Table S1. Trace element data of shale samples from Wufeng Formation-Longmaxi Formation in this study.

No.	Well	Depth	Lithology	Formation	Graptolite zone	Sample no.	V	Cr	Co	Ni	Cu	Zn	Ga	Rb	Sr	Nb	Cs	Ba	Ta	Pb	Th	U	Zr	Hf	Sc	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Th/Sc	Zr/Sc	La/Th	Co/Th	La/Sc	La/Yb	La/Sm	Tb/Yb	Ta/La	∑REE	LREE	HREE	LREE/HREE	LaN/YbN	Eu/Eu*
1	Y105	1650.5	Shale	Longmaxi	LM6	Y105-1	155.0	90.9	18.4	70.6	44.3	106.0	23.5	213.0	129.0	16.1	14.1	846.0	1.3	25.4	19.4	6.1	96.1	2.7	15.5	24.0	46.9	88.4	10.3	37.6	6.23	1.12	5.00	0.77	4.27	0.84	2.35	0.34	2.15	0.32	1.25	6.20	2.42	0.95	3.03	21.81	7.53	0.36	0.03	206.59	190.55	16.04	11.88	15.65	0.59
2	Y105	1655.1	Shale	Longmaxi	LM6	Y105-11	132.0	69.1	14.4	52.6	42.5	120.0	18.0	177.0	136.0	13.6	11.9	741.0	1.1	20.9	17.4	6.4	88.5	2.5	11.8	23.3	41.3	72.6	8.66	31.6	5.5	1.02	4.64	0.71	4.00	0.80	2.25	0.33	2.13	0.31	1.47	7.50	2.37	0.83	3.50	19.39	7.51	0.33	0.03	175.84	160.68	15.16	10.60	13.91	0.60
3	Y105	1658.4	Shale	Longmaxi	LM6	Y105-18	166.0	71.7	16.4	67.0	42.4	83.2	18.5	178.0	175.0	14.6	11.8	763.0	1.1	27.2	16.3	8.7	106.0	2.7	12.3	25.4	41.80	76.20	9.00	33.60	5.93	1.13	5.17	0.77	4.31	0.87	2.48	0.35	2.28	0.33	1.33	8.62	2.56	1.01	3.40	18.33	7.05	0.34	0.03	184.23	167.66	16.57	10.12	13.15	0.61
4	YH3-8	3742.4	Shale	Longmaxi	LM6	YH-1	128.3	76.2	16.0	53.3	54.2	104.9	19.9	95.7	107.0	14.0	9.9	2564.0	3.3	24.6	18.0	8.6	93.5	6.7	12.2	21.3	35.40	73.44	8.21	29.48	5.53	1.33	4.85	0.83	4.03	0.91	2.44	0.44	2.30	0.43	1.48	7.65	1.96	0.89	2.90	15.42	6.41	0.36	0.09	169.61	153.38	16.23	9.45	11.06	0.77
5	YH3-8	3744.4	Shale	Longmaxi	LM6	YH-10	163.5	73.8	15.3	79.8	59.1	206.5	19.3	49.0	96.7	12.9	8.0	2490.0	1.2	17.7	14.1	9.8	90.3	2.9	10.6	21.6	30.67	68.36	7.52	27.81	5.36	1.26	4.89	0.75	4.07	0.86	2.43	0.40	2.27	0.37	1.33	8.53	2.18	1.09	2.90	13.53	5.73	0.33	0.04	157.00	140.97	16.03	8.80	9.70	0.74
6	YH3-8	3746.9	Shale	Longmaxi	LM6	YH-30	120.1	68.0	15.1	51.1	53.4	107.9	17.9	35.4	89.2	11.7	7.0	2221.0	1.0	21.7	12.1	6.7	78.5	2.5	9.5	19.8	25.84	60.56	6.47	23.92	4.79	1.07	4.37	0.67	3.74	0.77	2.21	0.33	2.11	0.32	1.28	8.27	2.13	1.24	2.72	12.25	5.39	0.32	0.04	137.17	122.66	14.51	8.45	8.78	0.70
7	YH3-8	3747.3	Shale	Longmaxi	LM6	YH-33	144.0	76.0	15.2	72.9	51.8	127.6	19.9	61.2	100.9	13.1	8.8	2603.0	1.0	20.5	14.0	7.1	84.8	2.6	11.1	20.4	34.06	72.92	7.93	28.83	5.25	1.16	4.65	0.69	3.84	0.79	2.30	0.35	2.12	0.33	1.27	7.67	2.43	1.08	3.08	16.07	6.49	0.32	0.03	165.22	150.15	15.07	9.96	11.53	0.70
8	XD2	2052.5	Shale	Longmaxi	LM5	XD-B54	188.0	57.9	14.2	97.3	70.6	33.9	18.0	166.0	116.0	17.7	11.3	3898.0	0.9	24.3	14.5	19.8	116.0	2.8	11.1	30.8	53.80	105.0	13.30	47.3	9.20	1.68	8.20	1.13	6.24	1.16	3.54	0.47	3.11	0.46	1.31	10.45	3.71	0.98	4.85	17.30	5.85	0.36	0.02	254.59	230.28	24.31	9.47	12.41	0.58
9	XD2	2055.3	Shale	Longmaxi	LM5	XD-B50	160.0	41.9	9.6	77.8	48.1	23.3	12.0	115.0	238.0	9.4	6.8	3238.0	0.7	14.5	12.1	14.9	74.7	2.7	8.8	25.6	30.90	62.4	7.84	28.4	5.71	1.06	5.25	0.78	4.59	0.89	2.74	0.37	2.40	0.34	1.38	8.49	2.55	0.79	3.51	12.88	5.41	0.33	0.02	153.67	136.31	17.36	7.85	9.24	0.58
10	Y105	1664.1	Shale	Longmaxi	LM5	Y105-31	157.0	59.7	10.4	43.7	17.3	26.6	17.5	170.0	167.0	11.9	11.9	762.0	1.1	20.0	14.4	8.6	91.8	2.9	11.3	23.8	37.50	70.10	8.23	30.80	5.58	1.03	4.74	0.71	4.13	0.83	2.30	0.33	2.15	0.31	1.27	8.12	2.60	0.72	3.32	17.44	6.72	0.33	0.03	168.74	153.24	15.50	9.89	12.51	0.60
