

Supplementary Table S1. Concentrations of REE and calculated parameters in samples from Fengcheng Formation in Mahu Sag

For-  mation	lithogy	Samples	Depth	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	ΣREY	LREE	HREE	Y/Ho	Ce <sup>+</sup> ano-maly	(La/Yb)N	(La/Sm)N	(Gd/Yb)N										
				(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)												
P <sub>1f3</sub>	Dolomite mudstone	F7-4	3151.7	20.48	39.17	5.4	22.15	4.9	1.03	4.55	0.8	4.62	1.05	2.94	0.47	3.14	0.47	28.11	139.28	93.14	46.14	26.89	0.86	0.48	0.61	0.88										
	Dolomite mudstone	F7-5	3151.9	5.03	11.6	1.42	6.06	1.45	0.32	1.42	0.24	1.45	0.36	1.04	0.18	1.19	0.18	10.31	42.25	25.88	16.38	29.02	1	0.31	0.5	0.72										
	Dolomite mudstone	F7-6	3155.5	8.61	18.89	2.17	8.26	1.66	0.36	1.4	0.23	1.23	0.27	0.78	0.13	0.91	0.14	7.76	52.83	39.95	12.87	28.51	1.01	0.7	0.75	0.93										
	Dolomite mudstone	F7-7	3156.5	19.21	44.23	5.35	21.38	4.57	0.96	3.87	0.62	3.26	0.66	1.76	0.28	1.71	0.26	16.79	124.92	95.71	29.21	25.46	1.01	0.83	0.61	1.37										
	Tuffaceous mudstone	F7-8	3158.8	18.49	40.68	4.56	17.57	3.6	0.7	3.12	0.53	2.94	0.66	1.86	0.32	1.98	0.3	17.62	114.93	85.6	29.33	26.5	1.02	0.69	0.75	0.95										
	Tuffaceous mudstone	F7-9	3173.5	18.05	42.17	5.08	21.75	5.27	1.02	5.06	0.89	5.2	1.11	2.89	0.46	2.81	0.42	29.65	141.85	93.34	48.5	26.77	1.02	0.47	0.5	1.09										
	Tuffaceous mudstone	F7-10	3176.2	19.02	39.57	5	20.99	4.76	1.09	4.42	0.76	4.29	0.94	2.7	0.42	2.59	0.4	24.58	131.54	90.43	41.11	26.05	0.94	0.54	0.58	1.03										
	Tuffaceous mudstone	F7-11	3179.2	18.81	41.25	5.33	21.49	4.82	0.88	4.66	0.77	4.34	0.93	2.44	0.39	2.38	0.35	24.49	133.32	92.57	40.76	26.32	0.95	0.58	0.57	1.19										
	Tuffaceous mudstone	F7-12	3180.9	20.73	44.97	5.69	23.41	5.28	1.13	4.79	0.81	4.49	0.99	2.68	0.43	2.61	0.39	26.68	145.1	101.22	43.88	26.83	0.96	0.59	0.57	1.11										
	Dolimitic siltstone	F7-13	3182.9	23.98	52.34	6.35	26.31	5.82	1.1	5.57	0.96	5.59	1.24	3.33	0.53	3.09	0.45	31.37	168.02	115.89	52.13	25.3	0.98	0.57	0.6	1.09										
	Dolimitic siltstone	F7-14	3186.8	7.53	16.9	1.85	7.18	1.48	0.3	1.27	0.21	1.24	0.28	0.84	0.15	1.01	0.15	8.33	48.72	35.25	13.47	30.25	1.04	0.55	0.74	0.76										
	Dolimitic siltstone	F7-16	3198.3	15.78	31.86	3.7	15.62	3.88	0.84	3.74	0.61	3.42	0.72	1.89	0.31	1.81	0.27	18.76	103.23	71.69	31.55	25.89	0.96	0.64	0.59	1.25										

