

GENERAL COMMENTS

Deposit Number	Material Description	Reserves (1000 m³)		Additional Comments	Texture (%)			Wear (%)	Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments
		Gravel	Sand		Gravel	Sand	Fines						
1	Clean gravelly sand	108	244	Water table at 3 m; inactive.	30	68	2	-	<0.5	3.0	16	Ice contact	Kame deposit; hilly topography; Saddle Lake Indian Reserve.
2	Clean gravelly sand	2,115	2,444	Water table varies from 3 m to 10 m; crushing required in some areas; inactive.	45	52	3	-	1.0	6.0	94	Glaciofluvial and ice contact	Gentle ridges topography; maximum clast size 30 cm in diameter.
3	Clean gravelly sand	252	365	Road cut exposure.	40	58	2	-	0.5	3.5	18	Ice contact (?)	Hilly topography; limited data.
4	Clean sandy gravel	147	61	Requires crushing; inactive.	70	29	1	-	0.5	3.0	7	Glaciofluvial	Outwash deposit; maximum size 30 cm in diameter.
5	Dirty sand	-	94,640	High potential for fine sand; inactive.	-	91	9	-	1.0	8.0	1300	Glaciofluvial	Outwash deposit.
6	Clean gravelly sand	910	307	Water table below 5 m, coal seams common; active.	74	25	1	-	1.0	3.0	41	Glaciofluvial	Outwash deposit; maximum clast size 20 cm in diameter; pipeline runs through part of the deposit.
7	Clean sand	-	9,408	Over 70% fine sand; inactive.	-	98	2	-	<0.5	2.0	490	Glaciofluvial	Outwash deposit.
8	Clean gravelly sand	468	1,368	High % of medium sand; inactive.	25	73	2	-	<0.5	2.5	75	Glaciofluvial	Outwash deposit.
9	Clean sand	130	2,444	High % of medium sand; inactive.	5	94	1	-	0.5	2.0	130	Glaciofluvial	Outwash deposit.
10	Clean gravelly sand	71	344	Low water table; interbedded clean fine sand and gravelly sand; inactive.	17	81	2	-	0.5	3.0	14	Ice contact	Kame deposit.
11	Clean sand	-	760	More than 95% fine sand inactive.	-	99	1	-	0	2.0	38	Glaciofluvial	Outwash deposit; hilly topography.
12	Clean sand	3,465	44,550	High water table; poor access; mainly medium to fine sand; inactive.	7	90	3	-	<0.5	>3.0	1650	Glaciofluvial	Outwash deposit; extends into map sheet 83H/16.
13	Dirty gravelly sand	739	806	Poor quality; inactive.	44	48	8	-	1.0	4.0	42	Ice contact	Kame deposit; hilly topography.
14	Clean sandy gravel	5,040	3,276	Water table varies 5 m to 6 m; important deposit for local use; active.	60	39	1	-	0.5	6.0	170	Glaciofluvial	Outwash terrace; maximum clast size 20 cm; very high % of ironstone. Petrographic number — 348.

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 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 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.

