

GENERAL COMMENTS

Deposit Number	Material Description	Reserves (1000 m³)	Additional Comments	Texture (%)			Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments
				Gravel	Sand	Fines					
1	Sand and gravel	-	Low terraces of the McKay River. Gravels - mainly incompetent local sandstone, some competent sandstone and shield rocks.	-	-	-	1.0-2.0	1.0-3.0	444	Fluvial	Overburden - silt and fine sand. Good potential for aggregate.
2	?	-	Low terraces of the McKay River. Possibility of some sand and gravel.	-	-	-	-	-	84	Fluvial	Terraces appear to be bedrock. Poor potential for sand and gravel.
3	Sand	-	Clean to dirty.	-	-	-	0.5	1.0-3.0	60	Glaciofluvial	Good potential for sand. Gravels and reported in a few test holes.
4	Gravelly sand to sand	-	Glacial lake beaches. Grain size is variable.	-	-	-	0.5	2.0 (one site)	-	Glaciofluvial	Poor economic potential for exploitation.
5	Sandy gravel	-	Test pitting by Alberta Forest Services indicated sandy gravel.	-	-	-	-	2.0+	62	Glaciofluvial	Good potential for sand and gravel.
6	Sandy gravel to sand	-	South end (new pit) - sandy gravel to gravelly sand to gravel.	63	35	2	0.5	1.0-2.0	445	Glaciofluvial	Little information available on the central portion of the deposit. Further testing needed to adequately define the resource.
7	Sandy gravel to sand	-	Poplar Creek pit. Largely depleted. Mainly sandy gravel to gravelly sand.	72	26	2	1.0	2.0-4.0	72	Glaciofluvial	Large pit area.
8	Sandy gravel to gravelly sand	-	Poplar Creek pit. Largely depleted.	73	24	3	0.5	1.0-4.0	260	Glaciofluvial	Large pit area.
9	Sand	-	-	30	65	5	-	-	Pit 16	Glaciofluvial	Untested.
10	Sand and gravel	-	Potential for sand and gravel.	-	-	-	-	-	80	Glaciofluvial	Not field checked.
11	Sand and gravel	-	Potential for sand and gravel.	-	-	-	-	-	55	Glaciofluvial	Not field checked.
12	Sand and gravel	-	Mainly sand with less than 10% gravel.	-	-	-	-	-	2	Glaciofluvial	Not field checked.
13	Sand and gravel	-	Potential deposit.	-	-	-	-	-	378	Glaciofluvial	Deposit tested in the past, but information not on file.
				-	-	-	-	-	10	Glaciofluvial	Not field checked.

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 (m³) = area (ha) × thickness (m) × 10,000 × % gravel; the same formula was used for sand.