	Dolimitic siltstone	F7-17	3209.1	11.17	24.29	2.88	11.62	2.59	0.53	2.37	0.41	2.35	0.52	1.4	0.22	1.39	0.21	14.52	76.45	53.07	23.39	27.79	0.99	0.59	0.63	1.03
	Dolomite mudstone	F7-18	3210.1	26.42	48.67	7.37	32.94	8.25	1.26	8.14	1.43	8.35	1.92	5.01	0.79	4.44	0.62	51.74	207.34	124.9	82.44	26.94	0.8	0.44	0.47	1.11
	Dolomite mudstone	F7-19	3218.6	31.3	59.79	7.69	30.41	5.11	1	3.91	0.63	3.5	0.85	2.53	0.48	3.24	0.52	22.53	173.5	135.31	38.2	26.45	0.89	0.71	0.89	0.73
	Dolomite mudstone	F7-20	3220.5	16.5	37.54	4.83	20.94	5.18	1.01	5.03	0.87	4.95	1.11	2.97	0.48	2.96	0.43	29.92	134.73	86.01	48.72	27	0.97	0.41	0.46	1.03
	Dolimitic siltstone	F7-21	3222.3	6.55	15.58	1.96	7.86	1.66	0.38	1.59	0.28	1.59	0.35	0.94	0.15	0.97	0.14	9.98	49.99	34	15.99	28.44	1	0.5	0.57	0.99
	Dolimitic siltstone	F7-22	3225.8	7.29	16.89	2.22	9.38	2.07	0.45	1.83	0.3	1.68	0.39	1.12	0.19	1.3	0.19	10.96	56.29	38.31	17.97	27.93	0.97	0.41	0.51	0.85
	Dolimitic siltstone	F7-24	3231.3	8.08	18.18	2.31	9.89	2.71	0.75	2.57	0.44	2.46	0.53	1.46	0.25	1.6	0.24	13.73	65.19	41.91	23.28	25.76	0.97	0.37	0.43	0.97
	Dolimitic siltstone	F7-25	3233.1	7.66	16.19	2.03	8.13	2.02	0.51	1.97	0.35	1.93	0.43	1.12	0.18	1.09	0.16	10.46	54.23	36.54	17.69	24.58	0.95	0.52	0.55	1.09
	Dolimitic siltstone	F7-26	3234.2	15.09	33.31	4.26	17.95	4.65	1.08	4.31	0.75	4.16	0.94	2.52	0.4	2.42	0.35	23.28	115.46	76.34	39.12	24.66	0.96	0.46	0.47	1.08
	Dolimitic siltstone	F7-27	3236.7	7.52	16.46	2.11	9.27	2.69	0.65	2.47	0.41	2.32	0.53	1.46	0.23	1.41	0.2	13.89	61.63	38.71	22.92	26.14	0.95	0.39	0.41	1.06
	Dolimitic siltstone	F7-28	3238.4	8.59	17.34	2.07	8.04	1.95	0.5	1.92	0.34	1.86	0.4	1.08	0.18	1.09	0.16	9.98	55.51	38.49	17.01	24.68	0.95	0.58	0.64	1.06
	Dolomite mudstone	F7-29	3243	23.87	46.75	5.51	23.67	5.52	0.84	2.61	0.36	1.6	0.35	0.98	0.16	1.13	0.17	9.08	122.59	106.15	16.43	26.28	0.94	1.56	0.63	1.39
	Dolomite mudstone	F7-30	3244.7	9.19	17.14	1.95	7.99	2.73	0.83	3.53	0.56	2.83	0.55	1.29	0.19	1.14	0.17	12.84	62.9	39.82	23.08	23.37	0.93	0.6	0.49	1.88
P <sub>1f2</sub>	Dolomite mudstone	F7-31	3248.5	15.28	33.03	4.05	16.65	4.04	0.91	3.44	0.58	3.27	0.82	2.67	0.52	3.54	0.51	23.43	112.75	73.97	38.78	28.69	0.97	0.32	0.55	0.59
	Dolomite mudstone	F7-32	3251	12.82	26	2.93	9.91	1.36	0.27	1.1	0.2	1.09	0.24	0.72	0.13	0.86	0.14	6.79	64.56	53.3	11.26	27.79	0.98	1.1	1.37	0.77

