

GY 402 Sedimentary Petrology
Lecture 3: Sandstone Classification Schemes

Wackes

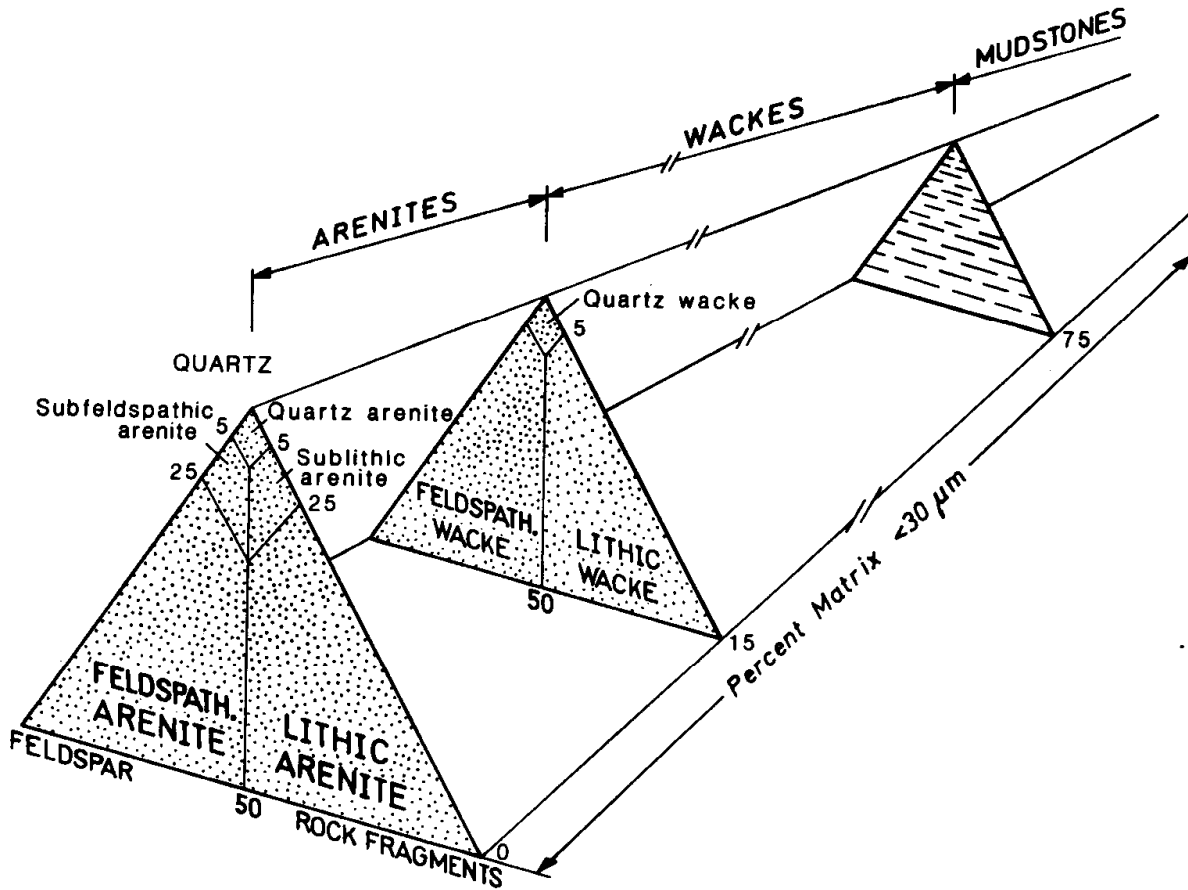
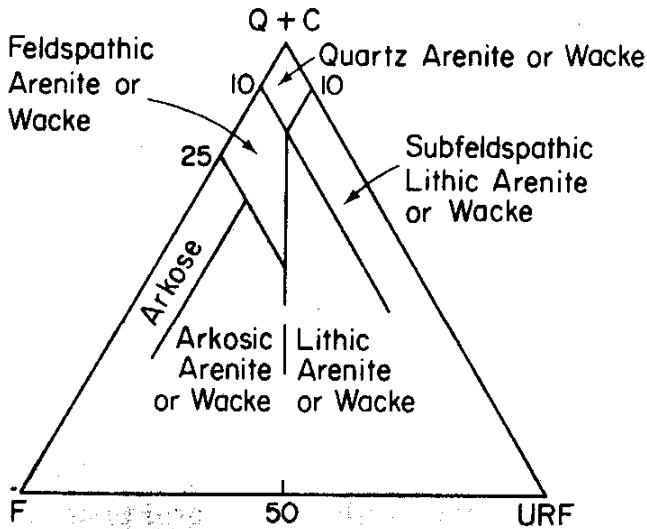


