

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		Gravel	Sand	Fines					
1	Sandy gravel	1296	475	Gravel coarse; sand fine grained.	72.0	26.4	1.6	-	2.1	170	Recent alluvial	Deposit continues on NTS 82H/6.
2	Sandy gravel	636	366	Gravel coarse and fine; sand medium grained.	61.8	24.0	0.8	0 to 0.5	1.5 to 2.1	60	Valley train	Deposit continues on NTS 82H/6.
3	Sandy gravel	600	370	Gravel coarse and fine; sand coarse and medium grained, clean.	60	37	3	-	1.2 to 2.7	120	Valley train	
4	Sandy gravel and gravelly sand	497	342	0 to 3 m Gravel fine with some coarse; sand coarse and medium grained; 3 to 5.5 m Sand medium grained; gravel fine and coarse.	69.3	29.9	0.8	0 to 1.5	4.6 to 5.5	38	Kame	
5	Sandy gravel	33	22	Gravel fine with lenses of coarse; sand fine to coarse grained.	60	39	1	-	2.1	5	Kame	
6	Sandy gravel	444	284	Gravel coarse and fine; sand fine to coarse grained, clean and moderately clean.	41.7	22.9	0.3	0 to 2	2.7 to 3.7	35	Kame	
7	Sandy gravel	172	153	Gravel coarse and fine; sand coarse, clean.	52.1	46.4	1.5	-	2.1 to 4.2	15	Kame	
8	Sandy gravel	20	15	Gravel coarse; sand fine and medium grained.	55.8	43.3	0.9	-	1.2	6	Kame	
9	Sandy gravel	96	33	Gravel coarse with some fine; sand coarse and medium grained, clean.	74.1	25.5	0.4	-	3 to 5	7	Kame	
10	Sandy gravel	188	110	Gravel fine with some coarse; sand coarse and medium grained, clean.	62.8	36.8	0.4	-	4.8 to 9.0	10	Kame	
11	Sandy gravel	195	90	Gravel coarse; sand fine to coarse grained.	65	30	5	0.5	1.5	42	Recent alluvial	
12	Sandy gravel	195	105	Gravel coarse and fine; sand medium grained, clean.	65	35	-	-	3	20	Kame	
13	Sandy gravel	24	16	Gravel coarse and fine; sand fine to coarse grained, clean.	60	40	0	-	1.8	5	Kame	
14	Gravelly sand	14	22	Sand fine and medium grained, moderately clean; gravel coarse and fine.	35	55	10	-	1.5 to 2.4	4	Kame	
15	-	-	-	Assumed on basis of surface mapping or airphoto interpretation.	-	-	-	-	-	-	Recent alluvial	
16	-	-	-	Assumed on basis of surface mapping or airphoto interpretation.	-	-	-	-	-	-	Kame	

DEPOSIT CHARACTERISTICS

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 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 bedding 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 analysis 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.

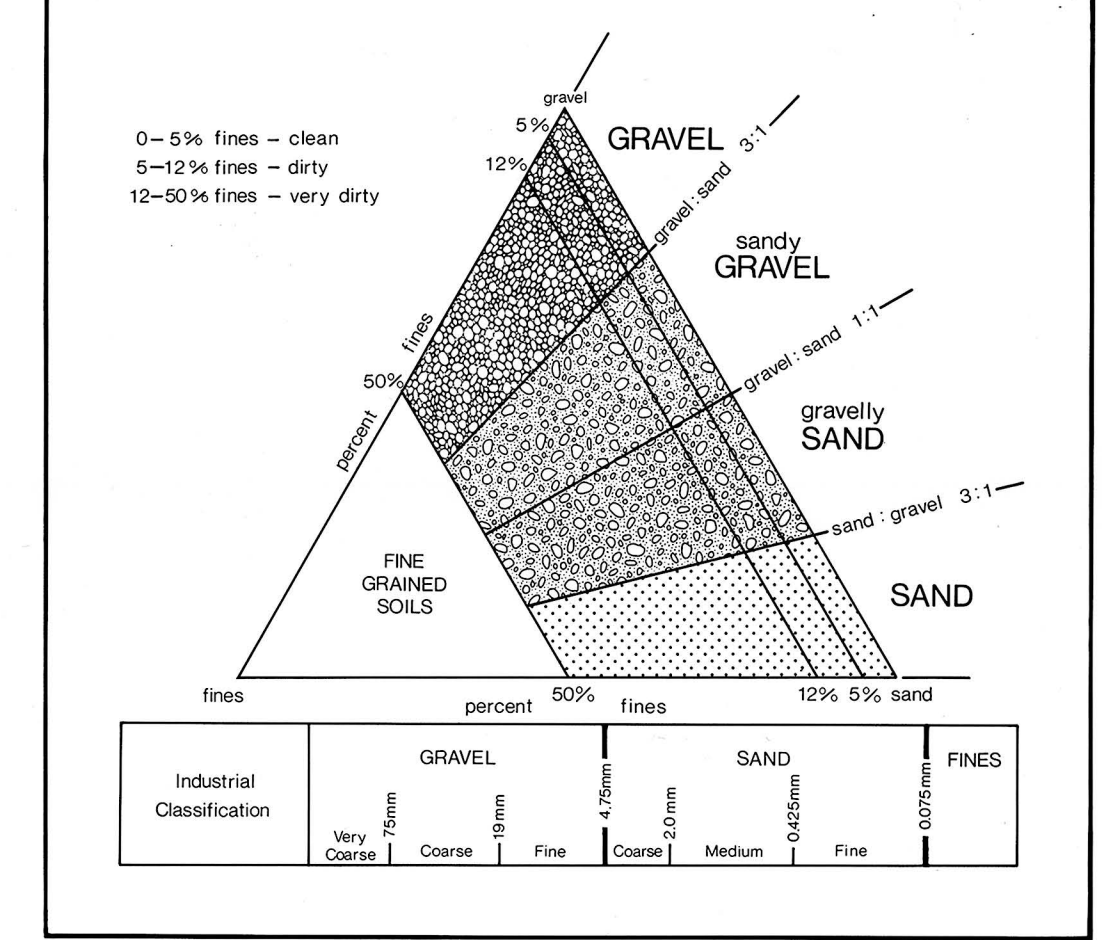
Texture — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular deposit 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.