Dolimitic siltstone	F7-33	3315	10.63	23.44	2.76	11.67	2.79	0.72	2.85	0.5	2.84	0.62	1.63	0.24	1.29	0.19	16.33	78.49	52	26.49	26.15	1	0.61	0.55	1.33
Dolimitic siltstone	F7-34	3365.3	4.03	8.94	1.05	4.11	1.16	0.3	1.31	0.25	1.53	0.35	1.02	0.16	0.99	0.14	8.34	33.7	19.6	14.1	23.57	1	0.3	0.5	0.81
Dolimitic siltstone	F7-35	3461.2	25.44	38.26	4.37	19.23	6.98	1.82	8.59	1.51	8.36	1.7	3.56	0.37	1.71	0.21	36.06	158.16	96.09	62.07	21.17	0.84	1.1	0.53	3.04
Tuffaceous mudstone	F7-36	3462	13.74	27.99	3.21	12.11	2.29	0.5	1.84	0.28	1.33	0.29	0.8	0.13	0.84	0.13	7.34	72.81	59.84	12.98	25.75	0.97	1.2	0.87	1.32
Tuffaceous mudstone	F7-37	3463.1	26.99	40.59	4.61	20.31	7.21	1.92	8.85	1.55	8.75	1.75	3.69	0.38	1.73	0.22	36.82	165.35	101.62	63.73	21.09	0.84	1.15	0.54	3.1
Dolomite with flint band	F7-38	3464.6	9.66	19.99	2.2	8.29	1.67	0.4	1.54	0.25	1.37	0.3	0.82	0.14	0.91	0.14	7.45	55.13	42.21	12.92	25.13	1	0.79	0.84	1.03
Dolomite with flint band	F7-39	3471.7	13.76	32.39	3.72	13.11	2.5	0.58	2.28	0.39	2.04	0.44	1.15	0.2	1.26	0.2	11.74	85.74	66.05	19.69	26.9	1.04	0.8	0.8	1.09
Dolimitic siltstone	F7-40	3477.8	9.95	22.22	2.71	10.72	2.15	0.44	1.82	0.31	1.77	0.41	1.21	0.23	1.71	0.28	10.99	66.9	48.19	18.72	26.87	0.99	0.43	0.67	0.64
Dolomite with flint band	F7-41	3521.2	9.6	19.78	2.4	9.2	1.76	0.35	1.54	0.27	1.57	0.38	1.18	0.24	1.76	0.29	10.72	61.04	43.1	17.95	28.55	0.95	0.4	0.79	0.53
Dolimitic siltstone	F7-43	3550.2	11.49	23.82	2.97	13.1	4.03	1.09	4.85	0.85	4.93	1.07	2.64	0.34	1.75	0.23	23.84	97.01	56.51	40.5	22.22	0.94	0.48	0.41	1.68
Dolimitic siltstone	F7-44	3554.1	13.28	27.1	3.21	12.17	1.66	0.28	1.06	0.17	0.74	0.18	0.57	0.1	0.75	0.12	5.01	66.42	57.71	8.71	28.07	0.96	1.3	1.16	0.86
Dolimitic siltstone	F7-45	3569.4	6.97	15.92	1.93	7.57	1.56	0.37	1.34	0.23	1.24	0.27	0.84	0.15	0.98	0.15	8.12	47.65	34.32	13.32	29.59	1	0.52	0.65	0.82
Dolimitic siltstone	F7-46	3572.4	8.64	17.54	1.88	6.99	1.21	0.28	0.98	0.17	0.96	0.23	0.76	0.17	1.37	0.22	6.72	48.11	36.54	11.57	29.6	1	0.47	1.04	0.43
Dolimitic siltstone	F7-47	3636.7	6.41	13.08	1.5	5.8	1.66	0.52	2.88	0.64	5	1.4	5.14	1.07	6.33	0.79	38.32	90.54	28.96	61.58	27.29	0.97	0.07	0.56	0.28
Dolimitic siltstone	F7-48	3670.9	11.25	23.93	2.8	11.04	2.33	0.54	2.17	0.37	2.01	0.43	1.21	0.21	1.37	0.21	11.99	71.85	51.89	19.96	27.87	0.98	0.61	0.7	0.96