11	Y105	1668.1	Shale	Longmaxi	LM5	Y105-40	207.0	68.9	12.8	83.5	45.6	259.0	15.2	139.0	177.0	12.0	9.2	631.0	1.0	20.8	13.6	9.3	72.9	2.0	10.2	25.2	36.30	66.50	7.99	30.20	5.60	1.07	4.88	0.73	4.16	0.82	2.31	0.33	2.08	0.31	1.33	7.15	2.67	0.94	3.56	17.45	6.48	0.35	0.03	163.28	147.66	15.62	9.45	12.52	0.61
12	Y105	1673.1	Shale	Longmaxi	LM5	Y105-52	174.0	61.5	12.6	68.3	36.2	31.0	14.4	125.0	162.0	12.8	8.6	607.0	0.8	19.8	11.9	9.4	85.4	2.0	9.4	25.8	39.00	71.70	8.41	31.30	5.70	1.05	5.06	0.74	4.21	0.85	2.45	0.36	2.39	0.36	1.26	9.06	3.28	1.06	4.14	16.32	6.84	0.31	0.02	173.58	157.16	16.42	9.57	11.70	0.59
13	YH3-8	3749.4	Shale	Longmaxi	LM5	YH-44	132.4	73.6	15.0	56.7	53.1	72.5	20.9	97.2	124.5	16.7	10.8	2734.0	1.2	25.1	15.7	6.8	119.9	3.6	12.2	22.5	38.71	81.57	8.91	32.23	5.74	1.27	4.98	0.73	4.22	0.87	2.57	0.38	2.43	0.37	1.29	9.86	2.47	0.96	3.18	15.90	6.75	0.30	0.03	184.98	168.43	16.55	10.18	11.41	0.71
14	YH3-8	3753.4	Shale	Longmaxi	LM5	YH-67	132.7	68.2	14.5	62.5	50.6	99.7	18.2	103.8	116.5	12.3	10.4	2459.0	0.9	22.7	14.3	6.1	104.2	3.1	11.1	24.6	34.61	69.50	7.72	27.77	5.20	1.14	4.77	0.73	4.32	0.92	2.65	0.39	2.45	0.37	1.29	9.43	2.42	1.02	3.13	14.12	6.65	0.30	0.03	162.55	145.94	16.61	8.79	10.12	0.68
15	YH3-8	3757.1	Shale	Longmaxi	LM5	YH-85	136.5	68.8	13.7	70.2	42.4	91.0	18.1	91.2	136.3	13.2	10.2	2151.0	1.0	20.0	14.9	9.3	174.8	5.0	10.1	25.9	35.42	75.99	8.41	31.22	6.07	1.27	5.61	0.82	4.55	0.94	2.72	0.39	2.50	0.38	1.47	17.29	2.38	0.92	3.50	14.17	5.84	0.33	0.03	176.28	158.38	17.91	8.84	10.16	0.65
16	YH3-8	3761.7	Shale	Longmaxi	LM5	YH-117	26.5	23.0	4.0	13.8	12.0	22.5	5.0	35.2	338.2	3.9	2.7	880.9	0.3	6.6	4.5	1.8	43.6	1.3	3.5	20.5	18.24	35.78	4.39	17.81	4.31	1.18	4.36	0.60	3.33	0.63	1.71	0.23	1.36	0.19	1.28	12.48	4.07	0.89	5.22	13.44	4.23	0.45	0.02	94.12	81.71	12.41	6.58	9.64	0.82
17	YH3-8	3766.0	Shale	Longmaxi	LM5	YH-142	133.5	62.1	12.4	72.2	40.9	76.2	16.7	101.8	147.4	12.7	9.1	2089.0	0.9	17.6	14.5	7.8	178.3	5.1	9.4	26.7	35.07	72.03	8.16	30.02	5.84	1.25	5.32	0.79	4.58	0.94	2.73	0.40	2.55	0.38	1.54	18.97	2.42	0.86	3.73	13.73	6.01	0.31	0.03	170.06	152.36	17.69	8.61	9.85	0.67
18	Z204	2753.4	Shale	Longmaxi	LM4	Z4-23	170.7	97.7	17.0	63.4	52.9	119.5	25.3	188.8	135.5	14.0	12.5	1107.3	1.0	46.7	17.6	6.5	107.8	3.6	17.4	20.2	47.61	79.62	9.88	34.80	5.72	1.00	4.49	0.74	3.79	0.84	2.50	0.47	2.93	0.47	1.01	6.18	2.71	0.97	2.73	16.22	8.32	0.25	0.02	194.85	178.63	16.22	11.02	11.64	0.58
19	XD2	2058.6	Shale	Longmaxi	LM4	XD-B44	136.0	18.6	9.0	70.4	31.9	176.0	17.5	173.0	106.0	6.5	12.7	3470.0	1.8	47.3	34.3	13.1	172.0	10.1	7.8	15.4	6.90	13.2	1.84	7.2	1.66	0.50	1.63	0.32	2.35	0.55	2.02	0.31	2.14	0.30	4.40	22.05	0.20	0.26	0.88	3.22	4.16	0.15	0.26	40.92	31.30	9.62	3.25	2.31	0.92
20	XD2	2061.1	Shale	Longmaxi	LM4	XD-B41	150.0	26.7	6.0	63.2	27.8	104.0	7.6	73.6	280.0	5.6	4.3	1533.0	0.5	9.3	7.4	11.0	56.1	1.9	5.3	15.0	18.20	33.8	4.68	18.5	3.46	0.66	3.34	0.47	2.65	0.51	1.53	0.21	1.38	0.19	1.38	10.53	2.48	0.81	3.41	13.19	5.26	0.34	0.03	89.58	79.30	10.28	7.71	9.46	0.59
