

معاونت اکتشاف - مدیریت خدمات اکتشاف

گروه اکتشافات ژئوشیمیایی

طرح تلفیق لایه های اطلاعاتی پایه و معرفی مناطق امیدبخش معدنی کشور

اکتشافات ژئوشیمیایی - کانی سنگین در ورقه ۱:۱۰۰,۰۰۰ اشتهارد

مجری طرح: مهندس ناصر عابدیان

۱۳۳۸

گروه اکتشافات ژئوشیمیایی
توسط:

مهندس نجات غلامی

بهار ۱۳۸۸

۱۳۳۸

۱۳۳۸

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..... (Outliers).....

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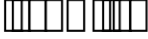
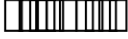
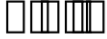

..... (Cluster Analysis).....


..... (Factor Analysis).....


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 6061 IV	 6061 I
 6061 III	 6061 II

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 \in_1^{t2}



 \in_1^b



 \in_1^1



 \in_1^{ig}







شکل (۱-۲): تصویرنقشه زمین شناسی ۱/۱۰۰۰۰۰ ورقه اشتهارد

LEGEND

و ا هـ



ادامه شکل (۱-۲)

Q-Q

Q-Q

(Outliers)

Q-Q

Q-Q

(Outliers)

Q-Q

Q-Q

Table 1: List of elements and their corresponding S.No. and values.

S.No.	Bi	S.No.	Al	S.No.	Mn	S.No.	Sr	S.No.	As
307	0.1	271	86730	30	2631	158	5083	270	240.5
219	0.1	232	83210	35	2353	162	4407	252	161.3
299	0.1	247	82830	31	2321	159	4094		
301	0.1	246	82780	357	2292	157	3737		
71	0.1								

S.No.	Ca	S.No.	Cu	S.No.	K	S.No.	Mo	S.No.	Pb
162	110200	212	95.31	253	42590	31	4.085	103	281.3
161	104300	214	90.76	227	39220	33	3.629	357	220.1

S.No.	S	S.No.	Au(ppb)	S.No.	Cd	S.No.	Co	S.No.	Mg
162	121500	212	7.2	241	2.724	241	35.05	123	18710
161	101900								

S.No.	Rb	S.No.	Sb	S.No.	Sc	S.No.	Te	S.No.	Tl
253	221.1	357	18.64	356	30.79	136	0.5846	241	1.455

S.No.	Zn	S.No.	Zr
357	568.5	238	697.2

Table 2: List of elements and their corresponding S.No. and values.

(Cox & Box)

Table 3: List of elements and their corresponding S.No. and values.

Y, Tl, sc, Ni, Na, Mn, Mg, Li, La, K, Hg, Cu, Co, Sn, Al, Ce, Be, Sn

Sr, S, Ba

Q-Q

Table 4: List of elements and their corresponding S.No. and values.



Element	N	Minimum	Maximum	Mean	STD	CV%	Skewness	Kurtosis
LN(Au)	356	0.00	1.40	0.6	0.2	39.7	0.2	3.0
Sn	357	1.5	5.3	3.1	0.8	24.2	0.4	2.8
LN(Ag)	357	-1.61	0.44	-0.8	0.5	-58.0	0.4	2.6
Al	353	41100	86730	68290.6	7192.7	10.5	-0.8	4.1
LN(As)	355	1.20	4.70	2.6	0.6	21.1	0.8	4.2
LN(Ba-367)	357	1.55	8.08	5.6	0.6	11.4	0.0	9.0
Be	357	0.8	2.7	1.7	0.3	16.9	0.1	3.3
LN(Bi)	351	-1.80	2.02	0.4	0.6	165.5	-0.8	4.4
LN(Ca)	355	9.30	11.61	10.6	0.4	3.6	-0.3	3.5
LN(Cd)	356	-2.63	0.70	-1.0	0.7	-67.0	0.3	3.0
Ce	357	25.2	77.4	51.2	8.5	16.6	0.2	3.3
Co	356	7.2	29.3	15.9	4.1	25.7	0.5	3.1
LN(Cr)	357	2.80	5.13	3.9	0.3	8.9	0.3	3.7
LN(Cs)	357	1.01	2.90	1.7	0.3	19.3	0.5	3.4
Cu	355	6.3	85.8	36.3	12.5	34.4	0.6	4.4
LN(Fe)	357	10.26	12.00	11.0	0.3	2.4	0.0	3.1
Hg	357	0.1	0.2	0.1	0.0	18.3	0.8	3.8
K	355	6164	37490	21273.5	4494.2	21.1	0.4	3.9
La	357	12.8	38.1	24.8	4.0	16.3	0.0	2.9
Li	357	7.8	39.7	21.0	4.6	21.9	0.6	4.2
Mg	356	5212	16000	9532.1	1878.1	19.7	0.4	3.2
Mn	353	451	2114	1175.9	293.2	24.9	0.4	3.4
LN(Mo)	355	-0.90	1.41	0.2	0.4	233.5	0.1	2.9
Na	357	5006	29010	16118.4	3840.7	23.8	0.0	3.0
LN(Nb)	357	2.13	3.59	2.8	0.2	8.2	0.1	3.6
Ni	357	10.4	40.9	23.2	5.5	23.7	0.5	3.4
LN(P)	357	6.09	7.45	6.7	0.3	4.1	0.3	2.6
LN(Pb)	355	2.46	5.20	3.7	0.4	11.1	0.3	4.1
LN(Rb)	356	2.15	5.20	4.4	0.3	6.5	0.2	3.8
LN(S-123.6)	355	-4.61	11.40	5.7	1.4	23.9	0.2	16.1
LN(Sb)	356	-0.54	2.40	0.7	0.5	71.1	0.6	3.9
Sc	355	6.1	23.8	14.4	3.4	23.6	0.2	2.8
LN(Sr-115)	352	1.95	7.70	4.9	0.7	14.1	0.0	5.8
LN(Te)	356	-2.35	-0.70	-1.7	0.3	-18.0	0.5	3.1
LN(Th)	357	1.97	3.42	2.7	0.2	9.0	0.1	3.3
LN(Ti)	357	7.90	9.49	8.6	0.3	3.3	0.2	3.2
Tl	356	0.5	1.4	1.0	0.1	15.1	0.1	3.2
LN(U)	357	0.58	2.34	1.4	0.3	22.5	0.1	2.9
LN(V)	357	3.97	6.20	5.0	0.4	7.8	0.1	3.2
LN(W)	357	-0.18	1.68	0.7	0.3	45.9	0.6	3.9
Y	357	15.2	42.9	29.0	5.1	17.6	0.2	2.6
LN(Zn)	356	3.64	6.34	4.8	0.4	9.2	0.6	3.8
LN(Zr)	356	5.14	6.55	5.9	0.3	4.6	0.0	2.9

