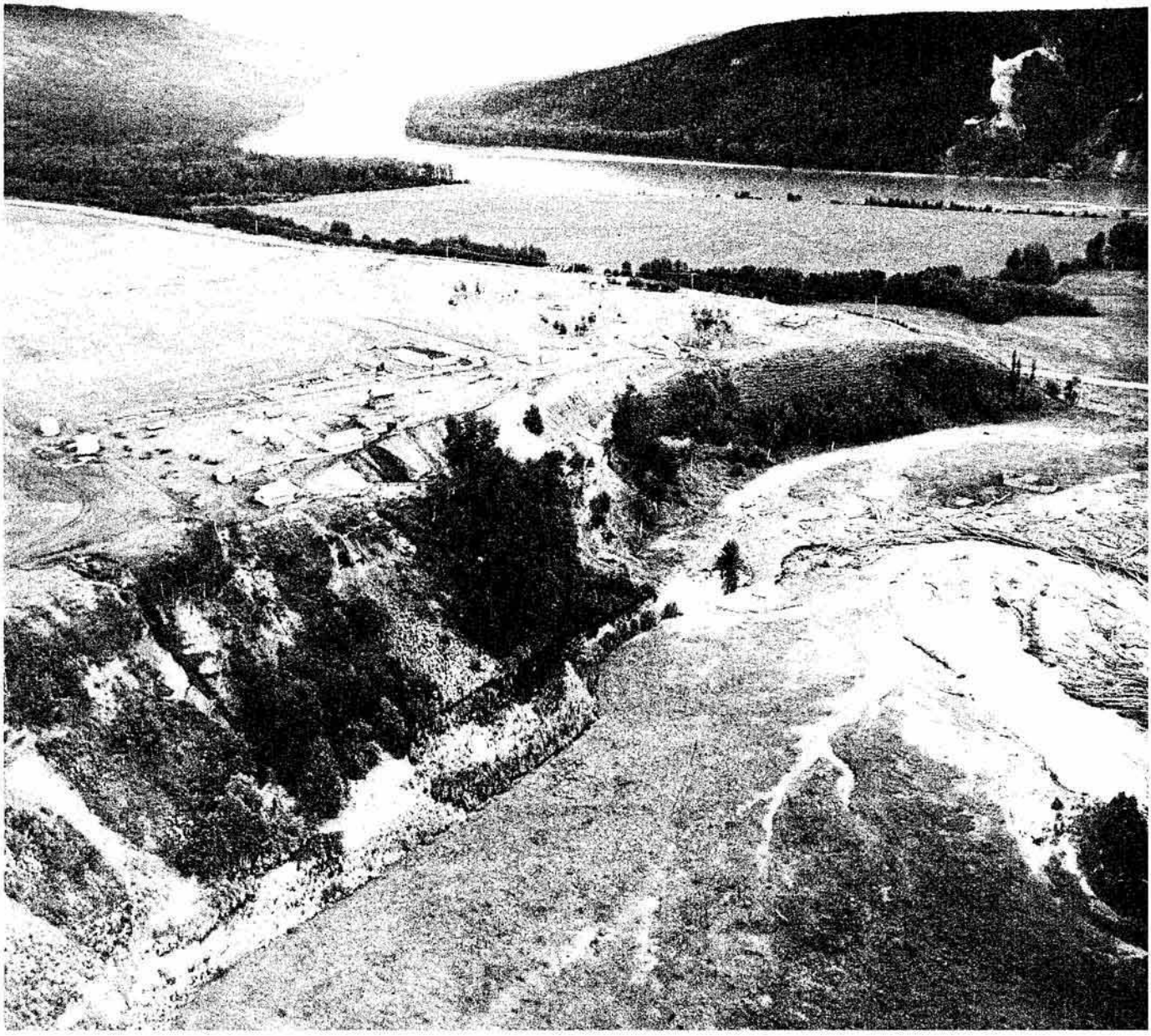


PHOTO 6-8 - Arable land and rural residences on parcel 82a at Bear Flat. Highway 29 would need to be relocated at this point leaving paved secondary access towards the reservoir that could be used for recreational purposes.