21	XD2	2062.6	Shale	Longmaxi	LM4	XD-B38	166.0	29.7	6.3	59.9	28.6	66.4	8.5	83.0	239.0	6.9	4.8	1640.0	0.5	10.5	8.4	11.7	67.4	2.4	5.5	14.1	18.10	33.4	4.52	17.3	3.17	0.60	2.99	0.43	2.51	0.49	1.48	0.21	1.30	0.20	1.52	12.19	2.15	0.75	3.27	13.92	5.71	0.33	0.03	86.70	77.09	9.61	8.02	9.99	0.59
22	Y105	1674.6	Shale	Longmaxi	LM4	Y105-58	183.0	62.7	12.9	65.8	43.2	81.1	17.3	159.0	155.0	12.5	11.0	726.0	1.0	20.1	15.4	8.0	93.2	2.7	10.5	25.0	37.40	69.80	8.24	30.10	5.62	1.01	4.68	0.72	4.12	0.85	2.41	0.35	2.21	0.32	1.47	8.88	2.43	0.84	3.56	16.92	6.65	0.33	0.03	167.83	152.17	15.66	9.72	12.14	0.59
23	Y105	1676.3	Shale	Longmaxi	LM4	Y105-64	165.0	68.8	15.0	86.4	44.7	79.6	16.2	153.0	172.0	12.3	10.3	669.0	1.0	25.4	14.1	9.9	76.6	2.2	10.4	22.8	36.20	66.80	7.78	28.90	5.28	1.01	4.45	0.68	3.78	0.76	2.12	0.30	1.94	0.28	1.36	7.37	2.57	1.06	3.48	18.66	6.86	0.35	0.03	160.29	145.97	14.32	10.19	13.38	0.62
24	Y105	1677.7	Shale	Longmaxi	LM4	Y105-69	151.0	61.5	16.1	81.6	44.8	70.5	15.6	143.0	178.0	12.2	10.2	657.0	0.9	27.1	13.6	11.2	77.9	2.2	10.2	23.8	36.50	65.50	7.93	29.50	5.49	1.08	4.81	0.73	3.97	0.79	2.19	0.31	1.97	0.29	1.33	7.64	2.68	1.18	3.58	18.53	6.65	0.37	0.03	161.06	146.00	15.06	9.70	13.29	0.63
25	Y105	1679.5	Shale	Longmaxi	LM4	Y105-75	196.0	62.6	15.3	88.2	53.3	160.0	15.4	139.0	181.0	12.8	9.7	632.0	1.0	19.5	13.5	11.6	85.2	2.3	9.9	25.4	35.40	66.50	7.96	30.20	5.65	1.10	4.88	0.74	4.16	0.83	2.30	0.34	2.08	0.31	1.37	8.61	2.62	1.13	3.58	17.02	6.27	0.36	0.03	162.45	146.81	15.64	9.39	12.21	0.63
26	Y105	1681.8	Shale	Longmaxi	LM4	Y105-82	167.0	70.9	14.6	96.6	51.1	94.3	16.0	145.0	154.0	12.4	10.4	671.0	1.0	24.3	14.0	11.6	85.4	2.6	10.1	23.7	33.90	61.20	7.34	27.50	4.96	0.98	4.36	0.67	3.82	0.79	2.19	0.32	2.01	0.30	1.39	8.46	2.42	1.04	3.36	16.87	6.83	0.33	0.03	150.34	135.88	14.46	9.40	12.10	0.63
27	YH3-8	3769.8	Shale	Longmaxi	LM4	YH-169	134.6	51.3	12.5	65.7	53.0	71.4	13.3	109.4	100.0	9.1	8.1	2105.0	0.6	20.5	10.1	8.4	74.2	2.0	8.7	22.9	30.13	58.72	6.90	25.70	5.23	1.13	4.86	0.71	4.01	0.79	2.26	0.31	2.00	0.29	1.16	8.52	2.97	1.23	3.46	15.10	5.76	0.36	0.02	143.05	127.81	15.24	8.39	10.83	0.67
28	YH3-8	3773.7	Shale	Longmaxi	LM4	YH-190	168.7	46.8	12.7	92.4	65.8	141.6	11.8	101.7	118.1	8.8	7.4	1902.0	0.6	19.4	9.5	15.7	81.8	2.2	8.0	31.1	34.52	64.70	7.54	28.47	5.64	1.32	5.77	0.83	4.78	0.98	2.82	0.39	2.47	0.37	1.18	10.23	3.65	1.34	4.32	13.96	6.12	0.34	0.02	160.60	142.19	18.41	7.72	10.02	0.70
29	YH3-8	3775.8	Shale	Longmaxi	LM4	YH-202	187.2	35.6	9.6	107.9	47.8	103.7	9.1	76.7	103.7	7.9	5.5	1833.0	0.5	17.6	8.0	12.7	72.9	1.8	5.7	21.1	25.53	47.13	5.46	19.62	3.74	0.82	3.69	0.55	3.32	0.70	2.09	0.31	2.03	0.30	1.41	12.79	3.18	1.20	4.48	12.57	6.82	0.27	0.02	115.29	102.30	12.99	7.88	9.02	0.67
30	Z204	3406.8	Shale	Longmaxi	LM2-3	Z4-8	796.5	67.6	13.3	189.2	68.1	164.3	14.7	97.2	152.7	11.1	7.0	698.5	0.7	37.3	13.2	73.1	63.4	1.8	8.4	26.2	31.73	50.74	6.69	26.83	5.85	1.09	5.24	0.91	4.54	0.98	2.72	0.49	2.94	0.46	1.57	7.56	2.41	1.01	3.78	10.79	5.42	0.31	0.02	141.21	122.93	18.29	6.72	7.74	0.59
31	XD2	2065.4	Shale	Longmaxi	LM2-3	XD-B35	167.0	26.8	5.7	63.1	24.0	71.2	7.6	72.9	319.0	5.5	4.0	1381.0	0.4	8.8	7.2	10.3	53.8	1.9	5.2	14.5	17.40	31.7	4.37	17	3.19	0.65	3.16	0.43	2.50	0.48	1.47	0.20	1.29	0.19	1.37	10.31	2.43	0.80	3.33	13.49	5.45	0.33	0.03	84.03	74.31	9.72	7.65	9.68	0.62