Spearman's) ρ (Correlation Coefficient)

Mahalanobis

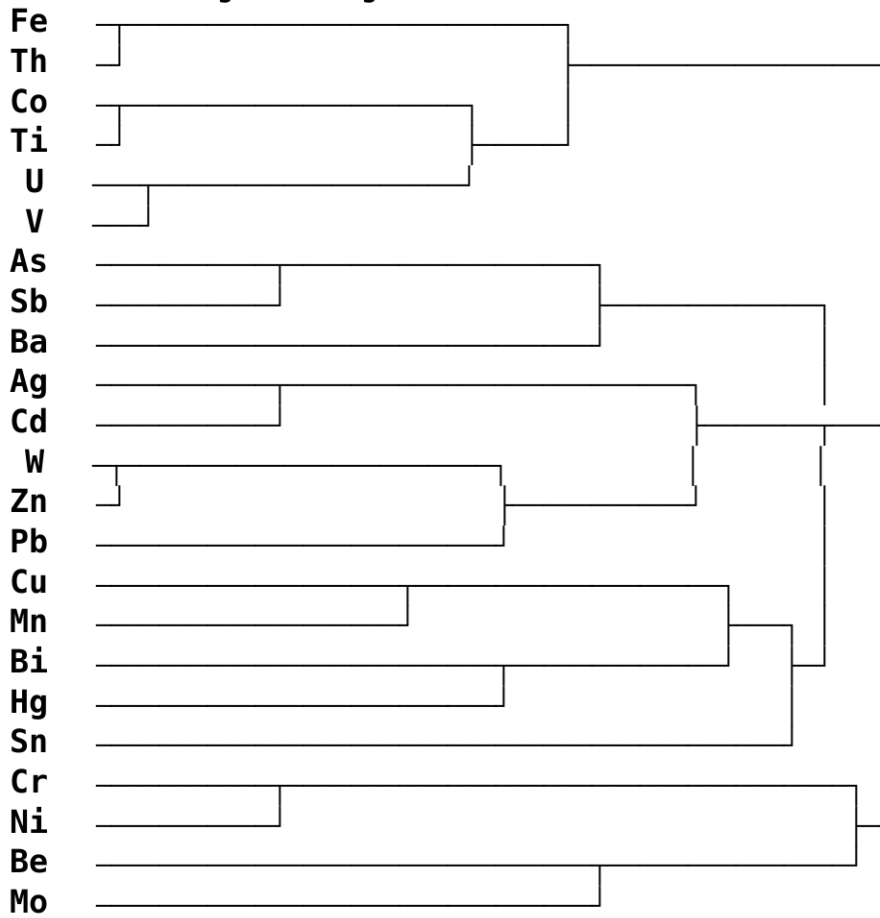
(Mahalanobis) D^2

(Cluster Analysis)

R-Mode

(Dendrogram)

Dendrogram using Centroid Method



(Dendrogram)

(Principal Component Analysis)

KMO

(Bartlett's Test of Sphericity)

Screen plot

$\bar{X} \pm 2.5S$ $\bar{X} \pm 1.5S$ $\bar{X} \pm 0.5S$

$\bar{X} + 0.5S$ $\bar{X} + 1.5S$ $\bar{X} + 2.5S$

$\bar{X} - 0.5S$ $\bar{X} - 1.5S$ $\bar{X} - 2.5S$

$\bar{X} - 2.5S$ $\bar{X} - 1.5S$ $\bar{X} - 0.5S$

$\bar{X} - 0.5S$ $\bar{X} - 1.5S$ $\bar{X} - 2.5S$

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$\bar{X} - 2.5S$ $\bar{X} - 1.5S$ $\bar{X} - 0.5S$

$\bar{X} \pm 2.5S$ $\bar{X} \pm 1.5S$ $\bar{X} \pm 0.5S$

ELEMENT	Au(ppm)	Sn	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce
$\bar{X} + 0.5S$	2.0	3.5	0.56	71887	18.3	721.0	1.8	2.0	46275	0.5	55.4
$\bar{X} + 1.5S$	2.6	4.3	0.90	79080	32.0	1033.0	2.1	3.6	67615	1.0	63.9
$\bar{X} + 2.5S$	3.2	5.0	1.44	86272	55.7	1620.2	2.4	6.6	98795	2.0	72.4