PHOTO 6-9 - Looking east across parcel 90 where farmstead buildings are below the safeline along Cache Creek.



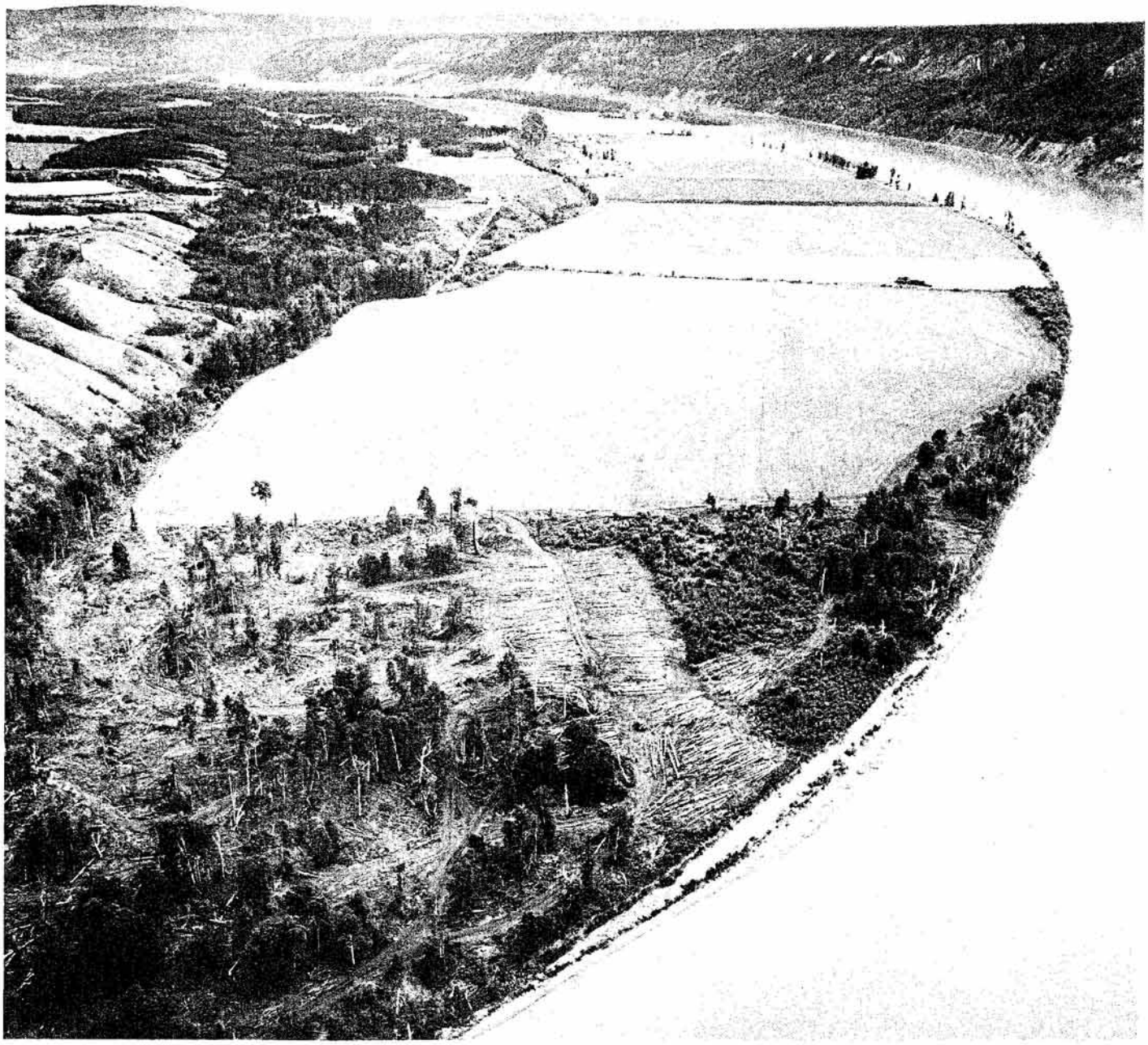