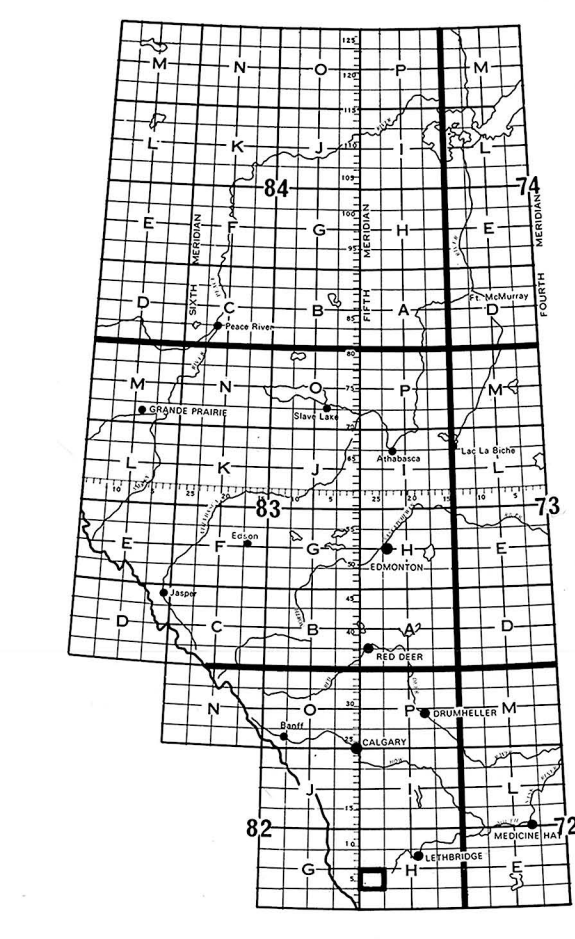
Deposit Area — Deposits in this study were delineated by interpretation of aerial photographs and the contacts should be considered approximate. Information is precise only where test holes, or geological sections, are indicated.

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



Pincher Creek, Alberta
 WEST OF FOURTH MERIDIAN QUARTER BY QUARTIER MERIDIEN
 Scale 1:50,000 Echelle
 Metres 1000 0 1000 2000 3000 4000 Mètres
 Yards 1000 0 1000 2000 3000 4000 Yards

PINCHER CREEK ALBERTA
 WEST OF FOURTH MERIDIAN QUARTER BY QUARTIER MERIDIEN
 Scale 1:50,000 Echelle
 Metres 1000 0 1000 2000 3000 4000 Mètres
 Yards 1000 0 1000 2000 3000 4000 Yards

Scale 1:50,000 in the DIRECTION OF LEVELS ET DE LA CARTOGRAPHIE
 MINISTRE DU LOGEMENT, DES SERVICES ET DES RESSOURCES, Énergie
 Et Développement Économique en 1985, avec des cartes de terrain en 1981, toutes
 les autres cartes en 1985, révisées en 1987.

Alberta
 RESEARCH COUNCIL
 Natural Resources Division
 Alberta Geological Survey

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.

REFERENCES:
 Geology and compilation by I. Shetsen; revised from Earth Sciences Report 81-4.

AGGREGATE RESOURCES
 PINCHER CREEK 82H/5