

The relationships among paleo-environment, provenance and a lacustrine shallow-water delta-meandering river sedimentary system: Insights from the Middle–Upper Jurassic formations of the Fukang Sag of Junggar Basin, NW China

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Supplementary paper

Table S1. The relative contents of main minerals in the heavy minerals in the Shishugou Group sandstones, Fukang Sag

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Stratum	Sample	Depth (m)	Z (%)	A (%)	R (%)	An (%)	L (%)	S (%)	P (%)	B (%)	T (%)	E (%)	G (%)	L (%)	I (%)	C (%)	M (%)	TM (%)	ZTR
J3q	D701-1	3901.0	4.1	0.4	0.7	0.5	1.4	0.0	0.0	0.0	0.0	20.4	1.4	66.6	0.0	0.0	4.5	28.8	16.5
J3q	D701-2	3904.1	0.4	0.4	0.9	0.9	2.2	0.4	0.0	0.0	0.0	16.7	1.8	67.0	0.0	0.4	8.8	23.8	5.6
J3q	D701-3	3905.7	1.4	0.5	0.5	1.8	0.0	4.5	0.0	0.0	0.0	12.6	5.0	54.5	10.4	0.0	9.0	26.1	6.9
J3q	D701-4	3907.2	1.4	0.0	1.4	0.9	2.4	0.5	0.0	2.4	0.0	24.5	0.5	66.0	0.0	0.0	0.0	31.6	8.3
J3q	D6-1	4260.3	2.0	0.3	0.3	0.3	1.0	2.8	0.0	40.7	0.0	27.8	1.5	20.2	0.0	0.8	2.5	35.9	6.3
J3q	D6-2	4257.0	1.0	0.0	0.1	0.4	0.7	3.9	0.1	0.2	0.0	55.1	2.0	28.9	5.0	1.0	1.7	63.3	1.7
J2t3	D7-1	4138.3	0.1	0.1	0.1	0.1	0.2	0.2	0.0	14.1	0.0	54.5	1.1	28.8	0.9	0.1	0.0	56.1	0.3
J2t3	D7-2	4135.1	0.5	0.0	0.1	0.1	0.2	0.5	0.0	0.0	0.1	35.9	1.1	61.2	0.0	0.0	0.5	38.3	1.5
J2t3	D6-3	4454.7	0.7	0.0	0.7	0.3	1.0	1.0	0.3	6.5	0.3	84.7	3.1	1.0	0.3	0.0	0.0	91.8	1.9
J2t3	D6-4	4453.8	0.2	0.2	0.2	0.4	2.2	7.3	0.0	18.3	0.0	62.9	4.1	0.2	0.0	4.1	0.0	77.5	0.5
J2t3	D101-1	4930.0	1.0	0.1	0.2	0.4	1.1	0.2	0.0	0.0	0.0	37.3	2.0	54.0	0.0	0.0	3.7	42.3	2.9
J2t3	D101-2	4942.0	3.5	0.0	1.4	1.2	2.3	1.2	0.0	18.8	0.0	33.2	1.5	33.8	0.0	0.1	2.9	44.3	11.1
J2t3	D101-3	4916.0	0.3	0.3	3.0	1.5	12.1	0.7	0.0	0.0	0.2	16.9	0.7	47.2	0.0	0.2	16.9	35.8	9.9
J2t3	D101-4	4970.0	0.1	0.0	0.7	1.5	11.0	0.0	0.0	52.9	0.0	3.0	0.3	28.6	0.0	0.0	1.8	16.7	4.8
J2t3	D101-5	4951.0	1.5	0.1	0.7	1.5	13.4	0.1	0.0	46.8	0.0	7.1	0.2	25.0	0.0	0.2	3.4	24.6	9.1
J2t2	D11-1	4901.22	0.1	3.5	1.4	0.7	0.7	0.7	71.2	0.0	0.3	12.6	2.8	0.0	0.0	5.9	0.0	22.8	8.3
J2t2	D11-4	4986.3	3.4	1.1	0.7	1.9	1.6	2.7	5.3	0.0	0.1	59.3	9.7	1.8	0.0	12.4	0.0	80.5	5.2
J2t2	D8-1	4425.3	3.5	1.8	0.3	0.2	0.9	2.6	0.0	0.0	1.0	38.1	0.8	33.2	0.0	5.0	12.5	49.3	9.8
J2t2	D8-2	4542.8	0.4	0.4	0.4	0.4	1.8	0.7	0.0	30.2	0.0	61.2	0.7	0.4	0.0	3.6	0.0	65.8	1.1
J2t2	D8-3	4546.4	0.4	0.1	0.6	0.9	1.9	3.3	0.1	1.6	0.2	82.2	1.9	0.2	0.0	6.5	0.0	91.6	1.4
J2t2	D8-4	4547.0	1.6	0.9	0.5	0.4	1.6	16.4	0.0	0.0	9.3	58.2	4.1	0.2	0.2	5.0	1.8	92.9	12.3
J2t2	D8-5	4548.0	0.3	0.1	0.1	0.2	0.5	0.8	0.0	76.9	0.0	17.8	0.4	0.1	0.0	1.7	1.0	20.3	2.1
J2t2	D1-1	4961.2	1.1	0.0	0.0	0.0	0.3	1.0	0.0	0.0	0.0	24.3	3.0	65.7	0.0	0.1	4.2	30.0	4.1
J2t2	D1-2	4958.2	2.7	0.5	0.3	0.2	0.4	0.8	0.0	0.0	0.0	18.2	1.0	71.9	0.0	0.0	4.0	24.1	12.4
J2t2	D1-3	4960.1	0.8	0.2	0.1	0.2	0.4	0.5	0.1	0.0	0.0	16.9	0.8	72.5	0.0	0.0	7.6	19.8	4.6
J2t2	D1-4	4960.2	0.3	0.1	0.1	0.1	1.3	0.8	0.0	0.0	0.0	13.8	0.7	81.7	0.0	0.0	1.1	17.2	2.3
J2t2	D3-1	5511.6	5.5	0.0	4.6	5.2	13.3	0.1	0.0	26.7	0.0	14.4	0.9	29.2	0.0	0.0	0.0	44.1	23.0
J2t2	D3-2	5511.3	8.0	0.1	1.1	0.6	1.7	2.5	0.0	5.7	0.0	27.6	3.6	37.7	0.0	2.2	9.2	45.2	20.2
J2t2	D3-3	5512.9	7.4	0.0	0.8	0.9	1.1	0.8	0.0	0.0	0.0	12.1	5.6	58.0	0.0	0.0	13.1	28.8	28.5
J2t2	D3-4	5542.8	0.2	0.1	1.0	0.8	2.0	1.6	0.0	29.8	0.1	30.7	3.9	28.1	0.0	0.0	1.6	40.5	3.2
J2t2	D3-5	5547.6	11.8	1.3	1.3	1.3	2.6	2.6	0.0	0.0	0.0	36.8	3.9	23.7	0.0	1.3	13.2	61.8	21.3
J2t2	D101-6	5005.0	0.1	0.0	3.8	2.3	11.3	0.0	0.0	54.2	0.0	4.4	0.5	21.1	0.0	0.0	2.3	22.4	17.2
J2t2	D101-7	5050.0	0.2	0.1	0.1	0.1	2.8	0.2	5.7	44.9	0.0	18.1	1.8	19.8	0.0	0.0	6.3	23.3	1.1
J2t2	D101-8	5072.0	0.2	0.0	1.6	1.6	3.9	0.8	0.0	68.1	0.0	5.1	0.7	11.2	0.9	0.0	6.0	13.8	13.0
J2t1	D7-3	4516.2	0.2	0.1	0.1	0.1	0.8	1.2	13.0	0.0	0.0	78.4	1.9	0.2	0.0	3.7	0.5	82.6	0.3
J2t1	D7-4	4514.8	0.0	0.0	0.0	0.0	0.9	0.4	31.7	41.8	0.0	23.3	0.5	0.0	0.0	1.0	0.3	25.2	0.3