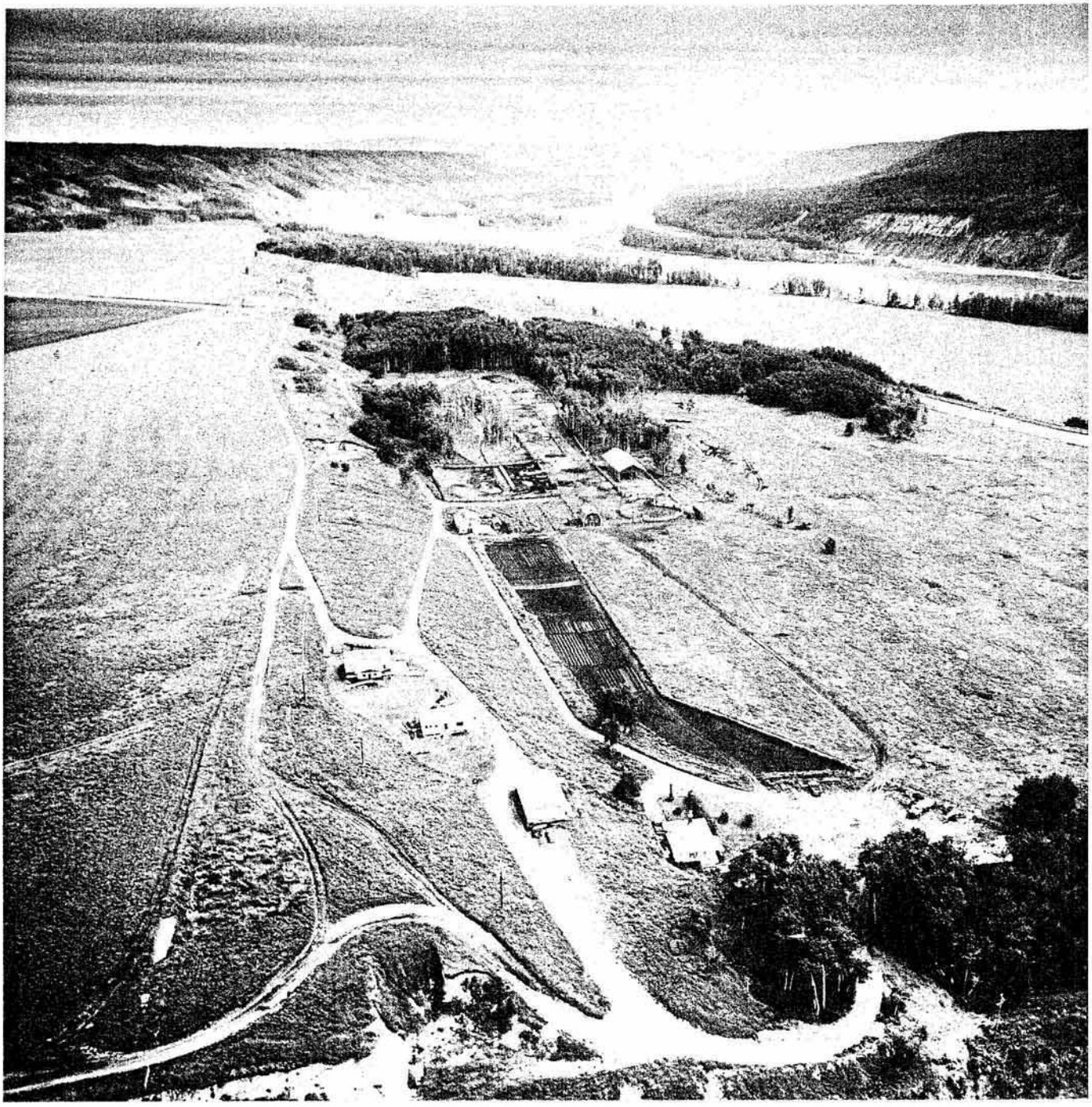


PHOTO 6-10 - High capability agricultural and forest land near parcel 135 that would be flooded.