ELEMENT	Co	Cr	Cs	Cu	Fe	Hg	K	La	Li	Mg	Mn
$\bar{X} + 0.5S$	18.0	60.58	6.6	42.5	68524	0.11	23521	27	23.3	10471	1323
$\bar{X} + 1.5S$	22.1	85.90	9.3	55.0	89414	0.13	28015	31	27.9	12349	1616
$\bar{X} + 2.5S$	26.2	121.81	12.9	67.4	116673	0.14	32509	35	32.5	14227	1909

ELEMENT	Mo	Na	Nb	Ni	P	Pb	Rb	S	Sb	Sc	Sr
$\bar{X} + 0.5S$	1.5	18039	18.4	26	909	59.4	89.5	716	2.6	16	308
$\bar{X} + 1.5S$	2.2	21879	23.2	31	1197	86.1	118.9	2440	4.4	19	501
$\bar{X} + 2.5S$	3.3	25720	29.2	37	1575	112.9	157.9	9181	7.3	23	886

ELEMENT	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
$\bar{X} + 0.5S$	0.2	16.44	6158	1.0	4.83	180	2.3	31.55	157.1	411
$\bar{X} + 1.5S$	0.3	20.95	8162	1.2	6.65	265	3.1	36.64	245.7	540
$\bar{X} + 2.5S$	0.4	26.70	10816	1.3	9.14	391	4.2	41.73	384.1	709

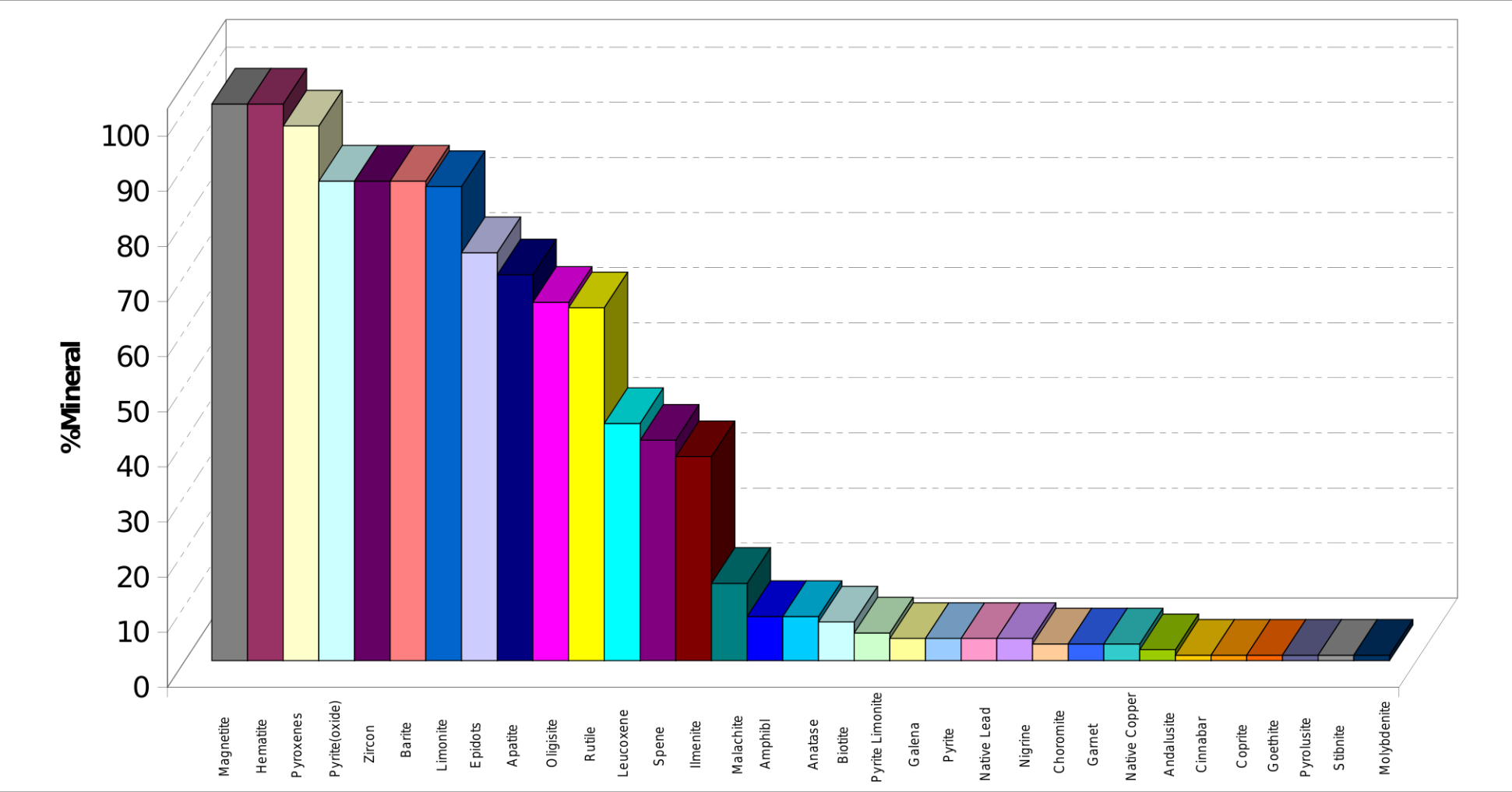
Au , Ag , As , Cu , Mo 

, Sb , pb , Zn , Ba , Mn , Fe , Sr



1,2-디옥솔렌 유도체의 13C-NMR 스펙트럼 (CDCl3) (ppm)