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	Dolimitic siltstone	F7-49	3673.6	8.02	17.8	2.15	8.29	1.47	0.28	1.1	0.17	0.93	0.22	0.68	0.12	0.77	0.12	6.22	48.33	38.01	10.33	28.05	0.99	0.77	0.79	0.87
	Dolimitic siltstone	F7-50	3674.6	6.88	15.36	1.87	7.75	1.61	0.29	1.03	0.15	0.68	0.14	0.42	0.07	0.49	0.08	4.01	40.83	33.76	7.07	27.9	0.99	1.04	0.62	1.27
P <sub>1f1</sub>	Dolimitic siltstone	F7-51	3677.1	9.07	19.2	2.26	9.1	1.89	0.38	1.5	0.23	1.21	0.25	0.76	0.15	1.14	0.2	7.15	54.49	41.9	12.59	28.48	0.98	0.59	0.7	0.8

LREE=La+Ce+Pr+Nd+Sm+Eu; HREE=Gd+Tb+Dy+Ho+Er+Tm+Yb+Lu+ Y; Ce/Ce \* = CeN/(LaN\*PrN)1/2, where REEN represent the value normalized by PAA

Supplementary Table S2. Concentrations of major elements and TOC in samples from Fengcheng Formation in Mahu Sag

For-	lithlogy	Sam-	De-	Na <sub>2</sub> O	MgO	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	CaO	TiO <sub>2</sub>	MnO	Fe <sub>2</sub> O <sub>3</sub>	LOI	TOC
matin		ples	pth(m)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
	Pelitic siltstone	F7-1	3069.3	2.01	3.89	14.04	58.76	0.19	3.35	3.76	0.61	0.108	7.03	5.28	0.02
	Dolomite mudstone	F7-2	3102.8	3.94	2.2	13.91	70.07	0.09	2.09	1.43	0.39	0.054	3.14	2.84	0.02
	Dolomite mudstone	F7-3	3124.1	3.47	3.32	15.59	61.99	0.11	2.27	3.16	0.41	0.095	5.2	4.44	0.01
	Dolomite mudstone	F7-4	3151.76	1.72	5.72	14.37	57.18	0.15	3.16	3.91	0.58	0.099	6.4	6.58	null
	Dolomite mudstone	F7-5	3151.9	0.31	2.48	2.98	79.15	0.06	0.38	6.51	0.16	0.05	1.54	8.18	2.03
	Dolomite mudstone	F7-6	3155.57	1.81	8.08	6.62	55.32	0.03	3.52	8.23	0.26	0.074	2.71	14.18	0.84
	Dolomite mudstone	F7-7	3156.5	1.5	4.78	11.73	60.34	0.1	2.78	5.39	0.43	0.087	4.56	9.07	0.56