PHOTO 6-11 - A well established farmstead on parcel 152 that would need to be abandoned due to flooding and highway relocation.



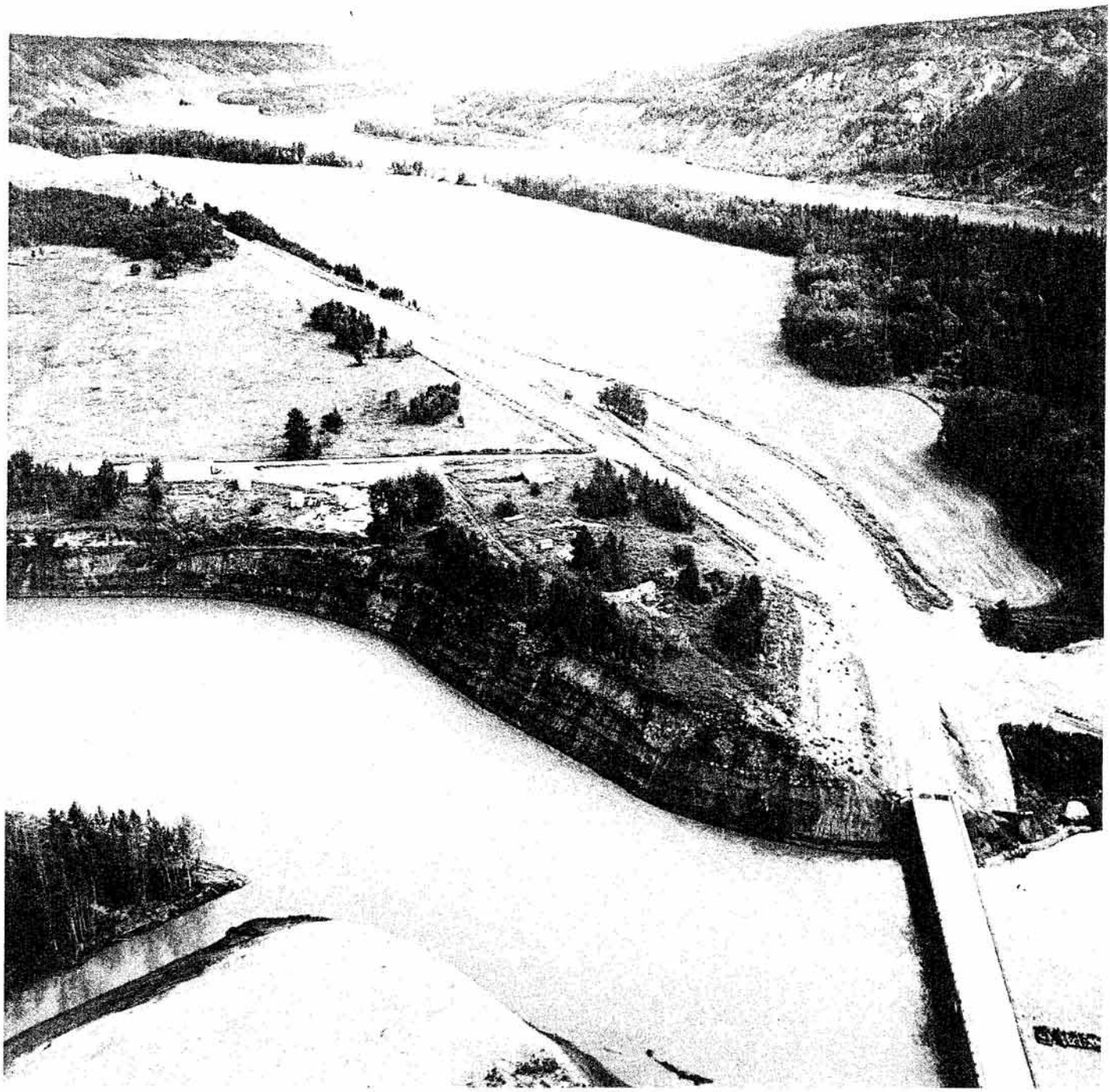


PHOTO 6-12 - Recently completed bridge over Halfway River would need to be relocated farther upstream. All land in the foreground and the islands in the Peace River would be flooded.