구조식	구조식	13C-NMR 스펙트럼 (ppm)	13C-NMR 스펙트럼	13C-NMR 스펙트럼	13C-NMR 스펙트럼
		212(0.0072)			
		357(1.56)			
		270(240.5), 252(161.3)			
		357(18.64), 347(10.3) 147(10.0), 145(9.2)			
		270(11.0), 252(11.6)			



تعداد کل شرکت‌های دانش‌بنیان در استان تهران (مجموعه)

نوع شرکت	تعداد شرکت‌ها	تعداد کارکنان	نوع فعالیت	تعداد واحدهای فناور	تعداد واحدهای دانش‌بنیان
شرکت سهامی خاص	۳۴۳ و ۲۱۳	۹۷	تولیدی	۱	۱
شرکت سهامی عام	۶۴ و ۱۱۴ و ۱۲۰	۱۹۳ و ۱۹۱	خدماتی	۱	۱
شرکت با مسئولیت محدود	۸۴		خدماتی	۱	۱

تعداد کل شرکت‌های دانش‌بنیان در استان تهران (مجموعه)

تعداد کل شرکت‌های دانش‌بنیان (Native Lead) در استان تهران در سال ۱۳۹۷

تعداد کل شرکت‌های دانش‌بنیان (Native Lead) در استان تهران در سال ۱۳۹۸

تعداد کل شرکت‌های دانش‌بنیان (Native Lead) در استان تهران در سال ۱۳۹۹

تعداد کل شرکت‌های دانش‌بنیان در استان تهران (مجموعه)

نوع شرکت	تعداد شرکت‌ها	تعداد کارکنان	نوع فعالیت	تعداد واحدهای فناور	تعداد واحدهای دانش‌بنیان
شرکت سهامی خاص	۶۴ و ۱۱۴ و ۱۲۰	۳۳۸ و ۲۱۳	تولیدی	۱	۱
شرکت سهامی عام	۱۰۷		خدماتی	۱	۱

جدول (۷-۲): نتایج نمونه های کانی سنگین برداشت شده از محدوده های ناهنجار

Sample No.	33	33a	33b	33c	101a	101b	101c	102a	102b	103a	103b
Lab.No.	1	2	3	4	5	6	7	8	9	10	11
X-coord	441822	442035	441571	441496	425402	424918	425139	424806	424625	425807	425780
Y-coord	3932875	3932668	3933268	3933449	3934512	3934756	3935289	3936094	3935924	3935863	3936007
Total Volume cc A	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Panned Volume cc B	22	30	25	27	60	60	60	30	27	30	18
Study Volume cc C	22	30	25	27	15	15	15	15	20	15	18
Heavy Volume cc y	2	17	3	17	12	9	10	5	13	12	7

Magnetite	10	4.5	18	10	18	9	18	16	14	24	16
Goethite						0.01					
Hematite	22.5	16	20	12	46	41.5	30	32	34	37.5	30
Limonite	4.5	8	8	8	8	9	12	7	10.5	7	8
Pyrite(oxide)	40	48	32	52	8	9	16	7	3.5	3.5	4
Pyroxene Group	13.5	4	8	4	16	27	20	24.5	21	24.5	32
Amphibole Group											
Epidot Group	4.5	0.4	8	0.01		0.01	0.4	0.35	3.5	0.35	4
Garnet Group											
Peridot	0.01	0.01	0.4		0.01						0.01
Oligisite			0.01			0.01	0.01	0.01	0.01		
Ilmenite			0.01				0.01				
Chromite										0.01	
Tourmaline											
Biotite										0.01	
Ocher											
Muscovite						0.01		0.01			
Gold											
Jarosite	0.01	0.01							0.01		
Zircon	0.01	0.75	0.01	1	0.025	0.01	0.025	0.01	0.01	0.01	0.025
Apatite	0.01	0.01		0.01	0.025	0.01		0.01	0.01	0.01	0.01
Barite	0.025	9	0.01	6.5	0.025	0.025	0.025	9	0.025	0.025	0.025
Rutile	0.01	0.01	0.01	0.01	0.01	0.01		0.01	0.01	0.01	0.01
Leucosene	0.01	0.01		0.01	0.01	0.01		0.01			0.01
Sphene		0.01		0.01				0.01		0.01	
Anatase	0.025	4.5	0.4	2	2.01	0.01	0.01	0.01	0.01		
Cinnabar										0.01	
Marcasite								0.01			
Cerussite						0.01	0.01	0.01	0.01	0.01	
Galena							0.01	0.01	0.025	0.01	
Malachite					0.01		0.01	0.02			
Pyrite	0.01			0.01							
Pyrite Limonite								0.01			
Stolzite								0.01	0.01		
Massicote						0.01	0.01		0.01		
Mimetite						0.01		0.01	0.01		
Litharge						0.01	0.01				
Native lead						0.01					
Pyromorphit						0.01			0.01		
Descloizite							0.01		0.01	0.01	
Light Minerals	0.06	0.5	2.01	0.05	0.01			0.01	0.025	0.01	2.02
Altered Minerals											
SUM	95.18	95.71	96.86	95.61	98.135	95.675	96.54	96.02	86.695	96.985	96.11

Sample No.	Fe Oxide Group	Barite	Cinnabar	Cu Group	Pb Group
E-33	*	*			
E-33A	*	*			
E-33B	*	*			
E-33C	*	*			
E-101A	*	*		*	
E-101B	*	*			*
E-101C	*	*		*	*
E-102A	*	*		*	*
E-102B	*	*			*
E-103A	*	*	*		*
E-103B	*	*			