32	XD2	2067.8	Shale	Longmaxi	LM2-3	XD-B32	190.0	19.2	3.5	74.3	45.1	101.0	4.7	39.3	129.0	3.6	2.3	1283.0	0.3	5.8	4.3	12.5	35.1	1.2	3.6	13.2	12.20	22.7	3.25	12.4	2.4	0.50	2.42	0.36	2.18	0.43	1.31	0.18	1.15	0.17	1.21	9.78	2.81	0.81	3.40	10.61	5.08	0.31	0.02	61.65	53.45	8.20	6.52	7.61	0.63
33	Y105	1685.0	Shale	Longmaxi	LM2-3	Y105-92	235.0	64.2	14.0	90.8	53.6	139.0	15.4	137.0	174.0	11.8	9.7	692.0	0.9	24.2	13.4	13.8	79.2	2.2	10.1	26.6	36.80	65.50	7.98	30.40	5.62	1.11	5.15	0.75	4.29	0.89	2.44	0.35	2.27	0.33	1.33	7.84	2.75	1.04	3.64	16.21	6.55	0.33	0.02	163.89	147.41	16.48	8.95	11.63	0.62
34	Y105	1687.0	Shale	Longmaxi	LM2-3	Y105-98	235.0	58.8	12.9	117.0	49.0	149.0	17.0	144.0	157.0	21.1	11.0	653.0	2.1	22.4	13.7	20.7	112.0	3.2	9.6	27.7	45.00	84.50	10.20	38.20	6.80	1.27	5.79	0.83	4.56	0.92	2.59	0.37	2.37	0.35	1.43	11.67	3.28	0.94	4.69	18.99	6.62	0.35	0.05	203.75	185.97	17.78	10.46	13.62	0.60
35	Y105	1688.2	Shale	Longmaxi	LM2-3	Y105-102	300.0	57.6	11.4	127.0	49.2	260.0	14.3	122.0	199.0	12.1	8.9	541.0	0.9	22.3	12.6	27.8	95.0	2.5	8.9	30.7	36.30	66.00	8.24	31.40	6.00	1.16	5.44	0.82	4.66	0.95	2.68	0.39	2.47	0.36	1.42	10.67	2.88	0.90	4.08	14.70	6.05	0.33	0.02	166.86	149.10	17.76	8.39	10.54	0.61
36	YH3-8	3779.1	Shale	Longmaxi	LM2-3	YH-226	182.3	44.0	12.6	97.4	66.7	72.4	11.2	94.7	144.2	8.3	6.6	1811.0	0.6	18.9	9.5	15.8	71.9	2.0	6.9	22.1	29.21	54.52	6.47	23.68	4.50	1.00	4.33	0.61	3.47	0.71	2.02	0.28	1.76	0.26	1.37	10.40	3.09	1.33	4.23	16.63	6.49	0.35	0.02	132.82	119.37	13.45	8.88	11.93	0.68
37	YH3-8	3781.0	Shale	Longmaxi	LM2-3	YH-236	137.0	25.0	6.1	64.5	31.1	48.8	6.4	49.9	184.5	5.2	3.2	1239.0	0.3	8.8	5.4	10.5	55.5	1.4	4.4	22.5	21.72	39.62	4.89	18.91	3.91	0.91	3.95	0.56	3.21	0.66	1.91	0.27	1.74	0.26	1.23	12.65	4.01	1.12	4.95	12.47	5.55	0.32	0.01	102.53	89.96	12.57	7.16	8.94	0.70
38	SH outcrop	/	Shale	Longmaxi	LM2-3	SH11-9-1	163.1	30.8	7.3	77.6	25.3	103.8	7.3	75.1	171.3	6.1	3.9	654.6	0.5	11.0	6.5	9.4	66.9	1.6	2.9	17.8	23.43	42.21	4.40	16.30	3.11	0.60	2.84	0.46	2.52	0.51	1.42	0.18	1.32	0.17	2.21	22.74	3.60	1.12	7.97	17.75	7.53	0.35	0.02	99.47	90.05	9.42	9.56	12.73	0.61
39	SH outcrop	/	Shale	Longmaxi	LM2-3	SH11-1-2	171.3	31.6	6.5	70.2	23.9	68.0	7.5	73.8	194.4	6.1	3.7	689.1	0.5	10.6	7.1	9.0	71.7	1.8	3.4	17.5	21.11	42.25	4.10	16.08	2.94	0.56	2.74	0.42	2.66	0.51	1.41	0.19	1.36	0.18	2.06	20.91	2.99	0.92	6.15	15.52	7.18	0.31	0.02	96.51	87.04	9.47	9.19	11.13	0.59
40	SH outcrop	/	Shale	Longmaxi	LM2-3	SH10-8-1	152.5	28.6	5.6	61.3	25.4	50.2	6.5	67.5	254.5	5.1	3.6	658.3	0.4	10.5	6.6	11.7	60.3	1.5	3.1	23.7	24.50	47.78	4.72	18.67	3.55	0.74	3.49	0.53	3.13	0.68	1.81	0.24	1.54	0.23	2.13	19.64	3.74	0.86	7.98	15.91	6.90	0.34	0.02	111.61	99.96	11.65	8.58	11.41	0.63
41	SH outcrop	/	Shale	Longmaxi	LM2-3	SH9-23-2	171.3	30.0	4.9	71.5	20.9	83.5	6.3	64.3	245.8	5.2	3.3	610.5	0.4	9.9	6.3	10.3	64.4	1.5	2.9	22.1	22.06	42.50	4.30	17.25	3.26	0.68	2.89	0.49	2.77	0.56	1.53	0.21	1.40	0.20	2.17	22.27	3.52	0.78	7.63	15.76	6.77	0.35	0.02	100.10	90.05	10.05	8.96	11.30	0.66
42	SH outcrop	/	Shale	Longmaxi	LM2-3	SH9-15-1	176.7	25.8	4.8	72.3	18.2	63.8	5.9	55.4	159.9	4.4	3.0	621.0	0.3	7.9	5.4	9.8	52.2	1.2	2.1	16.9	18.15	34.48	3.34	13.33	2.54	0.55	2.45	0.35	2.31	0.44	1.24	0.17	1.16	0.15	2.58	24.97	3.37	0.88	8.68	15.65	7.15	0.30	0.02	80.66	72.39	8.27	8.75	11.22	0.66