PHOTO 6-13 - Farmstead on parcel 222 would be below the residential safeline. Farmland would not be flooded in this locale.

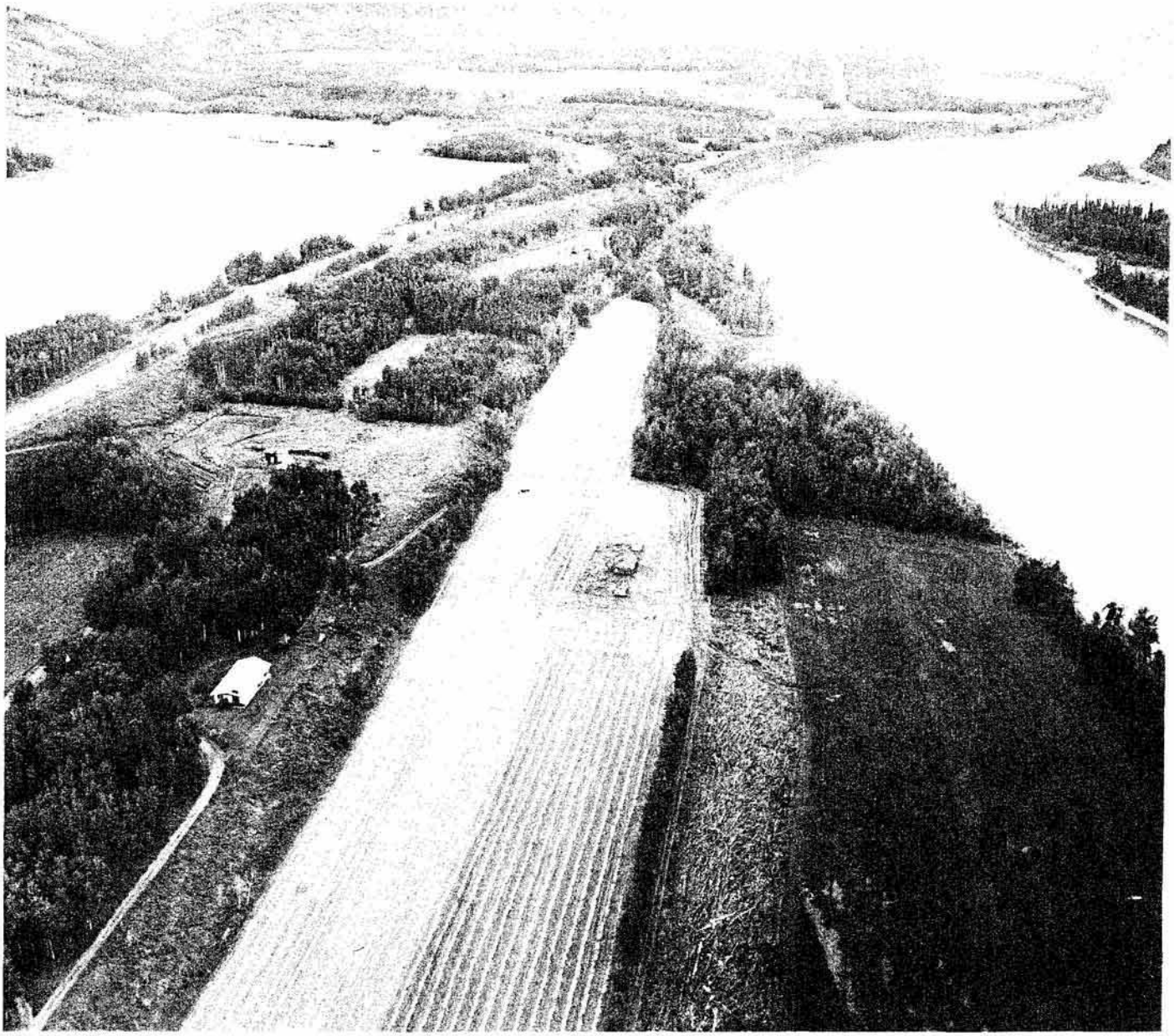


PHOTO 6-14 - Rural residence and farming operations on lower benches near parcel 259. Land in foreground to the right of the highway would be flooded.

