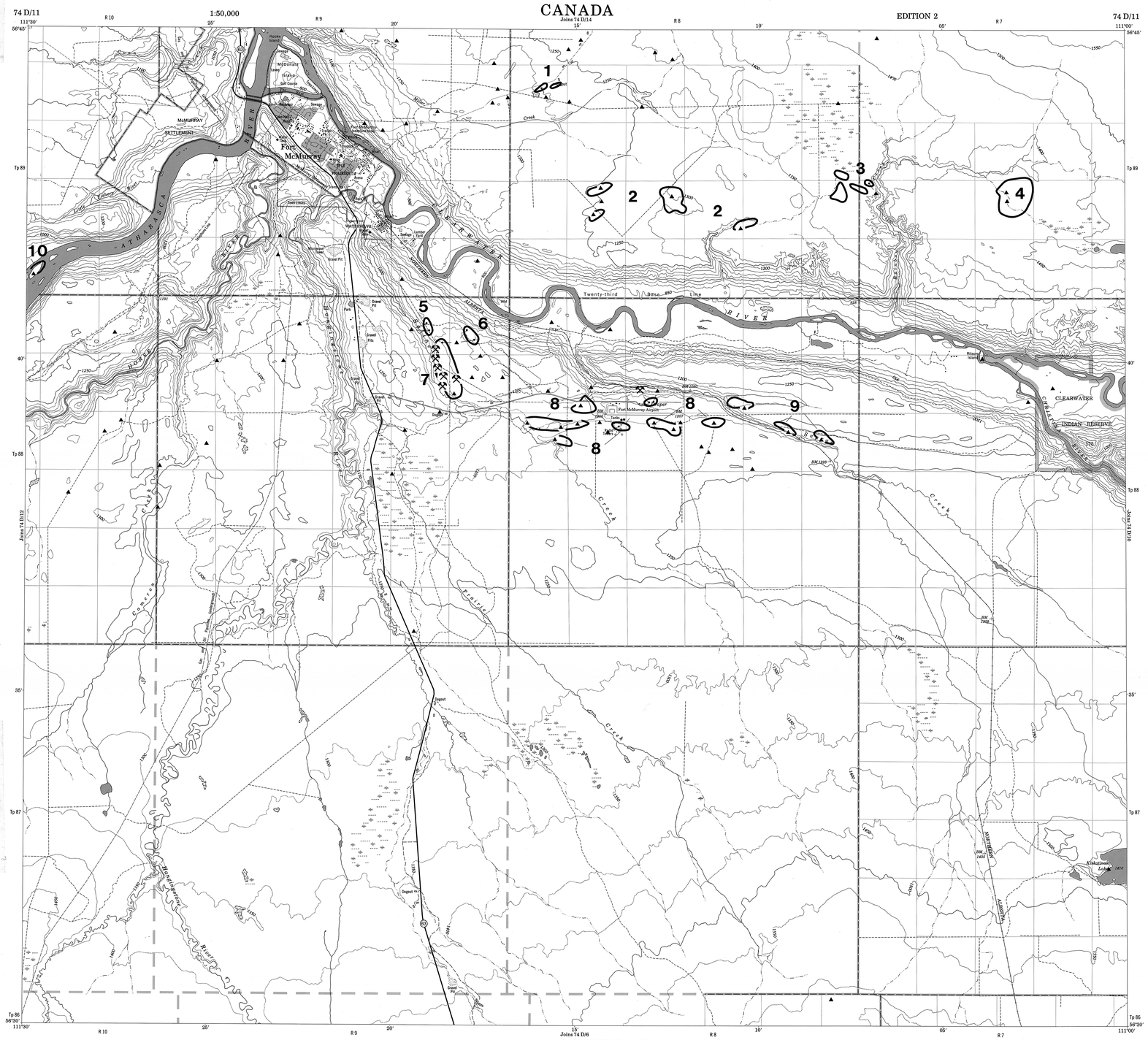
74D/11 Fort McMurray



FORT McMURRAY

ALBERTA

WEST OF FOURTH MERIDIAN – OUEST DU QUATRIÈME MÉRIDIEN

Scale 1:50,000 Échelle

Miles 1 0 1 2 3 Milles

Metres 1000 0 1000 2000 3000 4000 Mètres

Yards 1000 0 1000 2000 3000 4000 Verges

Produced, 1970, by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES. Updated from aerial photographs taken in 1967. Culture check 1976. Printed 1973.