43	XD2	2068.5	Shale	Longmaxi	LM1	XD-B31	320.0	26.6	4.7	105.0	36.5	815.0	6.3	48.9	73.0	4.2	3.0	1441.0	0.4	8.0	5.3	16.2	34.9	1.2	4.0	11.6	14.10	24.9	3.57	14.2	2.62	0.53	2.56	0.36	2.10	0.41	1.22	0.17	1.08	0.16	1.33	8.75	2.67	0.88	3.53	13.06	5.38	0.33	0.02	67.98	59.92	8.06	7.43	9.36	0.62
44	XD2	2069.0	Shale	Longmaxi	LM1	XD-B30	484.0	40.4	6.2	139.0	64.2	305.0	8.8	75.0	94.0	5.9	4.1	1623.0	0.5	13.8	7.9	35.3	56.3	2.0	5.8	23.0	23.80	42.2	6.21	24.5	4.57	0.88	4.59	0.65	3.95	0.76	2.34	0.31	2.09	0.30	1.37	9.76	3.00	0.78	4.12	11.39	5.21	0.31	0.02	117.15	102.16	14.99	6.82	8.17	0.58
45	XD2	2069.3	Shale	Longmaxi	LM1	XD-B29	403.0	47.4	3.7	140.0	117.0	242.0	5.3	38.8	391.0	4.0	2.0	1036.0	0.3	8.7	4.6	64.5	61.9	1.9	4.7	27.3	17.10	28.6	4.28	16.8	3.47	0.79	3.88	0.65	4.24	0.87	2.83	0.42	2.71	0.41	0.99	13.17	3.69	0.79	3.64	6.31	4.93	0.24	0.02	87.05	71.04	16.01	4.44	4.53	0.66
46	Y105	1688.9	Shale	Longmaxi	LM1	Y105-104	274.0	52.4	11.5	138.0	53.8	108.0	13.1	111.0	206.0	10.5	7.8	527.0	0.8	26.7	12.2	27.8	85.7	2.3	8.2	26.8	33.60	59.30	7.41	28.40	5.48	1.08	4.89	0.73	4.13	0.84	2.29	0.33	2.11	0.30	1.50	10.50	2.75	0.94	4.12	15.92	6.13	0.34	0.02	150.89	135.27	15.62	8.66	11.42	0.62
47	Y105	1689.3	Shale	Longmaxi	LM1	Y105-106	278.0	51.9	11.6	166.0	55.0	105.0	11.8	97.4	159.0	9.4	6.8	491.0	0.7	28.9	11.6	32.0	82.8	2.2	7.4	26.6	32.10	57.10	7.20	27.90	5.27	1.03	4.85	0.72	4.12	0.84	2.27	0.32	2.08	0.31	1.57	11.22	2.77	1.00	4.35	15.43	6.09	0.35	0.02	146.12	130.60	15.52	8.42	11.07	0.61
48	Y105	1689.8	Shale	Longmaxi	LM1	Y105-108	591.0	70.9	11.9	194.0	56.5	456.0	13.3	110.0	106.0	10.3	7.7	529.0	0.8	26.3	12.4	50.1	99.4	2.6	8.6	27.8	34.00	62.00	7.73	29.70	5.52	1.06	4.95	0.77	4.50	0.91	2.54	0.37	2.36	0.34	1.44	11.50	2.74	0.96	3.94	14.41	6.16	0.32	0.02	156.74	140.01	16.73	8.37	10.33	0.61
49	YH3-8	3782.2	Shale	Longmaxi	LM1	YH-242	168.4	36.9	6.7	100.5	43.5	53.4	7.5	54.7	145.6	5.3	3.8	1251.0	0.4	11.1	6.1	14.0	53.2	1.5	4.4	17.4	19.98	35.44	4.32	16.09	3.10	0.72	3.04	0.44	2.55	0.52	1.51	0.21	1.36	0.21	1.41	12.20	3.26	1.09	4.58	14.72	6.44	0.32	0.02	89.50	79.65	9.84	8.09	10.56	0.71
50	SH outcrop	/	Shale	Longmaxi	LM1	SH8-12-1	343.5	41.1	5.9	126.1	48.5	132.3	7.5	59.6	41.3	4.8	3.1	648.0	0.3	15.0	5.8	22.6	57.0	1.3	3.2	26.4	19.76	41.41	4.19	16.53	3.21	0.70	3.80	0.52	3.13	0.74	1.86	0.25	1.70	0.25	1.79	17.59	3.40	1.02	6.10	11.62	6.16	0.31	0.02	98.05	85.80	12.25	7.00	8.34	0.61
51	SH outcrop	/	Shale	Longmaxi	LM1	SH8-10-1	367.1	45.6	6.6	131.7	61.0	171.6	7.1	65.8	42.2	5.1	3.3	664.9	0.3	15.6	5.9	22.8	62.2	1.3	2.8	23.3	20.10	37.78	3.92	15.46	2.91	0.63	3.22	0.46	2.83	0.64	1.72	0.23	1.40	0.22	2.14	22.47	3.40	1.12	7.26	14.36	6.91	0.33	0.02	91.52	80.80	10.72	7.54	10.30	0.63
52	XD2	2069.5	Shale	Guanyingqiao	WF4	XD-B28	122.0	40.8	4.4	59.9	25.7	15.2	9.6	88.1	306.0	8.2	4.8	1668.0	0.7	9.3	8.5	5.9	66.7	2.5	9.1	17.8	16.00	25.2	3.59	13.7	2.69	0.59	2.88	0.44	2.73	0.57	1.87	0.27	1.89	0.29	0.94	7.34	1.88	0.52	1.76	8.47	5.95	0.23	0.04	72.71	61.77	10.94	5.65	6.07	0.64
53	XD2	2069.6	Shale	Guanyingqiao	WF4	XD-B27	62.4	27.5	10.9	81.4	25.2	14.0	8.4	73.4	353.0	6.6	3.6	1488.0	0.5	21.0	7.5	2.3	80.9	2.9	7.6	18.7	21.60	34.4	4.69	17.6	3.29	0.65	3.34	0.50	3.00	0.62	1.96	0.28	1.92	0.29	0.99	10.66	2.88	1.46	2.85	11.25	6.57	0.26	0.02	94.14	82.23	11.91	6.90	8.07	0.59
