

Deposit Number	Material Description	Reserves (1000 m ³) Gravel Sand	Additional Comments	Texture (%)			Overburden Thickness (m)	Deposit Thickness (m)	Deposit Area (ha)	Deposit Genesis	Additional Comments
				Gravel	Sand	Fines					
1	Clean gravelly sand to gravel	720 1,026	Low water table (<0.5 m); interbedded layers of sand and gravel; sandier to the east. Inactive.	40	57	3	3.0	7.0	26	Outwash delta	High % Precambrian rocks; maximum size up to 30 cm (<1% some soft weathered rocks (<2%))
2	Clean gravelly sand	84 144	Water table unknown, probably more than 3 m below the surface.	35	60	5	0	>3.0	8	Outwash	Precambrian rocks common; medium to coarse sand.
3	Dirty sand and gravel	210 225	High water table (2 m depth); poor quality gravel. Inactive.	45	48	7	0.5	2.0	23	Outwash	This map sheet only covers S.W. portion of the deposit. High % of quartzites; some Precambrian rocks.
4	Clean sandy gravel	1,000 640	Water table at 5.0 m to 7.0 m; stones are fractured, but very durable, good quality. Active.	60	38	2	3.0	4.5	37	Preglacial (buried)	High relief; thick overburden (3 m); horizontal bedded layers of sand and gravel; high % of quartzites; fractured, clean medium sand; few rhyolites and petrified wood.
5	Clean gravel	6,738 1,838	Water table varies from 4.0 m to 8.0 m; good quality; requires crushing and washing. Inactive.	77	21	2	6.0	3.5	250	Preglacial	High % of quartzites; no Precambrian rock; maximum size to 15 cm (1%)
6	Clean sandy gravel	62 36	Water table at 1.5 m. Abandoned.	62	36	2	<0.5	2.0	5	Fluvial	Almost depleted pit; Precambrian rocks most common; medium sand.
7	Clean sand	15,250	Deposit contains fine grained sand, approx. 30% covered by dunes, may satisfy soil cement requirements.	89	11			6.0	816	Eolian	Stabilized U-shaped dunes.
8	Clean sand	2,300	Deposit contains fine grained sand, approx. 40% covered by dunes, may satisfy soil cement requirements.	97	3			3.0	200	Eolian	Marsh in interdune areas.
9	Very dirty sand	18 1,512	Partly reclaimed? Deposit may have potential for sand.	<1	84	15	1.0	3.0	60	Outwash terrace	Little data available.
10	Dirty sand	3,200 33,600	Partly excavated and loaned for farm use. Sand probably good for ice control purposes. Active.	8	84	8	0.5	8.0	900	Outwash delta	Cross bedded; coal seams interbedded with sand.

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.

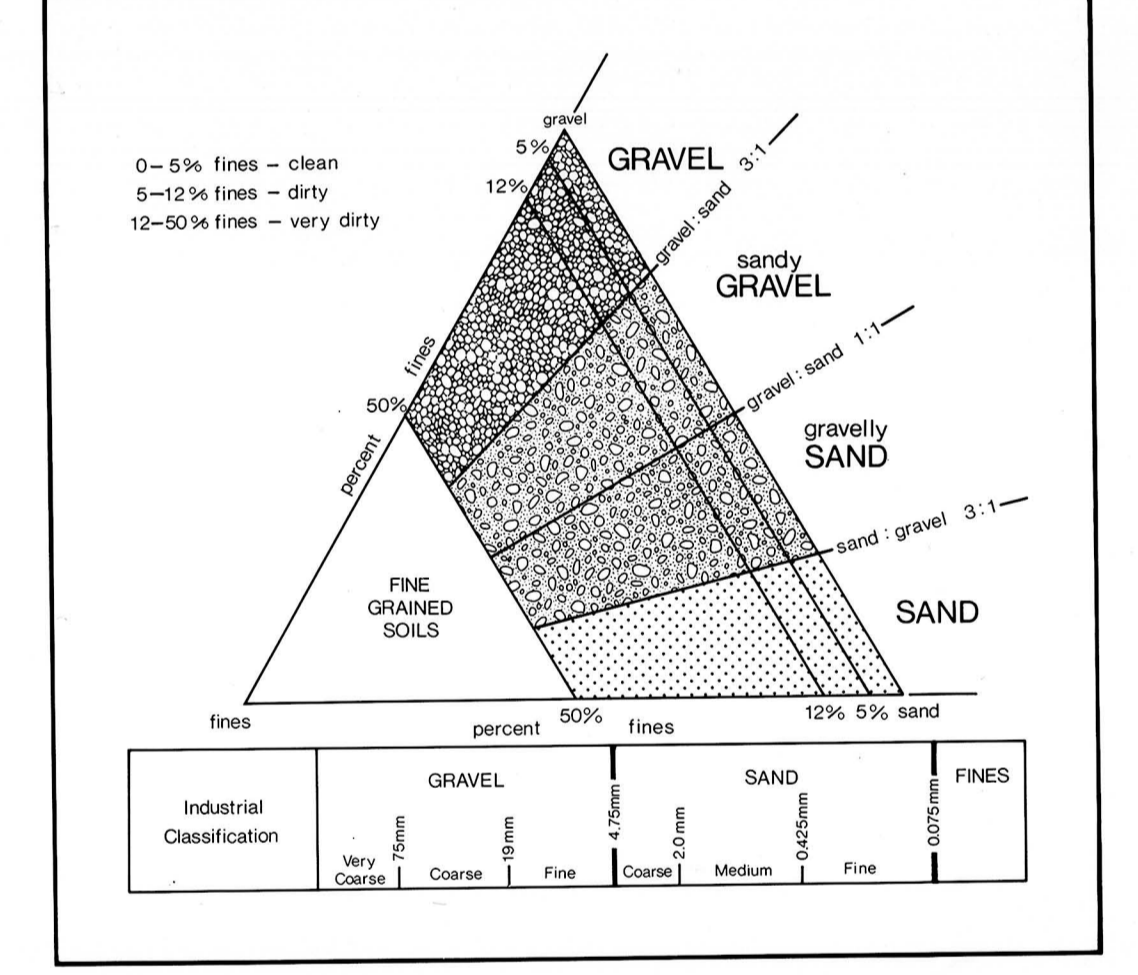
Texture — The texture of the sediment refers to the percentage of particles of various sizes. For mineral aggregate, the most important fractions are the gravel and sand. The actual dimensions of the clasts and particles in these fractions are given in the figure. The values given for a particular deposit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