P1f3	Tuffaceous mudstone	F7-8	3158.8	1.01	6.1	9.41	53.94	0.09	2.27	10.43	0.43	0.136	4.32	12.64	0.06
	Tuffaceous mudstone	F7-9	3173.5	1.43	5.04	13.53	59.63	0.14	3.78	3.16	0.59	0.07	5.56	6.42	1.93
	Tuffaceous mudstone	F7-10	3176.2	3.61	3.89	14.13	59.34	0.17	3.27	3.4	0.57	0.117	6.01	5.56	null
	Tuffaceous mudstone	F7-11	3179.24	1.2	7.18	12.07	55.11	0.11	2.9	5.14	0.45	0.133	7.62	8.69	0.02
	Tuffaceous mudstone	F7-12	3180.9	1.62	4.18	13.55	56.74	0.15	3.72	5.54	0.52	0.095	5.39	7.86	0.04
	Dolimitic siltstone	F7-13	3182.9	1.77	4.98	13.05	54.58	0.12	3.06	7.7	0.49	0.114	4.61	9.01	0.02
	Dolimitic siltstone	F7-14	3186.84	0.5	5.21	3.74	68.19	0.02	1.23	8.06	0.13	0.094	1.69	12.03	0.52
	Dolimitic siltstone	F7-15	3189.29	1.07	7.1	6.79	59.1	0.06	1.94	7.94	0.29	0.077	3.25	13.28	0.85
	Dolimitic siltstone	F7-16	3198.35	1.53	2.81	9.59	58.83	0.07	3.48	7.31	0.34	0.062	3.49	12.55	null
	Dolimitic siltstone	F7-17	3209.1	1.24	5.4	9.79	60.2	0.07	3.25	6.28	0.35	0.088	3.96	10.71	1.37
	Dolomite mudstone	F7-18	3210.17	1.82	4.08	12.59	52.6	0.13	3.51	8.71	0.42	0.123	5.75	9.98	0.07
	Dolomite mudstone	F7-19	3218.6	6	3.06	13.6	57.29	0.09	2.35	3.89	0.54	0.078	5.17	6.93	0.02
P1f3	Dolomite mudstone	F7-20	3220.55	4.49	4.02	12.78	58	0.1	4.44	3.24	0.61	0.133	5.09	7.6	1.29
	Dolimitic siltstone	F7-21	3222.3	1.75	4.71	4.96	67.56	0.03	1.93	6.32	0.21	0.067	2.45	11.1	0.9
	Dolimitic siltstone	F7-22	3225.8	1.94	3.13	6.69	67.42	0.03	3.02	3.78	0.25	0.055	3.07	10.8	3.43

Dolimitic siltstone	F7-23	3228.3	5.21	1.39	13.44	64.27	0.05	4	2.04	0.22	0.054	3.56	6.92	0.44
Dolimitic siltstone	F7-24	3231.36	2.44	5.02	8.98	56.76	0.05	4.49	6.32	0.34	0.084	3.25	13.06	1.5
Dolimitic siltstone	F7-25	3233.1	2.59	5.79	10.92	59.23	0.06	5.96	3.29	0.44	0.071	3.81	8.82	0.27
Dolimitic siltstone	F7-26	3234.25	2.17	4.28	9.49	57.2	0.06	5.42	6.79	0.38	0.122	3.9	10.64	null
Dolimitic siltstone	F7-27	3236.7	2.61	1.24	11.87	68.62	0.07	6.58	1.67	0.53	0.056	3.08	4.41	0.46
Dolimitic siltstone	F7-28	3238.45	2.56	5.34	11.17	60.4	0.06	6.38	3.13	0.44	0.074	3.77	7.36	0.19
Dolomite mudstone	F7-29	3243	1.54	6.68	7.75	60.51	0.02	4.94	5.66	0.31	0.069	2.83	10.45	0.3
Dolomite mudstone	F7-30	3244.7	1.13	6.37	6.62	59.34	0.03	4.36	7.5	0.28	0.078	2.84	12.3	0.19
Dolomite mudstone	F7-31	3248.5	2.7	1.43	10.5	69.2	0.22	5.61	2.76	0.29	0.073	2.67	4.67	null
Dolomite mudstone	F7-32	3251.05	1.26	8.44	5.34	60.61	0.01	3.16	6.65	0.21	0.053	2.54	12.6	0.26
Dolimitic siltstone	F7-33	3315	3.34	5.39	11.22	53.31	0.06	5.44	6.35	0.25	0.106	3.95	9.76	0.03
Dolimitic siltstone	F7-34	3365.3	2.38	6.16	10.98	60.69	0.05	6.59	2.1	0.43	0.05	4.01	6.12	0.3
Dolimitic siltstone	F7-35	3461.2	1.76	6.13	7.88	58.61	0.04	4.73	6.62	0.24	0.097	3.19	11.67	0.05
Tuffaceous mudstone	F7-36	3462	2.72	8.2	10.14	53.6	0.04	5.18	5.47	0.3	0.087	3.64	10.34	0.56
Dolomite with flint band	F7-38	3463.1	2.47	6	10.49	56.9	0.03	5.85	4.63	0.37	0.09	4.02	8.69	0.34