54	XD2	2069.7	Shale	Guanyingqiao	WF4	XD-B26	59.3	36.5	8.0	84.9	58.6	77.8	11.2	87.5	103.0	8.6	3.4	1767.0	0.6	30.6	8.9	2.6	238.0	6.6	5.5	29.8	37.90	82.5	11.3	43.3	9.06	1.76	8.64	1.20	6.35	1.07	2.81	0.31	1.82	0.27	1.63	43.51	4.26	0.90	6.93	20.82	4.18	0.66	0.02	208.29	185.82	22.47	8.27	14.94	0.60
55	XD2	2069.9	Shale	Guanyingqiao	WF4	XD-B24	104.0	39.2	11.2	108.0	51.3	55.8	12.2	98.3	157.0	10.3	4.1	1822.0	0.7	29.6	9.8	4.4	208.0	5.8	7.6	17.0	26.40	45.5	6.16	23.9	4.56	0.86	4.51	0.59	3.27	0.62	1.82	0.24	1.61	0.24	1.29	27.33	2.70	1.15	3.47	16.40	5.79	0.37	0.03	120.28	107.38	12.90	8.32	11.76	0.57
56	Y105	1690.2	Shale	Guanyingqiao	WF4	Y105-109	186.0	53.4	11.3	102.0	29.1	93.4	12.1	99.9	364.0	10.7	6.6	642.0	0.8	33.5	11.6	23.3	87.0	2.5	9.4	32.3	31.40	49.10	6.10	23.00	4.27	0.90	4.30	0.69	4.24	0.94	2.68	0.41	2.63	0.40	1.24	9.27	2.71	0.97	3.34	11.94	7.35	0.26	0.03	131.06	114.77	16.29	7.05	8.56	0.64
57	SH outcrop	/	Shale	Guanyingqiao	WF4	SH7-4-1	86.3	37.2	9.0	56.4	19.7	58.8	9.3	89.3	356.5	8.4	4.5	664.4	0.6	14.7	8.4	2.3	83.9	2.3	6.2	22.0	23.70	41.98	3.96	15.19	2.61	0.52	2.74	0.43	2.68	0.64	1.85	0.28	2.00	0.27	1.35	13.50	2.83	1.08	3.82	11.85	9.08	0.22	0.03	98.85	87.96	10.89	8.08	8.50	0.59
58	YH3-8	3783.0	Shale	Guanyingqiao	WF4	YH-247	300.6	51.1	14.9	180.9	49.4	179.1	12.8	96.4	182.7	10.1	7.4	1250.0	0.7	18.6	6.2	49.8	45.0	1.2	1.7	19.2	30.86	59.53	7.25	26.88	5.02	1.04	4.50	0.63	3.46	0.71	2.03	0.29	1.90	0.28	3.60	26.31	5.01	2.42	18.04	16.23	6.15	0.33	0.02	144.36	130.57	13.79	9.47	11.64	0.66
59	YH3-8	3783.7	Shale	Guanyingqiao	WF4	YH-250	175.7	80.8	12.4	98.2	84.9	88.7	12.1	100.9	163.5	11.0	6.5	1527.0	0.6	16.9	10.4	10.5	70.6	1.4	8.3	23.4	38.51	82.93	9.52	35.22	6.67	1.17	5.92	0.80	4.40	0.88	2.38	0.34	2.18	0.34	1.24	8.47	3.71	1.20	4.62	17.67	5.78	0.36	0.02	191.25	174.01	17.24	10.09	12.67	0.56
60	Z204	3409.6	Shale	Wufeng	WF2-3	Z4-1	101.3	75.8	30.4	130.9	67.1	332.3	18.5	87.6	266.9	14.8	4.9	280.6	0.9	110.9	16.3	8.8	86.9	2.7	10.6	55.6	45.60	106.46	11.68	51.54	10.61	1.75	10.44	1.75	8.75	1.88	5.00	0.83	4.69	0.73	1.53	8.19	2.81	1.87	4.30	9.73	4.30	0.37	0.02	261.72	227.64	34.08	6.68	6.98	0.50
61	XD2	2070.3	Shale	Wufeng	WF2-3	XD-B22	308.0	39.5	4.8	127.0	41.1	80.4	22.5	162.0	184.0	15.0	8.2	3762.0	1.5	17.9	24.0	12.6	180.0	5.6	11.7	29.6	21.10	39.4	5.63	22	4.16	0.67	4.17	0.68	4.60	1.00	3.41	0.51	3.65	0.54	2.05	15.38	0.88	0.20	1.80	5.78	5.07	0.19	0.07	111.52	92.96	18.56	5.01	4.15	0.49
62	XD2	2072.9	Shale	Wufeng	WF2-3	XD-B19	150.0	39.9	6.1	44.9	33.9	9.8	6.7	66.7	358.0	5.5	3.4	1046.0	0.4	20.9	6.3	5.1	45.1	1.5	5.6	13.2	16.70	33.8	4.43	17.7	3.23	0.52	3.14	0.45	2.63	0.48	1.45	0.19	1.25	0.18	1.13	8.07	2.66	0.98	2.99	13.36	5.17	0.36	0.02	86.15	76.38	9.77	7.82	9.58	0.49
63	XD2	2075.6	Shale	Wufeng	WF2-3	XD-B15	82.0	31.1	11.7	56.8	56.9	17.7	10.0	96.4	355.0	17.0	5.0	1389.0	1.3	70.7	10.2	5.7	101.0	3.1	6.3	25.4	27.60	65.7	8.4	31.3	6.97	1.20	6.61	0.95	5.08	0.91	2.60	0.34	2.18	0.32	1.63	16.11	2.71	1.15	4.40	12.66	3.96	0.44	0.05	160.16	141.17	18.99	7.43	9.08	0.53
64	XD2	2078.8	Shale	Wufeng	WF2-3	XD-B10	112.0	67.1	8.8	67.1	100.0	27.7	11.9	123.0	158.0	9.8	6.4	1528.0	0.8	28.1	12.4	4.7	92.5	2.8	9.1	16.1	28.40	49.1	6.51	23.3	4.28	0.81	4.00	0.53	3.12	0.61	1.85	0.26	1.73	0.25	1.36	10.16	2.29	0.71	3.12	16.42	6.64	0.31	0.03	124.75	112.40	12.35	9.10	11.78	0.59