Copies may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, or your nearest map dealer.

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Roads:	Routes:	dual highway 2 chaussées séparées	more than 2 lanes plus 2+2 revs
hard surface, all weather	pavée, toute saison	2 lanes or more 2 voies ou plus	less than 2 lanes moins de 2 voies
hard surface, all weather	pavée, toute saison	2 lanes or more 2 voies ou plus	less than 2 lanes moins de 2 voies
loose or stabilized surface, all weather	gravier aggloméré, toute saison	2 lanes or more 2 voies ou plus	less than 2 lanes moins de 2 voies
loose surface, dry weather and unclassified streets	de gravier, temps sec et rues hors classe		
cart track	de terre		
trail or cut line	sentier ou percée		

Communities within cities and towns are named in red.

This Provisional Map is equivalent to a standard map in accuracy of content.

Some names on this map are not yet official. Corrections or additions are invited by the Surveys and Mapping Branch.

CONTOUR INTERVAL 50 FEET
Elevations in Feet above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection

Les communautés à l'intérieur des cités et villes sont désignées en rouge.

Cette carte provisoire équivaut une carte régulière au point de vue précisions de l'information.

Certains noms inscrits sur cette carte ne sont pas encore officiels. La Direction des levés et de la cartographie saurait gré au public de lui signaler corrections et additions.

ÉQUIDISTANCE DES COURBES 50 PIEDS
Élévations en pieds au-dessus du niveau moyen de la mer
Système de référence géodésique nord-américain, 1927
Projection transverse de Mercator

Établie en 1970, par la DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES. Mise à jour à l'aide de photographies aériennes prises en 1967. Vérification des ouvrages en 1976. Imprimée en 1973.

Ces cartes sont en vente au Bureau des Cartes du Canada, ministère de l'Énergie, des Mines et des Ressources, Ottawa, ou chez le vendeur le plus près.

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GENERAL COMMENTS

DEPOSIT CHARACTERISTICS

Deposit Number	Material Description	Reserves (1000 m³) Gravel	Reserves (1000 m³) Sand	Additional Comments	Texture (%) Gravel	Texture (%) Sand	Texture (%) Fines	(%) Wear	Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments
1	Clean sand			Fine to medium grained.		100			0		9	Outwash	
2	Clean sand			Fine to medium grained.		100			0		74	Outwash	
3	Clean sand			Fine to medium grained.		100			0		31	Outwash	
4	Clean sand			Fine grained.		100			0		88	Outwash	
5	Sand			Medium grained. Scattered cobbles and pebbles.	trace	100			0		10	Meltwater channel	
6	Clean sand			Fine to medium grained. Scattered cobbles.	trace	100			0		14	Meltwater channel	
7	Gravelly sand	451	2558	Dirty, fine grained.					1-3	3.5	86	Meltwater channel	
8	Dirty sand	100	1909	Clasts less than 5%.	1-5	95	1-5		0.5	1.5	134	Meltwater channel	
9	Clean sand		600	Fine to medium grained.		100			0	1.5	40	Meltwater channel	
10	Sandy gravel			Recent river bar						2	10	River bar	

Deposit Number — Granular deposits shown on this map may have commercial possibilities. That assumption followed from two criteria used in the mapping process: study of the area considered only granular deposits greater than one metre thick, and covering an area more than one hectare; and it only considered deposits where the mineral-aggregate thickness was greater than the overburden thickness. Although the scale of mapping did not permit investigation of all small deposits, many small deposits containing existing pits are indicated.