PHOTO 6-15 - Looking west across farmstead on parcel 268 that would be mostly flooded. Highway 29 would be relocated to higher ground from this point to west of Lynx Creek.

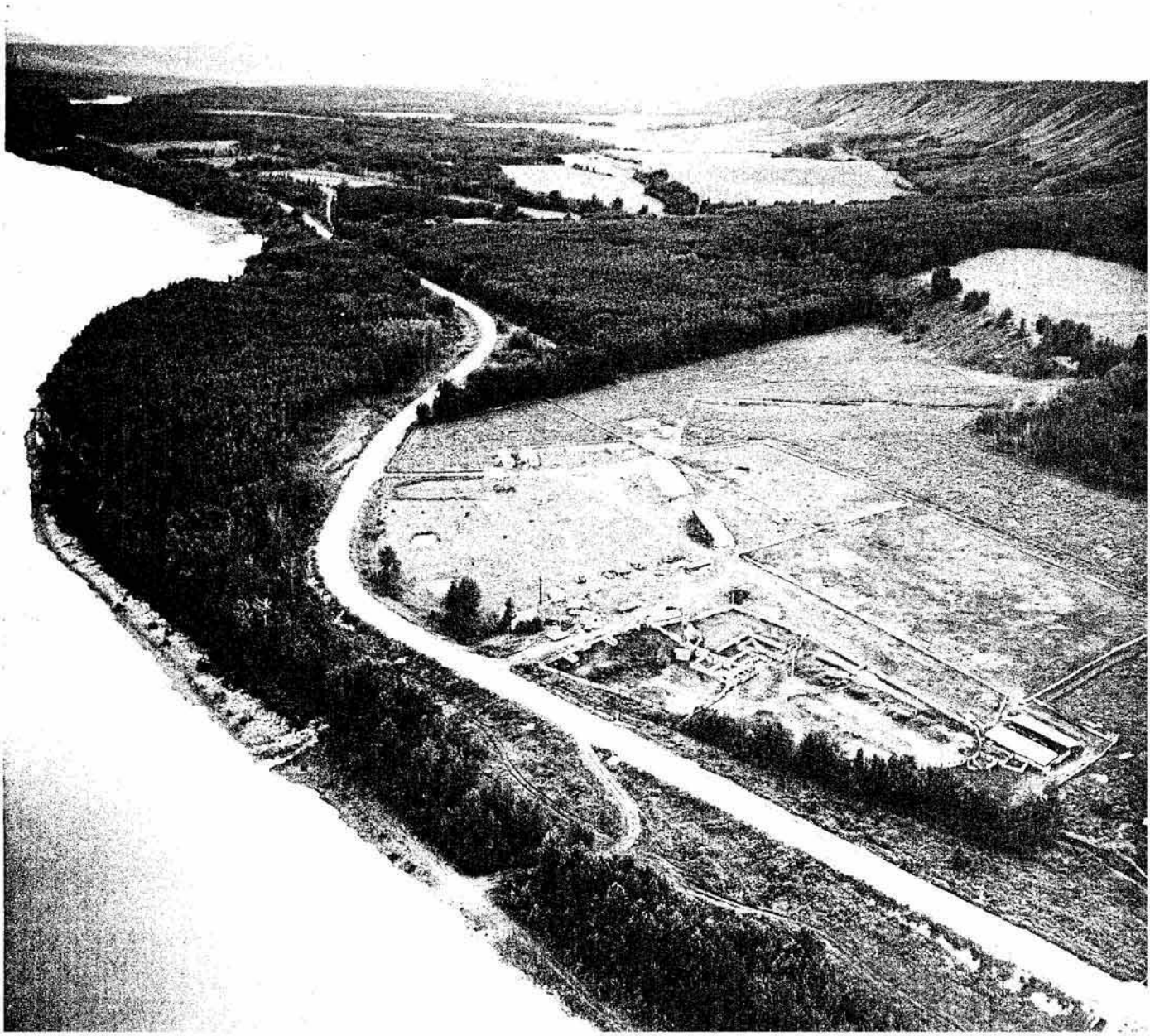


PHOTO 6-16 - Rural residences below proposed reservoir level on parcel 275. Islands in background are known by boaters as the Gates.

PHOTO 6-17 - Lynx Creek subdivision as seen looking south toward floodplain that would be inundated by the proposed reservoir. The relocated Highway 29 bridge over Lynx Creek would be near the centre of the photo.

PHOTO 6-18 - Municipal water supply intake for Hudson Hope shown in this photo would need to be relocated and bank protection works provided.

PHOTO 6-19 - Looking downstream along Hudson Hope waterfront where several properties could be affected by future shoreline instability and protective works would be required.

SECTION 7.0 - AGRICULTURE

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TABLES

SECTION 7.0 - AGRICULTURE

7.1 REGIONAL AGRICULTURAL RESOURCES

On the basis of 1976 Canada statistics the Peace-Liard region has only 13 percent (1625) of the total farming units in the province but these farms contain 43 percent (313,656 ha) of the improved farmland. Farms in the Peace region are principally land based with limited investment in buildings and livestock.

The region contains nearly all (86 percent) of British Columbia's cereal grain and seed crops, a large percentage (28 percent) of forage crops but a small percentage (1 percent) of potatoes, vegetables and small fruits. Livestock in the region include a sizeable percentage (26 percent) of the province's sheep, but cattle (10 percent) and pigs (9 percent) are less abundant.