65	XD2	2080.6	Shale	Wufeng	WF2-3	XD-B6	144.0	50.7	7.2	48.3	55.7	4942.0	19.5	159.0	383.0	12.8	8.5	2157.0	0.8	24.8	12.7	3.8	143.0	3.2	16.6	58.9	43.80	118	16.2	68.5	16.4	3.17	17.10	2.45	12.40	2.02	5.18	0.60	3.86	0.55	0.77	8.61	3.45	0.56	2.64	11.35	2.67	0.63	0.02	310.23	266.07	44.16	6.03	8.14	0.57
66	XD2	2081.8	Shale	Wufeng	WF2-3	XD-B2	94.1	65.6	6.1	44.7	36.5	27.7	18.7	172.0	420.0	15.0	9.1	2125.0	1.2	13.2	18.9	3.0	136.0	4.0	15.4	14.3	32.60	67.3	6.96	22.1	4.38	0.91	3.86	0.53	3.00	0.56	1.81	0.25	1.75	0.27	1.23	8.83	1.72	0.32	2.12	18.63	7.44	0.30	0.04	146.28	134.25	12.03	11.16	13.36	0.66
67	Y105	1690.5	Shale	Wufeng	WF2-3	Y105-110	51.3	16.8	9.1	57.6	34.2	9.6	3.0	18.8	580.0	2.7	1.2	491.0	0.2	12.2	3.2	12.3	34.4	0.8	4.0	23.1	13.20	23.30	2.67	10.90	2.25	0.58	2.50	0.42	2.70	0.60	1.73	0.26	1.68	0.25	0.80	8.62	4.14	2.86	3.31	7.86	5.87	0.25	0.02	63.04	52.90	10.13	5.22	5.64	0.75
68	Y105	1691.2	Shale	Wufeng	WF2-3	Y105-112	189.0	54.2	11.6	104.0	29.6	94.7	12.2	103.0	371.0	11.0	6.7	645.0	0.8	33.9	11.5	22.8	88.9	2.5	9.6	32.7	31.50	48.30	6.14	22.80	4.27	0.90	4.21	0.68	4.18	0.92	2.67	0.40	2.62	0.39	1.20	9.28	2.74	1.01	3.29	12.02	7.38	0.26	0.03	129.98	113.91	16.07	7.09	8.62	0.64
69	Y105	1691.5	Shale	Wufeng	WF2-3	Y105-113	612.0	84.0	15.2	138.0	123.0	167.0	15.3	126.6	182.2	14.2	8.7	584.0	0.9	49.4	13.6	30.8	192.6	4.4	9.7	40.2	44.60	80.60	9.32	34.60	6.80	0.96	6.70	1.10	6.66	1.41	4.04	0.59	3.94	0.59	1.40	19.90	3.29	1.12	4.61	11.32	6.56	0.28	0.02	201.91	176.88	25.03	7.07	8.12	0.43
70	Y105	1691.9	Shale	Wufeng	WF2-3	Y105-Gl	886.0	123.0	18.6	212.0	157.0	367.0	19.5	177.0	70.0	22.7	11.6	752.0	1.3	54.5	16.9	45.6	257.0	4.8	13.1	47.6	43.70	86.40	10.70	43.00	9.08	1.01	8.13	1.36	8.27	1.75	4.95	0.73	4.72	0.70	1.29	19.62	2.59	1.10	3.34	9.26	4.81	0.29	0.03	224.49	193.89	30.60	6.34	6.64	0.35
71	YH3-8	3784.5	Shale	Wufeng	WF2-3	YH-255	292.6	73.9	9.5	103.1	108.1	282.5	9.7	89.0	72.1	7.0	5.4	1444.0	0.5	22.4	8.4	9.8	69.6	1.9	7.3	22.0	27.51	52.52	6.24	23.45	4.77	0.91	4.73	0.67	3.88	0.76	2.10	0.30	1.89	0.29	1.15	9.47	3.26	1.12	3.75	14.58	5.76	0.36	0.02	130.02	115.41	14.62	7.90	10.46	0.58
72	YH3-8	3788.2	Shale	Wufeng	WF2-3	YH-270	89.8	54.7	10.3	39.7	50.6	187.2	14.8	134.5	258.2	12.9	7.5	1832.0	0.9	34.9	11.1	3.0	107.2	3.0	7.7	29.9	33.24	81.58	8.16	31.96	7.32	1.62	7.49	1.07	5.88	1.12	3.08	0.44	2.77	0.43	1.45	13.94	2.99	0.93	4.32	11.98	4.54	0.39	0.03	186.16	163.88	22.28	7.36	8.60	0.66
73	YH3-8	3791.5	Shale	Wufeng	WF2-3	YH-288	87.5	52.7	15.8	50.1	74.3	143.6	15.3	118.3	193.5	15.5	8.0	1785.0	1.2	49.1	14.2	2.0	109.0	3.0	10.3	18.6	34.79	80.31	7.30	25.69	4.74	0.95	4.21	0.60	3.45	0.68	2.00	0.29	1.91	0.28	1.39	10.61	2.44	1.11	3.39	18.26	7.34	0.32	0.03	167.19	153.78	13.41	11.47	13.10	0.64
74	YH3-8	3792.6	Shale	Wufeng	WF2-3	YH-295	37.7	27.9	7.7	29.0	41.3	28.3	7.4	57.5	304.0	6.6	3.2	857.4	0.5	28.9	6.0	0.8	47.1	1.2	4.5	16.8	24.38	55.67	5.33	19.93	4.32	1.03	4.17	0.59	3.21	0.61	1.69	0.23	1.44	0.22	1.33	10.44	4.05	1.28	5.40	16.90	5.64	0.41	0.02	122.82	110.66	12.16	9.10	12.12	0.73