P <sub>1f2</sub>	Dolomite with flint band	F7-39	3464.61	1.87	7.23	8.75	49.78	0.03	5.24	7.93	0.4	0.152	4.26	15.04	1.73
	Dolimitic siltstone	F7-40	3471.7	2.28	10.06	7.67	48.2	0.01	3.68	9.17	0.31	0.096	3.45	15.8	0.53
	Dolomite with flint band	F7-41	3477.8	2.62	11.74	8.13	41.67	0.01	3.85	10.86	0.29	0.096	3.43	17.81	0.76
	Dolimitic siltstone	F7-42	3521.2	1.92	10.09	5.9	49.65	0.01	2.72	10.36	0.3	0.082	3.31	15.7	0.63
	Dolimitic siltstone	F7-43	3529.5	0.72	3.87	6.05	64.17	0.03	4.53	8.25	0.21	0.07	2.44	10.54	0.61
	Dolimitic siltstone	F7-44	3550.2	1.53	9.06	8.89	54.21	0.02	6.8	5.24	0.37	0.065	3.1	10.37	0.27
	Dolimitic siltstone	F7-45	3554.1	1.1	11.2	6.78	42.48	0.04	5.13	13.07	0.18	0.097	2.24	17.83	0.26
	Dolimitic siltstone	F7-46	3569.4	2.31	7.91	7.58	56.88	0.02	3.62	6.86	0.25	0.096	3.03	12.04	0.61
	Dolimitic siltstone	F7-47	3572.45	0.94	3.89	2.82	75.73	0.01	1.25	5.68	0.12	0.054	1.68	9.07	0.2
P <sub>1f1</sub>	Dolimitic siltstone	F7-48	3636.7	1.1	5.63	8.76	50.78	0.05	6.64	9.57	0.33	0.1	3.69	13.11	0.27
	Dolimitic siltstone	F7-49	3670.9	1.98	13.17	4.89	52.01	0.01	3.6	8.02	0.2	0.057	2	15.32	0.63
	Dolimitic siltstone	F7-50	3673.6	4.55	11.06	3.85	55.85	0	2.65	5.37	0.18	0.048	1.81	13.58	0.73
	Dolimitic siltstone	F7-51	3674.6	2.1	3.23	5.88	70	0.06	2.18	4.59	0.22	0.05	3.05	8.94	0.15
	Silicalite	F7-52	3677.1	0.9	9.4	4.87	62.58	0.01	3.83	6.38	0.22	0.048	1.93	11.49	0.66

Silicalite	F7-53	3690	1.75	12.55	8.49	46.88	0.01	6.35	7.64	0.28	0.064	2.93	13.6	0.27
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Supplementary Table S3. Concentrations of trace elements in samples from Fengcheng Formation in Mahu Sag