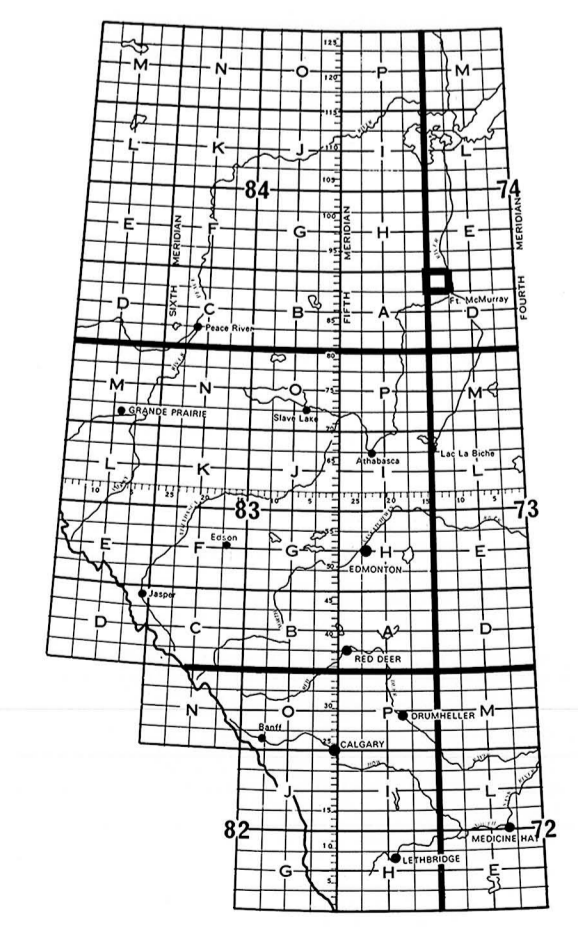
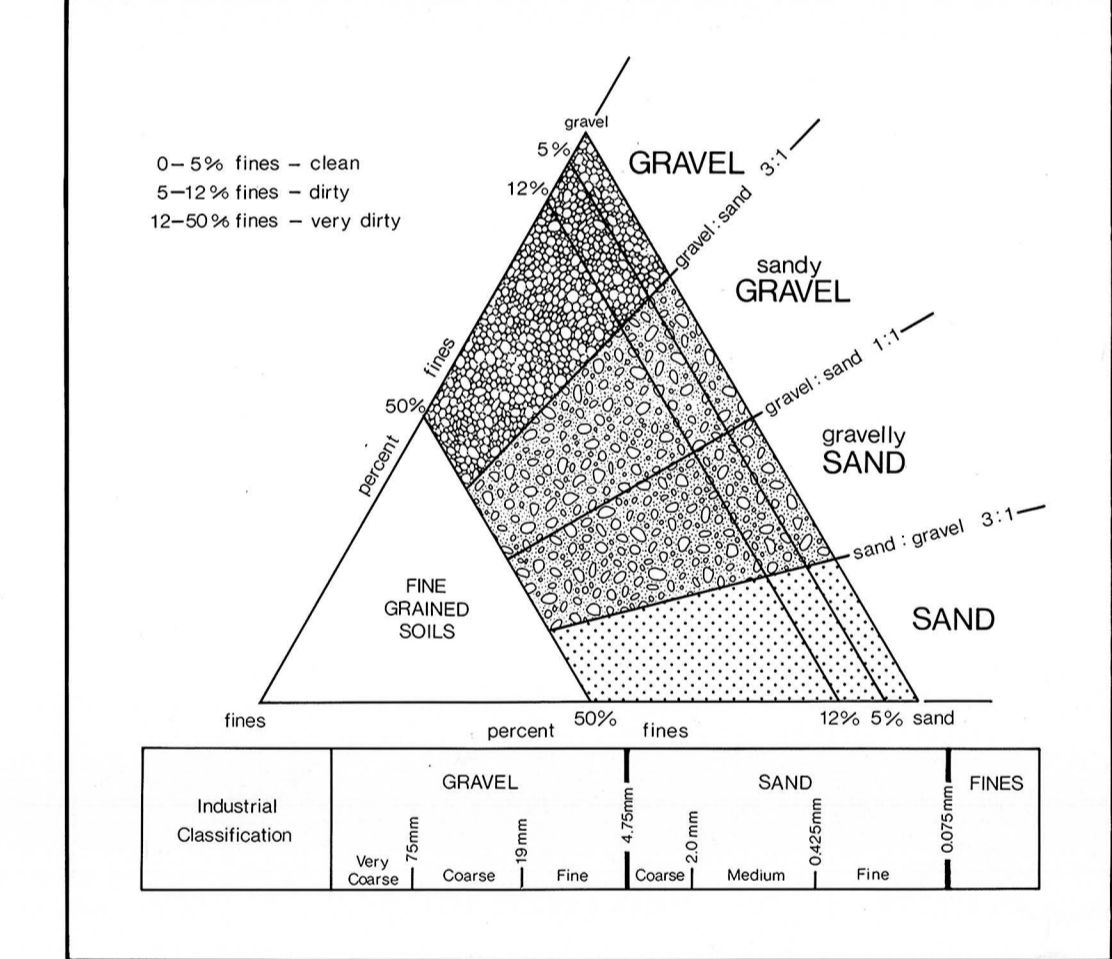
Texture — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular deposit 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
- Alberta Geological Survey test hole
- ▲ Sand or gravel exposure
- /// Buried sand or Gravel deposit

Aggregate Resources

74D/13 Ruth Lake
J.C. Fox
Published 1986
Geology and compilation 1985
Additional information from L.A. Bayrock and T.H.F. Reimchen, 1973
and Alberta Oil Sands Environmental Research Program, 1978
Open file report 1986-09
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. The series represents an ongoing aggregate 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 Resource Council, Graphic Services, J.K. Mathe.



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Copies may be obtained from the Canada Map Office, Department of Energy and Natural Resources, Ottawa or from nearest Map Store.
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For complete reference see REFERENCE. FROM THE LITHO CONTACTS OF SHEETS 74D/13 AND 74D/14.

RUTH LAKE IMPROVEMENT DISTRICT 18 ALBERTA WEST OF FOURTH MERIDIAN - OUEST DU QUATRIEME MERIDIEN Scale 1:50,000 Echelle

Information concerning location and precise elevation of bench marks can be obtained by writing to the Geodetic Survey, Survey and Mapping Branch, Ottawa.
Do not observe the arrangements on the line of the litho contacts of the deposits of gravel and sand in the Ruth Lake area. Direction of flow of the Poplar Creek, Ottawa.
Echelle de conversion des élévations: Mètres 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720 740 760 780 800 820 840 860 880 900 920 940 960 980 1000 Pieds
Elevations in Feet above Mean Sea Level: North American Datum 1927
Projections: Westcoast Projection.

CONVERSION SCALE FOR ELEVATIONS
Mètres 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720 740 760 780 800 820 840 860 880 900 920 940 960 980 1000 Pieds
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Scale 1:50,000 Echelle
Mètres 0 1000 2000 3000 4000 Mètres
Yards 1000 0 1000 2000 3000 4000 Yards

74D/13 CFR 1986-9