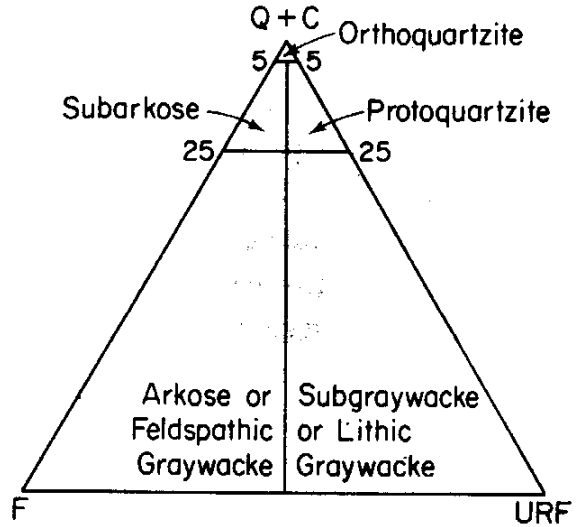
FIGURE 1.1 Classification of sandstones. Modified from Dott, Jr. (1964). Reproduced by permission of the Society of Economic Paleontologists and Mineralogists.

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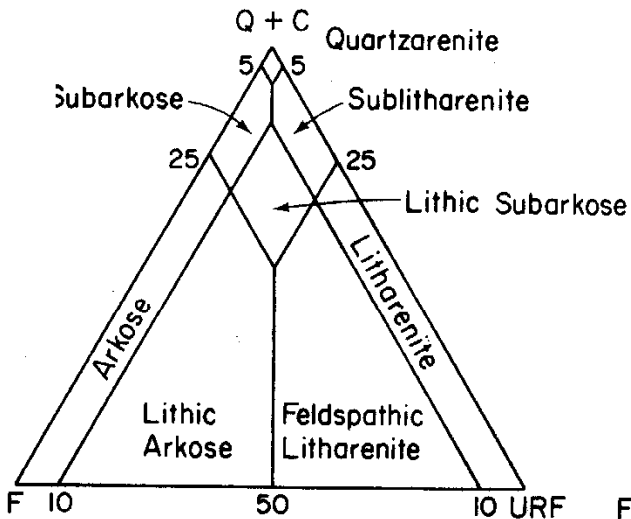
Arenites



