

**GENERAL COMMENTS**

Deposit Number	Material Description	Reserves (1000 m <sup>3</sup> )		Additional Comments	Texture (%)		Wear (%)	Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments
		Gravel	Sand		Gravel	Fines						
1	Dirty sandy gravel	720	348	Active pit; deposit in form of ridge	60	29	11	22.5	5	30	Ice-contact	Parts of ridge contain clay and till.
2	Dirty gravelly sand	780	780	Area undeveloped; area potentially useful but untested.	40	40	10	—	2	97	Glaciofluvial or Proglacial	Deposit appears to rest on bedrock at edge of valley but may overlie till to the south.
3	Dirty sandy gravel	32	22	Partially developed; deposit is discontinuous and variable	54	36	10	0.5	3	2	Ice-contact	Deposit is poorly sorted; has terrace form.
4	Dirty sandy gravel	61	40	Contains two old workings; shallow possibly discontinuous	55	40	5	—	0.5-1.5	22	Outwash	Deposit occurs as meltwater channel deposit above present incised creek.
5	Clean sandy gravel to gravelly sand	8,667	14,109	Southern part of deposit contains higher percentage of gravel and existing pits; northern part contains thickest material.	36	60	4	0.5	1.5-5	545	Outwash	Deposit occurs within meltwater channel but may define an ice marginal position.

**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 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 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<sup>3</sup>) = area (ha) × thickness (m) × 10,000 × % gravel; the same formula was used for sand.

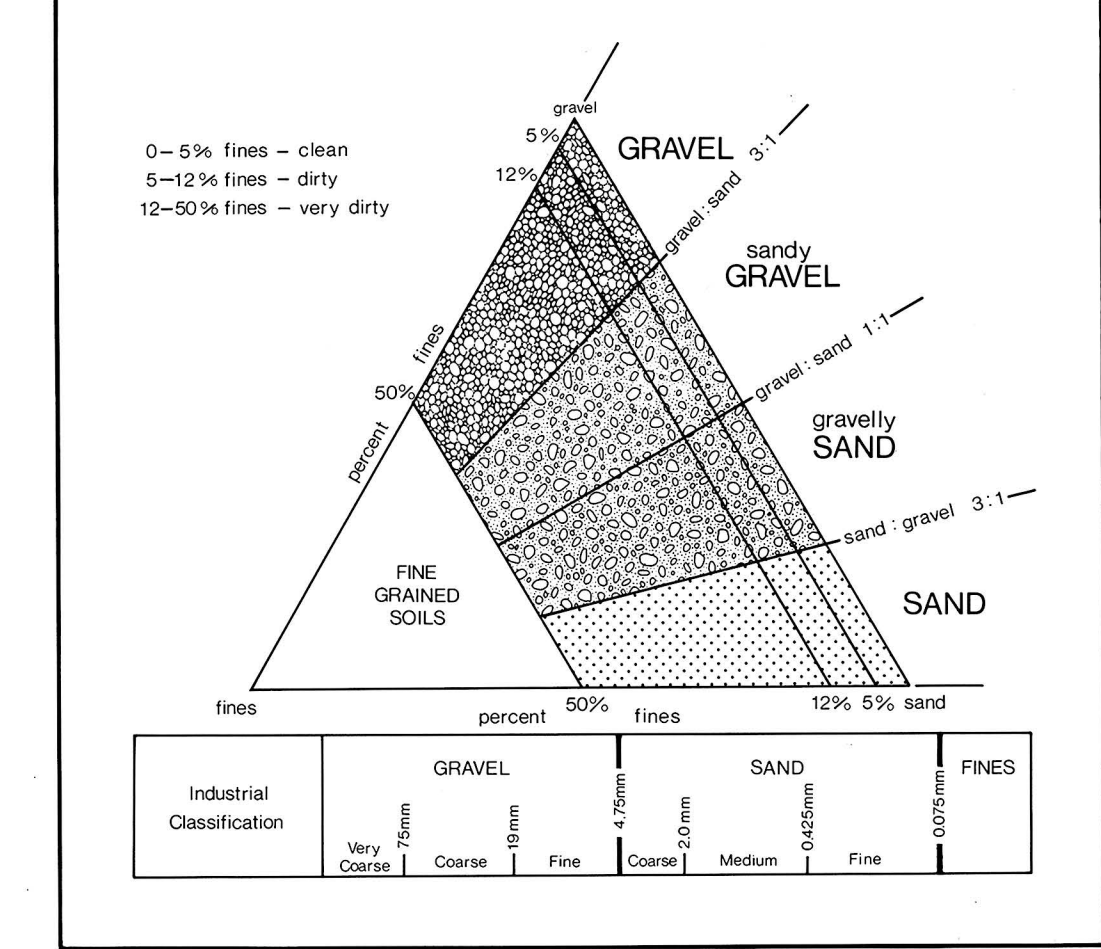
**Texture** — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular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

