Table. S2: Geographical location (degree, minute, second), ages and characteristics of the analyzed samples of the Sistan sandstones. Analysis key: MFA: modal framework analysis, HM: heavy minerals, DZA: detrital zircon age and Hafnium isotopes.

Sample No:	**Latitude N deg min sec**	**Longitude E deg min sec**	**Stratigraphic age**	**Stratigraphic age**	**Lithology / inferred depositional environment**	**MFA**	**HM**	**DZA**
12 AM 94	27 04 05	61 21 12	Oligocene	Chattian	Fine grained turbidity sandstone with flute cast and load cast	MFA		
12 AM 97	26 55 02	61 36 02	Oligocene	Chattian	Medium grained turbidity sandstone with cross-bedding	MFA	HM	
12 AM105	27 04 21	61 22 48	Oligocene	Chattian	Fine grained turbidity sandstone alternation with shale, bioturbation	MFA	HM	
12 AM 123	27 31 00	62 22 35	Eocene	Ypresian - Bartonian	Fine grained sandstone in imbricate zone	MFA	HM	DZA
12 AM 124	27 25 19	62 10 23	Eocene	Lutetian - Bartonian	Medium grained turbidity sandstone with ripple mark	MFA	HM	DZA
12 AM 134	27 35 26	60 40 29	Oligocene	Rupelian	Fine grained turbidity sandstone with ripple mark	MFA	HM	DZA
12 AM 135	27 38 01	62 32 05	Eocene	Ypresian - Bartonian	Thick bedded, medium to coarse grained massive turbidity sandstone	MFA	HM	DZA
13 AM 157	27 59 32	61 17 23	Eocene	Ypresian - Rupelian	Coarse grained sandstone with through cross-bedding	MFA	HM	DZA
13 AM 166	27 49 31	61 15 44	Eocene	Ypresian - Rupelian	Medium grained turbidity sandstone with flute cast	MFA	HM	DZA
13 AM 186	28 10 34	61 27 18	Eocene	Ypresian - Priabonian	Medium to coarse grained sandstone with through cross-bedding, deltaic	MFA	HM	DZA
13 AM 206	28 12 48	61 35 52	Eocene	Ypresian - Bartonian	Coarse grained sandstone with through cross-bedding, deltaic	MFA	HM	DZA
13 AM 218	27 33 59	62 01 27	Eocene	Ypresian - Lutetian	Coarse grained sandstone with flute cast, bioturbation, deltaic	MFA	HM	DZA
13 AM 224	27 41 10	61 51 05	Eocene	Ypresian - Lutetian	Medium grained sandstone with cross-bedding, shelf environment	MFA	HM	DZA
13 AM 237	27 47 37	61 57 41	Eocene	Ypresian - Bartonian	Fine grained turbidity sandstone, alternated with bioturbated shale	MFA	HM	DZA
13 AM 246	27 17 36	62 32 25	Eocene	Ypresian - Bartonian	Medium grained turbidity sandstone with ripple mark and bioturbation	MFA	HM	DZA
13 AM 252	26 58 27	62 32 13	Eocene - Oligocene	Pirabonian - Rupelian	Medium grained turbidity sandstone with ripple mark	MFA	HM	DZA
13 AM 260	26 45 59	62 40 30	Eocene - Oligocene	Pirabonian - Rupelian	Fine grained turbidity sandstone with flute cast and load cast		HM	DZA
13 AM 263	27 16 21	62 28 51	Eocene	Pirabonian	Medium grained turbidity sandstone with cross-bedding	MFA	HM	DZA
13 AM 280	27 10 42	62 16 42	Eocene - Oligocene	Pirabonian - Rupelian	Fine grained turbidity sandstone	MFA	HM	DZA
13 AM 293	27 11 02	61 43 12	Eocene	Ypresian - Bartonian	Fine grained turbidity sandstone, alternated with bioturbated shale	MFA	HM	DZA