75	SH outcrop	/	Shale	Wufeng	WF2-3	SH6-7-2	196.4	48.1	10.0	151.2	59.9	222.6	11.7	92.7	221.9	11.1	5.2	686.1	0.8	17.9	11.2	14.8	157.5	4.0	6.5	34.3	33.73	63.25	6.94	26.55	5.14	0.86	5.49	0.76	4.69	1.06	3.07	0.41	2.97	0.45	1.71	24.19	3.03	0.90	5.18	11.36	6.56	0.26	0.02	155.37	136.47	18.90	7.22	8.15	0.49
76	SH outcrop	/	Shale	Wufeng	WF2-3	SH6-3-1	254.1	58.3	9.3	150.7	84.6	306.9	13.8	111.7	143.4	12.9	6.7	807.4	1.0	17.9	12.6	13.1	154.3	3.8	9.1	35.5	35.42	68.52	7.73	28.84	5.60	0.94	5.20	0.85	5.16	1.16	3.40	0.50	3.27	0.49	1.39	17.01	2.80	0.74	3.91	10.83	6.33	0.26	0.03	167.08	147.05	20.03	7.34	7.77	0.52
77	SH outcrop	/	Shale	Wufeng	WF2-3	SH5-33-2	90.5	28.7	16.7	54.7	48.1	25.6	6.8	64.4	351.3	5.8	3.2	445.4	0.4	23.1	7.0	11.8	75.3	1.9	3.6	27.1	22.99	48.60	4.32	18.74	3.37	0.72	3.56	0.56	3.48	0.77	2.17	0.29	1.86	0.27	1.94	20.84	3.28	2.38	6.37	12.36	6.82	0.30	0.02	111.70	98.74	12.96	7.62	8.87	0.63
78	SH outcrop	/	Shale	Wufeng	WF2-3	SH5-30-2	138.3	33.4	7.5	56.6	34.6	29.2	5.9	60.2	368.2	4.7	2.6	510.5	0.4	13.4	5.0	6.8	52.6	1.3	3.2	20.1	19.15	39.96	3.64	15.71	2.81	0.63	2.81	0.45	2.71	0.57	1.59	0.23	1.40	0.21	1.54	16.32	3.86	1.50	5.95	13.68	6.81	0.32	0.02	91.87	81.90	9.97	8.21	9.81	0.68
79	SH outcrop	/	Shale	Wufeng	WF2-3	SH5-26-2	139.7	37.1	5.8	50.5	33.3	47.6	5.0	55.5	353.2	4.2	2.6	521.5	0.3	9.4	5.2	4.1	53.8	1.2	3.2	17.4	18.24	37.23	3.45	13.26	2.62	0.59	2.55	0.39	2.46	0.50	1.50	0.17	1.27	0.18	1.63	16.96	3.52	1.13	5.75	14.36	6.96	0.31	0.02	84.41	75.39	9.02	8.36	10.30	0.69
80	SH outcrop	/	Shale	Wufeng	WF2-3	SH5-20-1	124.6	35.5	5.2	47.8	30.5	26.4	5.3	55.7	350.9	4.3	2.6	517.2	0.3	9.7	5.1	4.1	48.6	1.2	3.2	17.5	17.89	34.93	3.45	13.36	2.50	0.53	2.68	0.41	2.32	0.51	1.50	0.20	1.33	0.18	1.61	15.36	3.52	1.02	5.66	13.45	7.16	0.31	0.02	81.79	72.66	9.13	7.96	9.65	0.62
81	SH outcrop	/	Shale	Wufeng	WF2-3	SH4-32-1	149.3	55.5	6.9	54.3	47.8	48.3	6.9	64.4	63.7	5.1	3.2	584.2	0.4	11.9	6.0	3.7	53.2	1.3	3.6	13.1	18.56	38.30	3.81	14.00	2.87	0.49	2.55	0.36	2.14	0.41	1.08	0.13	1.01	0.15	1.67	14.86	3.11	1.16	5.18	18.38	6.47	0.36	0.02	85.86	78.03	7.83	9.97	13.18	0.54
82	SH outcrop	/	Shale	Wufeng	WF2-3	SH4-24-1	93.5	32.1	4.6	37.3	34.8	41.8	4.4	48.7	183.2	3.4	2.2	506.2	0.3	9.8	4.2	3.0	41.3	1.1	2.5	17.5	18.52	35.27	3.83	13.75	2.81	0.58	2.76	0.47	2.57	0.56	1.50	0.18	1.32	0.20	1.69	16.59	4.41	1.09	7.44	14.03	6.59	0.36	0.01	84.32	74.76	9.56	7.82	10.06	0.63
83	SH outcrop	/	Shale	Wufeng	WF2-3	SH4-16-1	126.2	42.1	5.3	44.3	43.3	47.3	5.7	61.8	188.9	4.6	2.7	562.0	0.3	10.2	4.9	3.5	51.2	1.2	4.2	17.9	18.30	37.24	3.80	14.35	3.01	0.55	2.88	0.44	2.41	0.52	1.41	0.20	1.26	0.18	1.17	12.15	3.72	1.08	4.35	14.52	6.08	0.35	0.02	86.55	77.25	9.30	8.31	10.42	0.56
Average							197.4	51.3	10.6	85.8	49.6	177.3	12.4	99.9	199.9	9.8	6.6	1292.8	0.8	22.4	10.9	13.7	90.1	2.6	7.8	23.9	38.20	79.60	8.83	33.90	5.55	1.08	4.66	0.77	4.68	0.99	2.85	0.41	2.82	0.43	1.41	11.58	3.49	0.97	4.91	13.55	6.88	0.27	0.02	184.77	167.16	17.61	9.49	9.72	0.63
PAAS							150.0	110.0	23.0	55.0	50.0	85.0	—	160.0	200.0	19.0	15.0	650.0	—	—	14.6	3.1	210.0	5.0	16.0	27.0	32.00	73.00	7.90	33.00	5.70	1.24	5.20	0.85	5.80	1.04	3.40	0.50	3.10	0.48	0.91	13.13	2.19	1.58	2.00	10.32	5.61	0.27	/	185.77	168.16	18.61	10.49	7.40	0.68
NASC							130.0	125.0	26.0	58.0	—	—	—	125.0	142.0	13.0	—	636.0	1.1	—	12.3	3.0	200.0	6.3	15.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—