

WKH-1, Jabal Eqab, Khusayyayn Formation  
Thickness: 21.85 m, (N 20 9 24.7 ) (E 44 35 14)  
(Scale: 30%) (Hussain Fahad Al-Ajmi 2012)

Sedimentology, Stratigraphy  
and Reservoir Quality of The  
Paleozoic Wajid Sandstone  
in the SW Saudi Arabia

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Total Depth	Color	Litho Facies unit	Grain size							Lithology	Round Sorting	Sedimentary Structure	
			C	S	VFS	Ms	Vcs	MG	CG				
		Y	14	S-9 (K-1-9)					Medium to coarse, massive, yellow to dark yellow sandstone with clay fine fragments, or clasts. The cementing is calcareous cemented.				
		Y	13						Coarse, tabular cross bedding, yellow to gray color, the sets and coasts are slumped, and has a shape of sigmoidal like	5	4		
		Y	13							4			
		Y	13	S-8 (K-1-8)						5	4		
		Y	12						Coarse, massive sandstone	4	3		
		Y	11						Coarse sand, macro scale trough cross bedding, rounded and sorted	4	4		
		Y	10						Med. To coarse, macro scale trough cross bedding rounded, well sorted, partially slumped, and have a de-watring structure in one side of the bed	3-4	5		
		Y	9						Med. To coarse sandstone, macro scale trough cross bedding, sub-rounded to rounded, and well sorted	3-4	5		
			9							4			
		Y	8						Massive, Med. To coarse well sorted sub-rounded to rounded slumped, and deformed, med. Sets and cpsets it has a sigmoidal shape deformation or slumping	4	5		
			8							4	5		
		Y	7						Medium to coarse, tabular, with medium gravels. The upper contact is an unconformity surface like	3-4	5		
		Y	6	S-5 (K-1-5)					Massive, medium to coarse sandstone, amalgamating channels and slumping	3-4	5		
		Y	5						coarse, macro scale 2D, trough cross bedding sandstone,	3-4	5		
		Y	5	S-4 (K-1-4)					coarse, macro scale 2D, trough cross bedding sandstone,	3-4	5		
		Y	4	S-3 (K-1-3)					Fine sandstone, 2D trough cross bedding,	3-4	5		
		Y	3	S-2 (K-1-2)					Fine gravel at the base of each set fining up to very coarse, macro scale trough cross bedding sandstone,	3-4	5		
		Y	2	S-1 (K-1-1)					Very coarse, macro scale trough cross bedding sandstone, with some coarse gravel	3-4	5		
		Y	1										
		Y	1	Blank this part is covered by sand and debris for 1.6 m									

LU-12.3 medium to coarse massive sandstone.

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LU-9.1 medium to coarse sandstone, macro-scale 2D trough cross bedding

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LU-12.3 medium to coarse massive sandstone.

LU-8 sandstone, medium grain to pebbly, tabular cross bedding

LU-12.3 medium to coarse massive sandstone.

LU-9.1 medium to coarse sandstone macro-scale 2D-trough cross bedding.

LU-9 sandstone, macro-scale 2D-trough cross bedding

LU-10.2.1 graded prbbly sandstone (it cut into the underlying unit)

LU-10 sandstone to pebbly sandstone macro scale 2d-trough cross bedding.

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Total Depth	Color	Litho Facies unit	Grain size							Lithology	Round Sorting	Sedimentary Structure		
	HCL Rec		C	S	VFS	Ms	Vcs	MG	CG					
21	Y											Coarse grain, macro scale 3D trough cross bedding sandstone, dark yellow to light brown, calcareous cement	4-5	
21													4	
20	Y	S-13 (K-1-13)										Coarse grain, medium scale tabular cross bedding sandstone	4-5	
19												Medium grain, medium scale tabular cross bedding sandstone	4-5	
18	Y											Coarse, low angle macro scale cross bedding	4	
17	Y	S-12 (K-1-12)										Coarse, medium scale tabular cross bedding sandstone	4-5	
16	Y	S-11 (K-1-11)										Massive Very coarse sandstone yellow to dark yellow, with calcareous cement and some silty fine fragments	3	
15	Y												3-4	
15	Y	S-10 (K-1-10)										Graded bedding, fine gravel up to medium grains at the top, the lower boundary is because it contains conglomerates and pebbles from different rock types, mainly it is quartzitic sandstone. The structure is macro scale trough cross bedding. The base of this unit starts with rounded black coarse gravels and pebbles.	3-4	
15	Y												4-5	
15	Y												3-4	
14													4-5	

LU- 11.1 sandstone to pebbly sandstone 3Dtrough cross bedsand channel fills.

LU- 8.1 fine and medium grained sandstone, deposited in tabular cross bedding

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LU-7 sandstone, horizontal to low cross angle bedding.

LU- 8.1 fine and medium grained sandstone, deposited in tabular cross bedding

LU-12.3 medium to coarse massive sandstone.

LU-6.6.2 tabular c.b, fining upward, fine gravel to med. ss.

LU-12.3 medium to coarse massive sandstone.