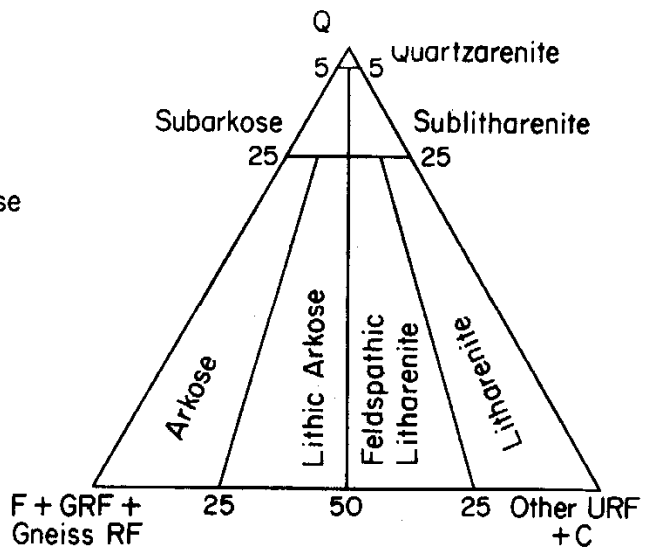
Gilbert, 1955



Pettijohn, 1957



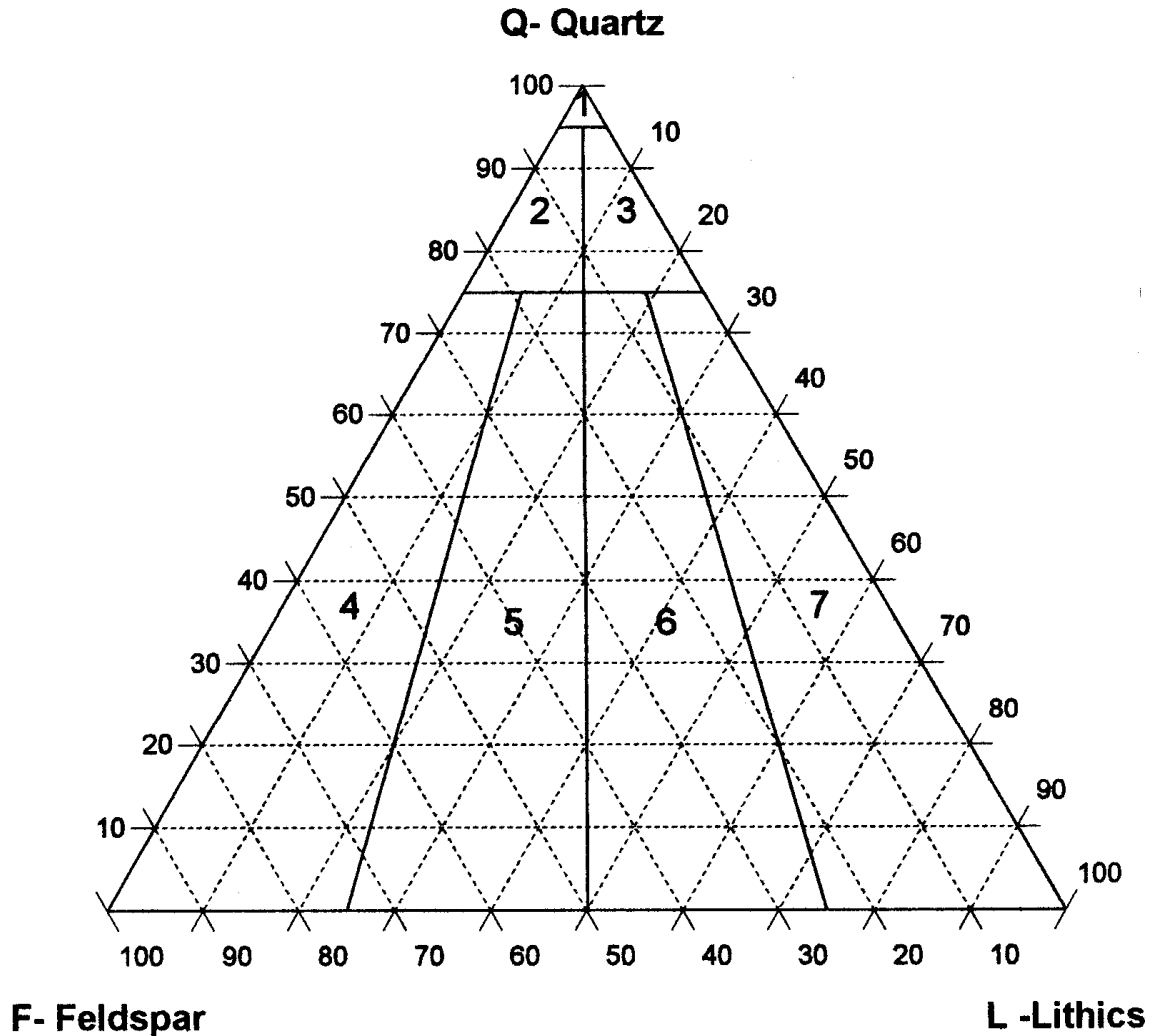
McBride, 1963



Folk, 1968

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Lecture 3: Sedimentary Rock Classification (QFL) Ternary Plot (Folk, 1968)




Field Index:

- 1 – Quartz Arenite
- 2 – Subfeldsarenite
- 3 – Sublitharenite
- 4- Feldsarenite (Arkose)
- 5 – Lithic Arkose
- 6 – Feldspathic Litharenite
- 7- Litharenite

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Lecture 3: Carbonate Classification Schemes

	OVER 2/3 LIME MUD MATRIX				SUBEQUAL	OVER 2/3 SPAR CEMENT		
Percent Allochems	0-1%	1-10%	10-50%	OVER 50%	SPAR AND LIME MUD	SORTING POOR	SORTING GOOD	ROUNDED AND ABRADED
Representative Rock Terms	Micrite and Dismicrite	Fossiliferous Micrite	Sparse Biomicrite	Packed Biomicrite	Poorly Washed Biosparite	Unsorted Biosparite	Sorted Biosparite	Rounded Biosparite
1959 Terminology	Micrite and Dismicrite	Fossiliferous Micrite	Biomicrite		Biosparite			
Terrigenous Analogues	Claystone		Sandy Claystone	Clayey or Immature Sandstone	Submature Sandstone	Mature Sandstone	Supermature Sandstone	



Lime mud matrix
 Sparry calcite cement

CARBONATE TEXTURAL SPECTRUM

Fig. 13-22 Folk's classification of carbonate rocks.

Allochthonous Limestone Original components not organically bound during deposition					Autochthonous Limestone Original components organically bound during deposition				
Less than 10% >2 mm components				Greater than 10% >2 mm components		By organisms that build a rigid framework	By organisms that encrust and bind	By organisms that act as baffles	
Contains lime mud (<0.03 mm)			No lime mud		Matrix-supported				Supported by grain components coarser than 2 mm
Mud-supported		Grain-supported							
Less than 10% grains (>0.03 mm <2 mm)	Greater than 10% grains					Boundstone			
Mudstone	Wackestone	Packstone	Grainstone	Floatstone	Rudstone	Framestone	Bindstone	Bafflestone	