	E-33	E-33A	E-33B	E-33C	E-101A	E-101B	E-101C	E-102A	E-102B	E-103A	E-103B
Fe Oxide Group	*	*	*	*	*	*	*	*	*	*	*
Barite	*	*	*	*	*	*	*	*	*	*	*
Cinnabar										*	
Galena							*	*	*	*	
Malachite					*		*	*			
Stolzite								*	*		
Massicote						*	*		*		
Mimetite						*		*	*		
Litharge						*	*				
Native lead						*					
Pyromorphit						*			*		
Descloizite							*		*	*	

جدول (۵-۷): نتایج نمونه های سنگی برداشت شده از محدوده های ناهنجار

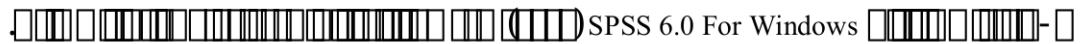
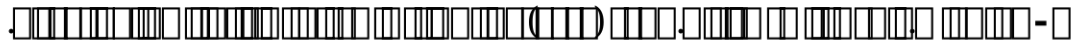
Field No.	R-33	R-103B	R-101	R-101A	R-103	R-103A	R-212	R-212A	R-342	R-342A	R-357	R-357A	R-77	R-247
Au	96	707	224	44	23	105	535	2627	12	49	15	16	573	21
Ag	2.1	4.5	50.8	6.2	25.2	6.4	2.1	62.9	0.6	1.4	14.9	5.0	2.4	124.7
Al	13727	2826	5355	5609	36435	15156	39901	19672	15989	30322	3339	1656	33454	79308
As	180.34	2758	430.50	58.36	49.73	123.60	109.54	110.89	14.07	21.09	126.09	40.53	74.90	36.02
B	72.17	29.76	29.03	28.33	42.99	20.17	38.84	80.92	31.29	61.16	34.67	16.01	94.43	42.09
Ba	6009	464	3673	2492	2671	617	847	611	4574	3270	5384	14631	10824	4359
Be	7.82	1.84	8.83	1.49	1.29	1.04	3.34	3.90	1.44	4.00	16.51	7.19	1.64	1.33
Bi	1.90	2.05	1.27	1.45	1.47	1.43	0.73	< 0.5	0.99	3.73	1.56	< 0.5	1.81	< 0.5
Ca	123312	9990	10762	11468	12959	4201	1320	< 200	6779	11550	1876	< 200	952	3635
Cd	2.05	16.21	27.05	6.32	1.47	5.46	1.02	1.28	0.38	1.67	1.02	0.37	1.88	0.58
Ce	13.95	1.16	7.38	18.71	72.43	17.04	24.12	37.54	17.22	282.95	9.32	18.78	333.59	45.48
Co	21.63	746.78	28.03	23.31	20.32	27.89	53.24	132.08	13.07	32.30	2.69	2.02	13.06	11.07
Cr	53.38	113.26	84.45	41.08	32.23	83.92	65.04	20.61	143.06	42.05	23.29	5.32	29.02	54.17
Cs	26.40	16.29	13.55	17.86	20.64	15.19	16.50	34.72	10.64	34.42	18.83	4.81	22.12	9.79
Cu	1066	8769	9278	3112	9846	795.98	12231	35628	367.76	4278.22	305.85	49.91	12951	7649.68
Dy	2.36	0.47	2.48	9.17	4.38	18.24	4.73	9.09	3.68	35.07	0.51	2.03	9.08	3.69
Eu	0.66	0.58	0.27	0.77	1.93	0.38	1.51	2.54	0.52	12.64	0.84	1.00	5.99	0.61
Fe	112038	81247	63074	75846	101912	60382	84856	180263	46378	182695	71592	23740	122622	50736
Ga	15.86	11.84	18.51	9.04	18.61	9.31	17.19	32.88	6.62	35.45	9.58	2.51	24.57	14.95
Ge	6.42	4.29	3.61	4.35	5.89	3.72	4.45	9.77	2.52	10.57	4.27	0.90	6.23	2.51
Hf	20.47	13.44	12.25	15.59	19.12	13.61	14.66	29.72	8.51	34.24	12.99	3.82	19.75	8.21
Hg	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
K	3896	327	174	363	1888	728	19005	847	2530	1671	< 150	< 150	9307	75663
La	10.01	1.02	130.09	8.14	28.64	4.25	38.96	12.34	11.08	153.08	< 0.3	86.44	214.61	15.48
Li	7.91	13.01	16.97	13.72	25.02	45.76	15.67	11.89	20.87	19.20	25.68	7.10	38.86	26.34
Mg	1583	264	216	348	617	819	329	284	1083	799	127	< 120	9185	1176
Mn	779	700	1733	4573	1506	9410	1174	1434	197	2973	640	137	2485	443
Mo	35.64	32.19	13.26	4.50	5.29	18.26	10.29	9.58	6.41	8.83	2.63	2.07	13.77	2.43
Na	613.89	215.28	< 200	297.48	265.31	536.01	471.62	< 200	417.64	511.31	< 200	< 200	403.15	3979.11
Nb	1.53	< 0.1	< 0.1	< 0.1	1.59	< 0.1	0.47	< 0.1	11.01	0.23	< 0.1	< 0.1	2.27	11.17
Nd	4.03	< 0.6	3.23	6.44	23.75	5.51	10.14	19.29	11.78	182.07	2.34	4.94	153.45	15.75
Ni	114.99	34.05	25.65	17.85	26.85	23.44	42.54	86.90	10.66	22.31	3.54	< 2	32.27	20.40
P	1685	< 6	< 6	537	762	315	42	50	256	1135	82	50	< 6	1758
Pb	80.72	857.55	7687	5910	3143.15	794.45	31.95	190.13	56.97	107.32	253.72	55.31	962.90	80.27
Rb	25.64	15.26	3.33	14.78	22.47	8.02	61.28	4.47	27.36	20.76	12.15	22.06	38.43	395.71
S	1621	1177	3277	2058	2646	795	927	16256	20546	7250	1440	1613	1010	1074
Sb	41.02	61.81	19.45	20.36	13.40	19.42	28.20	67.43	13.59	39.67	6.33	5.38	33.41	8.84
Sc	2.27	1.01	1.95	3.70	9.71	4.85	6.92	7.64	6.09	17.95	2.22	3.07	6.28	11.17
Se	1.90	3.33	2.95	1.56	< 1	4.18	1.61	9.35	1.88	1.92	1.42	< 1	< 1	1.55
Sm	6.67	3.04	2.54	4.10	7.45	2.93	6.57	15.66	3.62	45.37	3.23	2.23	23.87	4.44
Sn	9.64	7.26	6.35	7.79	10.04	6.60	8.09	16.52	4.49	17.94	7.02	2.13	10.52	4.40
Sr	288	46	1480	4364	3073	146	39	25	147	138	2410	565	180	120
Ta	3.34	2.17	2.02	2.50	3.25	2.12	2.44	5.00	1.39	5.63	2.19	0.63	3.31	1.36
Te	0.48	0.36	0.63	0.61	0.58	0.32	0.40	0.77	0.21	0.86	0.34	< 0.1	0.52	0.21
Th	25.73	17.99	12.35	15.43	23.03	13.87	19.33	45.35	13.30	46.59	15.26	4.26	29.14	13.39
Ti	331	22	67	123	1558	197	1239	61	4913	1359	179	85	898	5388
Tl	1.14	1.01	1.00	0.78	0.70	< 0.5	0.80	1.84	< 0.5	1.46	0.79	< 0.5	0.85	< 0.5
U	6.62	4.58	3.92	4.81	6.40	3.93	4.88	9.98	2.72	11.18	4.19	1.20	6.50	2.66
V	65.66	37.19	82.31	96.53	327.69	73.34	79.22	95.51	39.44	153.62	115.93	110.21	346.40	116.22
W	36.84	39.89	85.41	31.66	19.35	23.06	9.12	2.91	5.32	8.81	14.24	5.59	24.95	4.43
Y	12.22	4.20	6.18	9.79	16.43	11.53	15.44	38.16	21.14	142.12	2.86	14.77	28.57	21.03
Yb	2.55	1.02	0.99	1.50	2.91	1.24	2.24	4.32	2.15	6.94	1.13	1.09	3.13	2.68
Zn	2763	1084	2501	1476	2355	1219	501	1188	156	1346	275	95	1307	377