As shown in Table 7-1 the region contains some 123,400 ha (308,500 ac) of land classed as 1 and 2 in Canada Land Inventory (CLI) system of agricultural land classification. This represents about 27 percent of the high capability (CLI Classes 1 and 2) land in the province. The major farming areas of the region are designated as Class 2 agricultural climate capability. A limited number of areas with a Class 1 climate are also present. The majority of all lands with Class 1 ratings for both land and climate are within the lower Peace River valley.

7.2 LOWER PEACE RIVER VALLEY

Agriculture within the lower Peace River valley is generally similar to that found elsewhere in the region with the exception of recent interest in vegetable production in the valley. Ranching operations benefit from wind protection and spring water available for winter and spring pasture on lower terraces.

TABLE 7-1

ARABLE ACREAGES IN PROVINCE, PEACE RIVER VALLEY
AND SITE C PROJECT AREA

CLI Capability Class	Province[1] (ha)	Province[1] (ac)	Peace River-Liard Region[1] (ha)	Peace River-Liard Region[1] (ac)	Lower Peace River Valley (ha)	Lower Peace River Valley (ac)
1	69 136	172 840	3 789	9 472	2 464	6 161
2	393 069	982 673	119 609	299 023	12 502	31 255
3	988 167	2 470 418	370 246	925 615	1 765	4 412
4	2 107 109	5 267 772	529 335	1 323 338	2 116	5 291

CLI Capability Class	Site C Project (ha)	Site C Project (ac)	Project as a % of Peace River Valley	Project as a % of Peace-Liard Region	Project as a % of Province
1	116	290	5	3.0	0.2
2	2408	6020	19	2.0	0.6
3	542	1355	31	0.1	0.06
4	258	645	12	0.04	0.01

[1] Source: Agriculture Land Capability in British Columbia, B.C. Environment and Land Use Secretariat, September 1976.