Formation	lithology	Samples	Depth(m)	Sc	V	Cr	Ni	Cu	Rb	Sr	Zr	Mo	Ba	Th
				(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
	Pelitic siltstone	F7-1	3069.3	15.97	100.34	84.62	103.67	34.12	77.88	210.34	192.22	1.1	189.26	5.46
	Dolomite mudstone	F7-2	3102.8	9.62	620.87	108.19	38.65	23.17	47.46	194.67	185.66	2.49	485.79	5.42
	Dolomite mudstone	F7-3	3124.1	9.71	81.01	55.35	49.64	34.55	47.01	287.14	154.78	2.88	372.51	4.6
	Dolomite mudstone	F7-4	3151.76	16.81	123.93	63.22	70.35	47.79	74.65	237.89	179.89	0.71	253.17	5.27
	Dolomite mudstone	F7-5	3151.9	4.74	55.5	14.75	17.34	31.17	8.78	192.34	71.54	1.22	98.07	2.16
	Dolomite mudstone	F7-6	3155.57	6.06	73.63	26.41	25.72	32.34	39.49	504.6	67.46	69.14	159.88	1.2
	Dolomite mudstone	F7-7	3156.5	9.45	156.78	53.76	38.44	61.42	54.51	204.38	118.02	2.38	253.65	3.26
	Tuffaceous mudstone	F7-8	3158.8	12.95	141.51	46.73	39.78	33.06	48.07	241.82	119.03	0.68	221.17	3.98
	Tuffaceous mudstone	F7-9	3173.5	12.83	148.63	61.62	52.65	72.95	86.43	197.95	175.91	0.41	200.44	4.69
	Tuffaceous mudstone	F7-10	3176.2	11.68	109.63	79.07	59.46	59.55	67.17	205.58	148.45	0.34	222.66	4.41



P <sub>1f</sub>	Tuffaceous mudstone	F7-11	3179.24	15.39	103.6	109.57	153.97	49.55	57.17	163.06	132.82	2.54	182.71	4.2
	Tuffaceous mudstone	F7-12	3180.9	10.25	106.37	74.17	98.24	68.93	70.6	195.46	151.22	5.12	254.95	4.09
	Dolimitic siltstone	F7-13	3182.9	9.86	103.94	69.07	53.44	41.27	63.76	302.25	171.64	1.62	256.53	4.25
	Dolimitic siltstone	F7-14	3186.84	8.95	77.89	17.32	18.77	17.98	20.59	354.32	74.99	35.95	223.41	1.65
	Dolimitic siltstone	F7-15	3189.29	7.17	131.19	35.59	39.03	47.25	34.59	328.78	91.27	100.24	183.65	1.69
	Dolimitic siltstone	F7-16	3198.35	7.56	147.68	40.53	41.5	84.91	60.05	307.44	117.1	26.48	263.57	3.58
	Dolimitic siltstone	F7-17	3209.1	7.49	132.32	47.44	31.11	47.65	50.05	211.5	98.54	54.82	192.21	2.88
	Dolomite mudstone	F7-18	3210.17	10.09	81.99	46.36	63.94	47.37	66.88	365.63	164.06	63.92	317.52	5.74
	Dolomite mudstone	F7-19	3218.6	14.59	109.48	90.75	51.49	43.16	38.19	449.89	142.81	0.77	296.03	6.42
	Dolomite mudstone	F7-20	3220.55	13.62	120.45	65.58	51.09	48.98	58.2	290.92	157.43	2.73	238.4	4.6
	Dolimitic siltstone	F7-21	3222.3	6.97	76.17	25.47	25	28.14	23	509.15	70.76	17.28	167.51	1.22
	Dolimitic siltstone	F7-22	3225.8	8.46	118.67	33.71	32.4	58.2	33.33	262.79	68.76	31.74	247.6	1.93
	Dolimitic siltstone	F7-23	3228.3	6.72	48.35	27.47	32.56	32.55	31.67	260.68	68.18	11.96	299.54	2.33
	Dolimitic siltstone	F7-24	3231.36	5.95	100.25	41.75	27.54	59.3	41.49	384.95	101.65	26.08	475.35	2.47
	Dolimitic siltstone	F7-25	3233.1	6.4	88.62	57.37	27.83	28.82	64.19	357.62	96.85	15.3	318.06	1.31