Ba, Au, 

 Fe  Cu, Zn







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پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهازد

ردیف	شماره نمونه	x_c	y_c	Au	Sn	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Hg	K	La	Li	Mg
1	84ES 1	449011	3928890	1.7	3.2	0.6783	78620	6.03	770.6	1.718	1.711	20230	0.1072	66.57	9.261	27.25	3.193	36.50	55550	0.08	24090	29.77	15.49	8298
2	84ES 2	448539	3928757	2.4	3.8	0.4614	75980	7.359	588.7	1.757	1.621	18930	0.1664	73.63	11.62	53.06	3.92	24.97	56550	0.08	20540	31.79	20.46	9726
3	84ES 3	449831	3928635	1.8	2.7	0.5664	70450	5.321	567.1	1.817	2.055	11430	0.409	68.36	10.77	41.91	2.98	41.79	59310	0.10	21500	29.86	18.13	10150
4	84ES 4	453591	3929643	2	3.2	0.6125	73920	7.872	798.6	1.655	2.06	20690	0.1	72.36	11.64	50.73	4.269	48.85	58290	0.09	22880	32.18	18.72	9140
5	84ES 5	454487	3930176	2.1	3.9	0.6056	75640	8.666	785.5	1.708	2.172	20140	0.1411	77.41	13.59	42.47	5.046	45.80	73640	0.08	24520	33.13	18.02	9375
6	84ES 6	453380	3931118	1.6	3.6	0.5159	77050	7.562	672.8	1.678	1.894	24400	0.1937	70.35	12	50.41	3.866	50.90	64750	0.09	22460	30.43	21.56	11100
7	84ES 7	452775	3931262	1.3	2.3	0.7341	79150	7.989	685.5	1.759	1.939	20620	0.3183	72.71	12.56	43.14	4.486	50.03	66410	0.09	22780	31.54	20.34	10420
8	84ES 8	454492	3931563	2.2	3.3	0.7544	77530	8.125	663.2	1.818	1.84	36390	0.2877	66.87	17.86	127.3	5.755	53.25	85770	0.11	24980	29.06	24.85	16000
9	84ES 9	452559	3932342	1.8	3	0.7223	76620	10.28	721.8	1.778	1.739	29220	0.2536	63.85	14.76	75.95	4.856	54.16	71710	0.10	23010	27.92	22.78	12500
10	84ES 10	452582	3932770	1.5	3.2	0.7863	75640	10.32	677	1.818	1.46	25060	0.2847	59.97	15.14	85.91	4.872	52.10	69230	0.09	23600	26.82	23.17	13410
11	84ES 11	454189	3935006	2.6	3.4	0.712	76440	10.73	737.7	1.793	1.706	26790	0.2328	58.52	15.37	86.35	4.783	55.45	71960	0.10	23970	25.60	22.53	12900
12	84ES 12	450591	3931975	2.5	2.7	0.7331	71980	111.1	753.3	1.667	1.495	22360	1.005	66.93	12.47	45.99	4.388	53.90	58140	0.08	22650	30.22	20.35	9593
13	84ES 13	451966	3933286	2.1	3.6	0.7559	75400	12.4	704.2	1.715	1.564	19750	0.3051	65.88	12.71	44.01	4.749	51.18	63200	0.08	23380	30.29	18.23	9379
14	84ES 14	450338	3932182	1.7	3	0.6691	72790	11.19	708.2	1.699	1.46	25740	0.3344	64.12	11.84	54.13	4.068	41.44	55760	0.08	23220	28.85	19.28	9712
15	84ES 15	451607	3934708	1.9	4.8	0.6527	70350	13.95	854.7	1.866	1.82	28930	0.175	69.21	14.95	43.63	6.728	42.20	77690	0.12	19290	31.65	15.31	7974
16	84ES 16	449852	3932859	2	3.6	0.6494	73790	19.49	734.6	1.783	1.455	27590	0.4113	65.17	13.99	69.1	4.445	36.91	61350	0.08	21540	29.00	22.53	11250
17	84ES 17	449178	3932774	1.7	2.6	0.6625	77510	12.4	727.8	1.812	1.395	21040	0.2393	64.03	11.65	46.72	4.039	48.59	56830	0.07	24250	29.69	20.55	9979
18	84ES 18	449264	3933163	1.8	2.5	0.6033	71170	11.18	745.1	1.727	1.315	35320	0.1	63.19	10.31	35.29	3.991	44.91	51700	0.08	23290	28.73	16.74	8747
19	84ES 19	448827	3933035	1.9	2.7	0.7259	71170	11.78	753.8	1.722	1.396	24560	0.1455	61.89	10.43	39.53	3.931	51.32	50910	0.07	23500	28.18	17.60	8676
20	84ES 20	448175	3933442	2.3	3.9	0.5728	74430	15.57	708.7	1.715	1.458	14650	0.2322	72.89	13.77	40.44	5.663	45.28	65550	0.08	24390	32.10	17.13	8759
21	84ES 21	450060	3935336	1.7	2.4	0.5055	71000	8.818	751.3	1.456	1.234	29370	0.1	62.76	12.41	54.69	4.225	42.58	61510	0.08	22130	27.71	18.41	10020
22	84ES 22	449799	3935838	2.1	3.4	0.5542	71510	8.026	650.7	1.477	1.359	27520	0.1894	58.45	13.11	58.27	4.526	40.72	60450	0.08	22220	25.46	20.73	11080
23	84ES 23	449628	3936247	2.2	2.7	0.5029	66950	8.569	625.8	1.432	1.538	38790	0.1585	56.84	12.4	62.71	4.375	38.89	56310	0.10	19930	24.71	19.25	10790