J2t1	D7-5	4517.8	0.4	0.2	0.2	0.4	4.4	2.7	13.1	1.1	0.0	67.4	4.4	0.2	0.0	3.4	2.1	80.2	0.8
J2t1	D1-5	5307.3	2.7	0.1	0.2	3.2	1.2	0.0	90.2	0.0	0.0	0.0	0.6	0.1	0.0	0.6	1.1	8.0	36.0
J2t1	D1-6	5309.5	0.0	0.0	0.0	0.1	0.1	0.0	99.1	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.3	0.4	16.7
J2t1	D1-7	5299.5	20.2	0.3	0.8	0.8	2.2	0.3	59.6	0.0	2.4	0.0	8.4	0.3	0.0	4.3	0.5	35.3	66.4
J2t1	D2-1	4422.85	2.7	1.0	0.6	0.7	0.7	3.8	0.1	0.0	2.0	60.6	18.9	0.1	0.0	7.6	1.3	90.9	5.8
J2t1	D2-2	4423.45	9.5	5.2	3.6	3.9	3.3	5.8	0.0	0.0	0.9	38.9	25.9	0.3	0.0	0.0	2.7	97.0	14.4
J2t1	D2-3	4428.45	13.7	3.3	4.1	5.7	6.5	1.6	0.0	0.0	0.1	39.8	22.8	0.6	0.0	0.0	1.7	97.6	18.4
J2t1	D2-4	4428.32	15.6	0.7	3.7	3.4	7.1	0.7	0.0	0.0	0.0	56.1	6.6	0.6	0.0	4.4	1.0	94.0	20.7
J2t1	D2-5	4429.15	21.1	5.3	5.3	5.3	23.7	0.0	5.3	0.0	0.0	2.6	15.8	0.0	0.0	15.8	0.0	78.9	33.3
J2t1	D2-6	4430.81	8.9	7.5	1.9	1.7	2.5	3.5	0.0	0.0	0.0	44.3	9.1	0.1	0.0	19.8	0.7	79.4	13.7
J2t1	D2-7	4423.5	4.6	1.6	1.8	1.9	2.2	3.4	0.0	0.0	0.2	49.9	15.1	1.8	3.6	12.5	1.4	80.8	8.1
J2t1	D2-8	4428.35	3.5	0.8	0.5	1.0	1.1	4.7	1.4	0.0	0.9	48.2	19.8	0.0	0.0	17.9	0.0	80.6	6.1
Average (%)			3.5	0.8	1.1	1.2	3.3	1.9	8.3	12.1	0.4	32.4	4.6	23.8	0.4	3.0	3.2	49.2	9.7

Z, zircon; A, apatite; R, rutile; AN, anatase; L, leucosene; S, sphene; P, pyrite; B, barite; T, tourmaline; E, epidote; G, garnet; L, limonite; I, ilmenite; C, chromite; M, magnetite; TM, transparent mineral