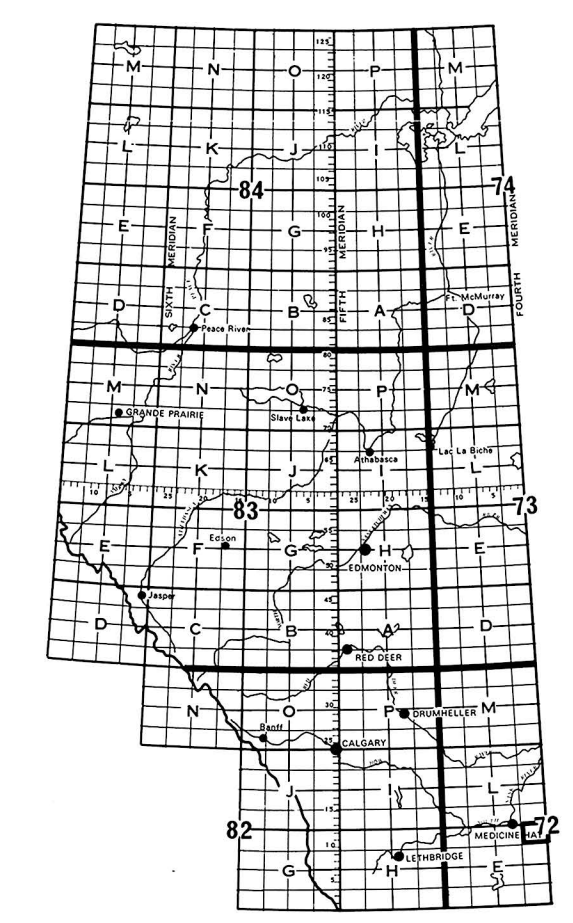
**Overburden Thickness** — The thickness of non-economic material, or overburden, covering a deposit, sometimes is a limiting factor in the exploitation of an aggregate deposit. The tabulated values given are approximate overburden thicknesses as determined from geological investigations and subsurface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



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.

References: Geology and compilation by W.A.D. Edwards, 1981. Additional information from J.A. Westgate, 1968.

**AGGREGATE RESOURCES**  
IRVINE 72E/16

Produced by the SURVEYS AND MAPPING BRANCH, SURVEY AND MAPPING DIVISION, ALBERTA AND SASKATCHEWAN. Original map and cartographic data in 1975. Edition date 1978. Information correct as of 1978.

Some maps are obtained from the Canada Map Office, Department of Energy, Mines and Technical Surveys, or your nearest map dealer.

© Canada Copyright Reserved 1978

**IRVINE**  
ALBERTA-SASKATCHEWAN

Scale 1:50,000 Échelle

0 1 2 3 Miles  
0 1000 2000 3000 4000 Metres  
0 1000 2000 3000 4000 Yards

**CONVERSION SCALE FOR ELEVATIONS** ÉCHELLE DE CONVERSION DES ÉLEVATIONS

Mètres 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000

Feet 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000

CONVERSION TABLE FOR FEET  
Elevations in feet above Mean Sea Level  
Niveau des hauteurs en pieds au-dessus du niveau moyen de la mer

ÉQUIVALENCE DES COTES EN PIEDS  
Élevations en pieds au-dessus du niveau moyen de la mer  
Système de référence géodésique canadien, 1927  
Projection Transverse de Mercator

© Canada 1978. Tous droits réservés.

Établi par la DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES. Mise à jour à l'échelle de proportions géométriques de 1:50,000. Les données sont en pieds au-dessus du niveau moyen de la mer.

Ce carton est en vente au Bureau des Cartes de Canada, ministère de l'Énergie, des Mines et des Ressources, Ottawa, ou chez le vendeur le plus près.

© Canada 1978. Tous droits réservés.