Pif	Dolimitic siltstone	F7-26	3234.25	8.21	90.31	61.97	28.14	24.83	39.74	470.97	104.48	20.17	189.24	2.17
	Dolimitic siltstone	F7-27	3236.7	4.01	49.86	51.05	35.34	35.92	50.62	137.03	128.79	22.76	204.72	1.67
	Dolimitic siltstone	F7-28	3238.45	5.87	88.86	56.43	29.07	30.18	64.34	346.58	100.26	17.33	265.52	1.24
	Dolomite mudstone	F7-29	3243	4.93	75.57	34.37	20.16	32.85	57.72	451.49	96.56	26.34	179.29	3.6
	Dolomite mudstone	F7-30	3244.7	6.65	74.86	36.85	27.79	33.02	37.25	450.87	74.87	41.73	180.8	0.99
	Dolomite mudstone	F7-31	3248.5	4.4	50.19	29.36	20.27	22.25	33.27	314.14	56.09	5.81	90.55	6.14
	Dolomite mudstone	F7-32	3251.05	5.11	72.7	26.31	21.77	29.95	46.02	451.09	51.39	48.12	141.14	0.89
	Dolimitic siltstone	F7-33	3315	6.9	96.97	30.14	28.43	23.38	45.62	589.95	85.12	13.34	548.11	1.33
	Dolimitic siltstone	F7-34	3365.3	4.42	94.76	54.14	31.08	37.4	79.75	145.35	110.44	18.49	232.14	1.03
	Dolimitic siltstone	F7-35	3461.2	6.72	85.03	45.15	29.74	23.48	38.43	472.83	73.26	27.51	294.99	1.3
	Tuffaceous mudstone	F7-36	3462	6.03	88.51	36.04	25.74	27.77	56.49	410.35	85.58	26.71	366.96	0.9
	Dolomite with flint band	F7-38	3463.1	7.92	107.81	43.96	33.1	34.45	66.04	359.04	102.01	21.7	270.07	0.92
	Dolomite with flint band	F7-39	3464.61	10.4	128.78	42.45	35.02	51.61	60.43	538.25	79.78	21.38	290.25	1.09
	Dolimitic siltstone	F7-40	3471.7	9.64	87.8	36.3	29.57	30.54	63.7	544.09	57.51	32.64	200.08	0.92
	Dolomite with flint band	F7-41	3477.8	8.74	83.66	34.1	29.82	30.03	66.65	622.65	57.47	11.04	223.52	1.07

	Dolimitic siltstone	F7-42	3521.2	5.62	78.65	30.53	28.32	29.42	47.26	696.37	52.84	37.63	216.17	0.71
	Dolimitic siltstone	F7-43	3529.5	6.76	67.88	28.12	21.84	40.17	39.79	550.24	56.77	15.61	419.78	2.74
	Dolimitic siltstone	F7-44	3550.2	6.95	98.48	39.85	27.44	26.62	73.51	395.86	299.49	18.56	94.39	1.13
	Dolimitic siltstone	F7-45	3554.1	6.08	92.01	30.33	26.84	17.5	41.77	753.74	78.13	24.24	240.47	0.91
	Dolimitic siltstone	F7-46	3569.4	7.48	87.94	34.85	28.55	26.5	59.68	441.88	69.99	18.47	304.93	0.89
	Dolimitic siltstone	F7-47	3572.45	7.73	76.98	15.61	13.9	13.64	14.73	341.15	25.32	10.4	213.91	1.05
	Dolimitic siltstone	F7-48	3636.7	8.41	98.37	42.74	37.52	40.54	59.78	583.82	76.06	28.26	241.27	1.98
P <sub>1f1</sub>	Dolimitic siltstone	F7-49	3670.9	7.6	63.74	26.1	22.65	17.21	56.85	600.27	61.13	7.93	116.62	1.1
	Dolimitic siltstone	F7-50	3673.6	9.1	58.14	21.6	20.89	14.62	52.5	423.62	57.79	5.22	335.93	0.78
	Dolimitic siltstone	F7-51	3674.6	4.6	58.46	29.39	25.98	35.81	24.54	390.69	156.78	26.91	153.23	3.22
	Silicalite	F7-52	3677.1	4.9	68.82	28.29	22.12	16.03	59.84	427.63	112.18	11.09	135.07	0.54
	Silicalite	F7-53	3690	7.37	93.53	45.95	32.07	23.38	73.74	1011.32	219.86	22.22	230.54	3.39