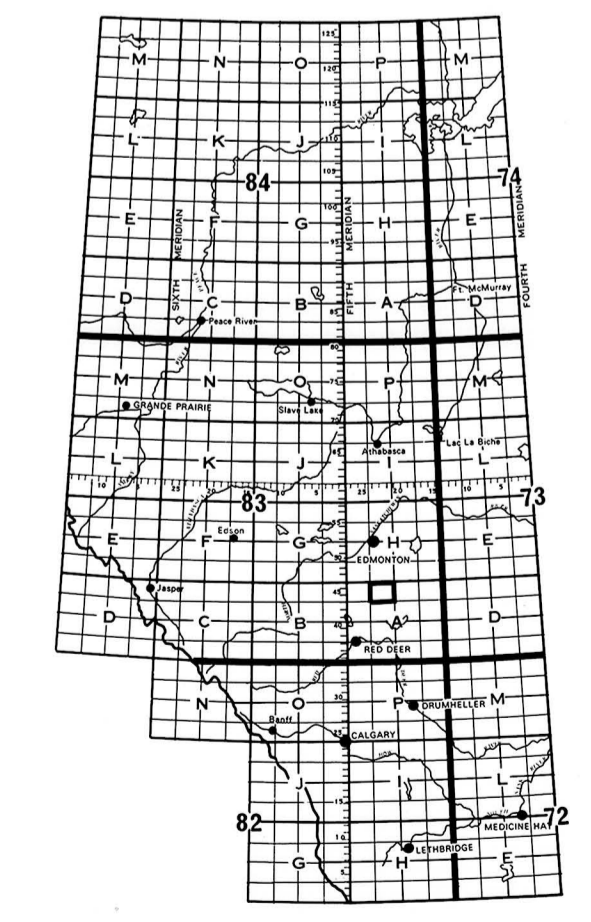
Overburden Thickness — The thickness of non-economic material, or overburden, covering a deposit, sometimes is a limiting factor in the exploitation of an aggregate deposit. The tabulated values given are approximate overburden thicknesses as determined from geological investigations and subsurface testing.

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



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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. Shum, 1980. Additional information from M.E. Hofer, 1976; A. Mac S. Sisker, 1960.

AGGREGATE RESOURCES
WETASKIWIN 83A/14

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WETASKIWIN
ALBERTA
WEST OF FOURTH MERIDIAN - OUEST DU QUATRIÈME MÉRIDIEN
Scale 1:50,000 Echelle

CONTOUR INTERVAL: 25 FEET
Elevation in Feet above Mean Sea Level
Système de coordonnées géographiques: NAD 83
Projection: Transverse Mercator, 1983

COORDONNÉES DES COGNES 25 PIEDS
Élévation en pieds au-dessus du Niveau Moyen de la Mer
Système de coordonnées géographiques: NAD 83
Projection: Transverse Mercator, 1983

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