Material Description — Sand and gravel has a variety of applications, such as concrete for construction, asphalt concrete, subbase and base course aggregate for roads, gravel and sand for road surfaces, and pit run for fill. Gradation, rock hardness, and binding characteristics, are some of the specific qualities that are considered in aggregate towards determining its end use. This map indicates these, and other, geological qualities of the sand and gravel within each deposit, but does not indicate their potential uses. The terms used in the table are defined in the figure below.

Reserves — The method of calculating in cubic metres the aggregate reserves of deposits took four basic steps. First, the area, in hectares, of each deposit was determined using aerial photographs. Second, geological interpretation, sometimes supported by subsurface information, was assumed in determining the geometry of each deposit, to estimate an overall, average deposit thickness in metres. Third, geological study and limited sample analyses determined the texture (gradation) of sediments in the deposit, and an overall average percentage of gravel and sand. Finally, the volume was calculated as follows: reserve gravel (m^3) = area (ha) × thickness (m) × 10,000 × % gravel; the same formula was used for sand.

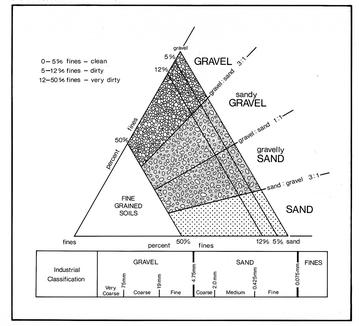
Texture — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular deposit were determined from a field estimate, or from laboratory analysis, of one or more samples from that deposit. Where more than one sample is taken the tabulated number is the mean value.

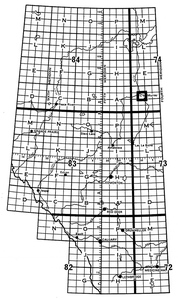
Wear — The resistance of gravel-size clasts to wear or abrasion can be measured in a laboratory test (ASTM-C131, Los Angeles Abrasion Testing). The amount of material that breaks down into smaller sizes is measured and related to the original sample weight in terms of percent wear. The higher the percentage wear the more susceptible the gravel is to breakdown under stress. Gravel with a percentage wear of less than 40 is considered very resistant.

Overburden Thickness — The thickness of non-economic material, or overburden, covering a deposit, sometimes is a limiting factor in the exploitation of an aggregate deposit. The tabulated values given are approximate overburden thicknesses as determined from geological investigations and subsurface testing.

Deposit Area — Deposits in this study were delineated by interpretation of aerial photographs and the contacts should be considered approximate. Information is precise only where test holes, or geological sections, are indicated.

Deposit Genesis — The genesis, or formation, of deposits is vital to the understanding of the gradational nature, extent and geometry of the deposit. This understanding forms the basis for extrapolation from a limited number of known points (test holes, pits, sections) and permits an overall assessment of the deposit.





Map Legend

- 3 Deposit number
- Assumed boundary
- Active or inactive pit
- Sample and/or description site

Aggregate Resources

74D/11 Fort McMurray

D.W. Scafe, W.A.D. Edwards, D.R. Boisvert

Published 1988
Geology and compilation 1987-88
To accompany Open File Report 1988-16 as Figure 4.

This is a sand and gravel resource map prepared by the Alberta Geological Survey as part of a series at a scale of 1:50,000 for the Aggregate Resources Inventory of Alberta which provides data for general land-use planning, land management or aggregate exploration. Please note that the delineation of deposits and calculation of reserves are approximations only. Alberta Energy and Natural Resources provides financial support for the Aggregate Inventory.

Cartography by Alberta Research Council, Graphic Services, J.K. Matthie.

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Natural Resources Division
Alberta Geological Survey

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