7.2 LOWER PEACE RIVER VALLEY - (Cont'd)

The lower Peace River valley contains about 14 970 ha (37,420 ac) of Classes 1 and 2 land which is 12 percent of that in the region. The Site C project area in turn would contain about 2520 ha (6310 ac) of Classes 1 and 2 land which is 17 percent of that in the lower Peace River valley and 2 percent of that in region.

Based upon studies of land that could be used for vegetables, seed crops, grains or improved pasture it is estimated that about 18 percent (6790 ac) of the potential agricultural land in the valley would be lost due to the development. Some 2066 ha (5165 ac) of this land is suitable for vegetables which would represent a loss of 32 percent of this particular type of land in the valley. A further 240 ha (600 ac) of agricultural land may be cut off or rendered uneconomic due to small parcel size or difficult access.

Within the proposed reservoir area there are at present approximately 460 ha (1150 ac) of land in cultivation, 424 ha (1060 ac) in uncultivated forage and grassland and 1652 ha (4130 ac) of potential agriculture land as yet undeveloped.

7.3 MITIGATION OPPORTUNITIES

Amalgamation of small parcels of land created by flooding with adjoining larger agricultural units is suggested. Amalgamation can be done by joint ownership or replotting parcel boundaries. Local improvements in agricultural land capability could also be effected by land reclamation using topsoil from below the FSL.

Any assistance that can be provided to encourage the development of vegetable processing and marketing facilities would help to

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* This return to land is theoretically the amount of money a producer would pay to rent the land. However, actual practice indicates that rents are considerably lower than these values, which reflects the uncertainty that always exists in the viability of a given operation.

7.3 MITIGATION OPPORTUNITIES - (Cont'd)

offset uncertainties about the future of the vegetable industry in the valley.

7.4 PRELIMINARY RESULTS OF VEGETABLE MARKET STUDY

As pointed out in Section 1.2, following the review of the consultant's draft report by the government agencies, the Department of Agriculture and the Agricultural Land Commission requested more detailed information on the potential for a vegetable market based on the Peace River valley agriculture, and whether the Peace Site C project would affect the viability of such a vegetable industry. This study was undertaken and is now nearing completion. The preliminary results are as follows.

Approximately 16,000 acres (6400 ha) of land with potential for vegetable production would still be available in the lower Peace River valley if Site C were built. The land required to support a medium sized vegetable processing plant which could supply markets throughout northern B.C. and the Yukon is estimated to be approximately 5500 acres (2200 ha), and this could easily be accommodated within the remaining potential vegetable land base. The question which therefore remains is whether a processing plant itself could be economically viable.

One of the criteria for food processing plants is that they have to operate on a year round basis to cover overheads during the off-peak season. The longer the growing season for the main products the better, as it minimizes the length of the off-peak season. During this winter and spring period, the processing plants typically process either vegetables which can be stored long term such as potatoes, carrots, etc. or else other products which are shipped in as concentrates, like fruit juices, processed, then shipped out again to the markets. Spaghetti and pastas may also be canned during this period.

7.4 PRELIMINARY RESULTS OF VEGETABLE MARKET STUDY - (Cont'd)

Because of transportation costs, food processing plants should be as close as possible to the source of supplies, including the off-season supplies, and also as close as possible to the market.

The length of growing season in the Peace River valley, although suitable for the production of a range of processing vegetable crops, is much shorter than the growing season further south, and therefore would restrict the length of time that a Peace River plant could process field grown products compared to lower mainland plants. It would have to rely more heavily on processing the stored vegetables, such as potatoes, carrots, etc., which are sold on an extremely competitive market.

An examination of transportation costs for processed vegetables indicates that despite the fact that a Peace River plant would be located geographically closer to northern markets, the lower mainland plants might well be able to supply the northern market with lower freight costs because of the availability of low-cost water transport and also the opportunity to ship full truck loads from the lower mainland using non-vegetable products to make up the balance of the load.

In conclusion, construction of the Site C project would not preclude the development of a vegetable processing plant to serve northern markets; however, the economic viability of a processing plant in this location is seriously in question when compared to plants located in the lower mainland.