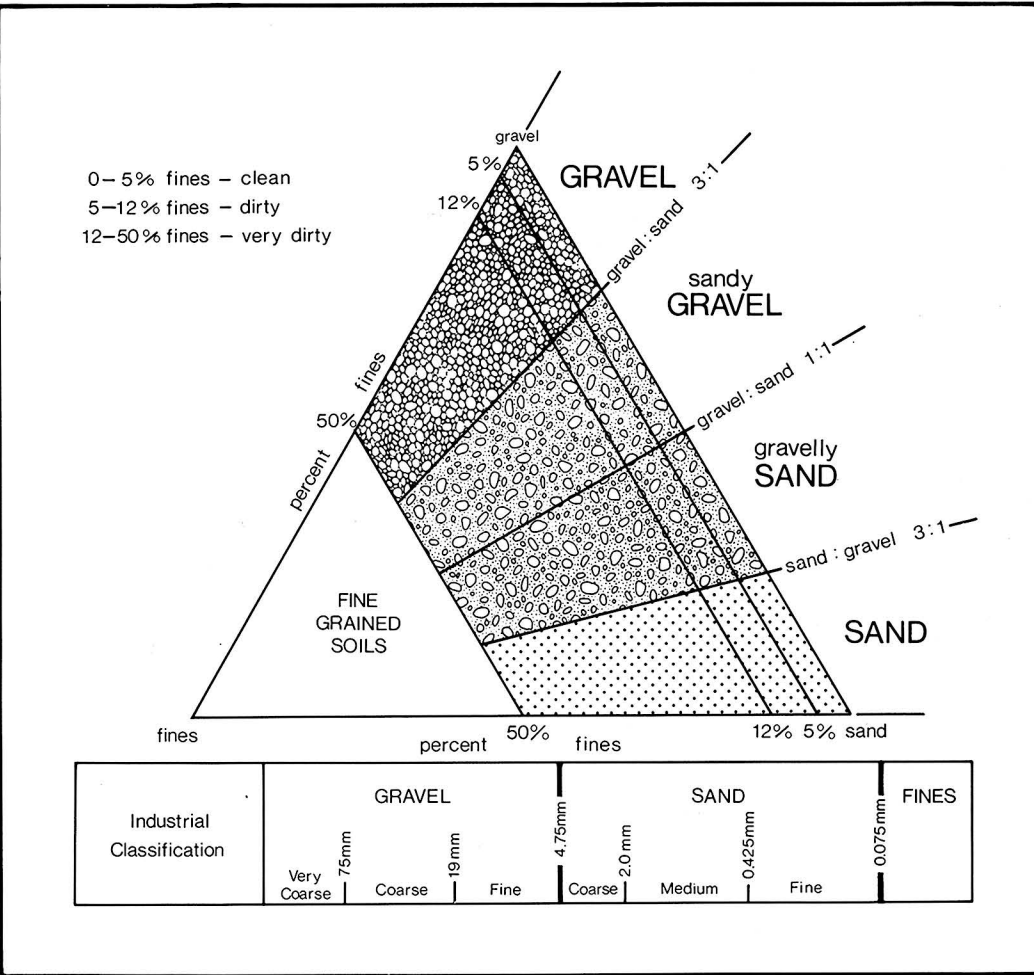
**Texture** — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular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

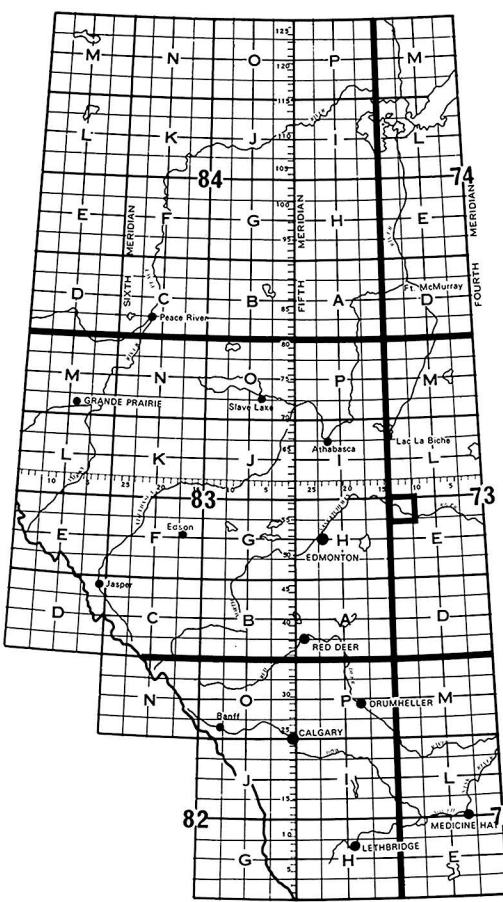
**Deposit Area** — Deposits in this study were delineated by interpretation of aerial photographs and the contacts should be considered approximate. Information is precise only where test holes, or geological sections, are indicated.

**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



Échelle 1:50,000  
Scale 1:50,000  
Contour interval 25 feet  
Élévation en pieds au-dessus du niveau moyen de la mer  
North American Datum 1927  
Projections Transverse Mercator

Produced by the SURVEYS AND MAPPING BRANCH,  
DEPARTMENT OF ENERGY, MINES AND TECHNICAL SURVEYS,  
Government of Alberta, Edmonton, Alberta, Canada.  
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Roads:  
hard surface, all weather  
hard surface, all weather  
loose or stabilized surface, all weather  
base surface, dry weather and  
unimproved ditches  
cart track  
trail, cut, fence, overpass  
FOR COMPLETE REFERENCE SEE REVERSE SIDE

HAIRY HILL  
ALBERTA  
WEST OF FOURTH MERIDIAN - OUEST DU QUATRIÈME MÉRIDIEN  
Scale 1:50,000 Échelle

Contour interval 25 feet  
Élévation en pieds au-dessus du niveau moyen de la mer  
North American Datum 1927  
Projections Transverse Mercator

Échelle 1:50,000  
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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 P. Sham, 1981. Additional information from R.B. Ellwood, 1955.

AGGREGATE RESOURCES

HAIRY HILL 73E/13