24	84ES 24	446044	3936818	1.7	4.2	0.6054	64090	11.13	709.2	1.757	1.943	22000	0.1264	55.33	13.57	42.51	5.138	38.85	52990	0.08	21420	29.27	15.48	7227.00
25	84ES 25	446801	3937304	1.6	3.8	0.5515	64480	6.926	666	1.629	1.314	23260	0.1127	64.17	10.24	38.73	4.117	47.86	51210	0.08	22400	30.49	15.30	7539
26	84ES 26	446014	3934854	1.4	3	0.3421	68440	7.512	674.1	2.063	0.5416	22720	0.3172	60.53	11.75	54.32	4.278	29.15	47240	0.10	24090	32.04	18.77	7947
27	84ES 27	446562	3934084	2.1	2.3	0.5012	71380	8.331	767.7	2.219	0.4145	25330	0.3406	62.03	11.94	41.38	4.051	27.05	50840	0.10	24820	32.18	19.16	8435
28	84ES 28	447044	3934693	1.8	3.8	0.4356	68600	8.725	701.5	1.797	0.6795	27500	0.3363	68.7	12.67	38.77	4.847	28.29	55250	0.11	21680	25.52	16.49	7744
29	84ES 29	444649	3933080	2.3	2.8	0.5045	70250	9.337	643.7	1.927	1.025	20870	0.3953	62.41	13.33	49.62	4.624	37.22	52840	0.10	22110	32.61	20.84	8712
30	84ES 30	443736	3934600	1.8	2.6	0.5186	74120	5.815	691.5	2.274	0.5439	18580	0.2922	63.75	11.43	26.55	3.843	26.68	49820	0.09	22670	32.64	13.54	6501
31	84ES 31	442479	3934646	1.9	3.4	0.4685	71390	8.17	733.3	2.315	1.189	18820	0.3168	62.82	10.05	28.17	3.271	50.29	48330	0.08	23140	32.07	13.21	6628
32	84ES 32	440532	3933543	3.1	2.3	0.3487	74540	10.56	709.2	2.014	1.023	31840	0.2927	55.41	11.8	49.27	3.937	80.98	48450	0.09	29650	28.66	17.60	8826
33	84ES 33	441729	3932972	2.2	3.2	0.4428	65890	10.05	650	1.987	1.712	21680	0.2798	59.99	12.43	37.02	4.389	71.94	56110	0.10	24150	31.26	13.99	6897
34	84ES 34	440234	3932690	1.8	3.4	0.3434	67940	7.193	626.4	1.886	0.8451	29550	0.2649	58.9	10.44	34.08	3.922	32.05	43780	0.09	22830	29.97	15.77	6951
35	84ES 35	441685	3931581	1.9	3.4	0.5343	67670	5.228	532.7	1.775	1.642	26330	0.3952	49.47	14.42	47.61	4.171	55.78	54160	0.12	18950	25.25	17.36	12240
36	84ES 36	438483	3933115	2.6	2.6	0.3338	64240	9.423	662.5	1.831	1.992	29270	0.3214	56.26	12.52	44.8	4.842	49.92	53780	0.10	22390	28.77	16.54	7145
37	84ES 37	448025	3939613	1.5	3.7	0.4228	66220	11.17	677	1.706	0.7303	41830	0.3696	52.76	15.44	66.26	6.011	33.44	53200	0.11	23470	26.52	20.93	10390
38	84ES 38	447765	3940085	1.5	3.2	0.315	65360	8.186	583	1.701	0.9814	34740	0.3773	50.99	14.8	49.27	5.391	43.10	51220	0.11	23270	25.25	19.86	10590
39	84ES 39	449631	3940400	1.6	2.3	0.4703	68030	8.451	611.3	1.766	0.7295	36750	0.38	52.51	14.22	53.01	5.655	36.37	49170	0.11	23280	26.53	21.97	11060
40	84ES 40	450127	3943491	1.5	2.3	0.3207	69660	7.875	566.5	1.89	1.234	39420	0.3299	60.74	17.16	68.82	7.095	32.80	54230	0.11	22650	31.30	20.00	12240
41	84ES 41	450548	3943300	1.9	2.7	0.3897	67980	8.474	557.6	1.787	1.334	36420	0.416	57.55	16.89	76.92	6.707	31.68	54530	0.12	20710	29.55	23.62	12790
42	84ES 42	451229	3944362	1.9	4.7	0.4706	72910	61.07	598.2	2.095	1.333	35200	0.4652	62.96	19.89	73.93	7.636	55.64	64980	0.13	22890	31.51	22.60	12770
43	84ES 43	452314	3945110	1.6	1.9	0.4077	69560	42.8	553.8	2.002	0.4915	33750	0.4159	51.97	16.9	62.92	6.313	36.62	54320	0.13	23630	26.45	20.67	11260
44	84ES 44	453159	3944687	2.6	2.7	0.4056	73600	17.49	626.3	2.038	1.286	34210	0.3944	59.84	20.44	73.93	7.617	57.61	63400	0.13	22690	29.89	19.74	11280
45	84ES 45	454183	3945258	2.8	2.3	0.4537	71460	20.03	499.9	1.91	1.296	39530	0.5651	54.63	17.37	73.35	5.78	47.12	55480	0.13	21450	27.44	25.34	13040
46	84ES 46	454634	3945037	1.9	2.7	0.4351	74910	21.78	556.5	2.027	0.9105	29760	0.4609	62.42	18.45	74.08	6.524	42.54	55990	0.13	23410	30.91	24.96	13540
47	84ES 47	454166	3942934	1.9	2.8	0.3953	69330	20.88	497	1.859	2.195	40480	0.4881	59.53	21.93	116.9	9.162	53.69	77990	0.15	20810	29.32	21.69	14480
48	84ES 48	452250	3942249	1.9	2.2	0.3299	67350	21.04	601.9	1.756	1.613	41830	0.4108	57.73	18.3	76.2	7.39	47.64	64140	0.14	20450	28.93	21.39	12480
49	84ES 49	449024	3943177																					

پوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهازد

ردیف	شماره نمونه	x_c	y_c	Au	Sn	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Hg	K	La	Li	Mg
51	84ES 51	447412	3942740	2.2	2.7	0.3982	66420	7.048	542.3	1.93	0.8736	30770	0.3544	57.06	15.09	63.49	6.415	35.40	52660	0.11	22620	29.15	20.58	10920
52	84ES 52	446596	3942703	2.6	2.9	0.3784	71350	7.116	654	2.012	0.966	29870	0.4053	57.75	16.82	49.79	6.42	37.22	53530	0.12	24250	28.00	21.26	12540
53	84ES 53	445905	3942322	1.6	4	0.3645	69600	6.434	513.7	1.81	1.407	35100	0.4298	53.16	17.52	45.2	5.858	46.31	54330	0.13	21590	25.36	21.03	14070
54	84ES 54	443382	3941821	2.1	3.8	0.4789	65410	10.46	714.4	1.855	0.966	35020	0.3283	58.67	16.36	60.53	6.932	31.50	56740	0.11	22780	28.93	19.06	10650
55	84ES 55	444065	3942425	1.3	1.5	0.4179	61460	14.34	594.1	1.484	0.651	77140	0.3887	45.21	13.28	44.2	5.065	33.18	43700	0.13	25390	20.88	19.83	9796
56	84ES 56	442537	3941730	1.5	3.2	0.5435	71830	6.536	1334	1.793	2.869	47770	0.4324	58.3	22.46	115.2	10.68	34.07	75320	0.13	22050	30.17	13.90	10070
57	84ES 57	444237	3937608	1.6	3.8	0.3137	58850	8.438	587.2	1.533	0.8397	45060	0.3338	46.18	10.47	41.09	3.957	29.59	41810	0.11	17300	22.57	17.25	7767
58	84ES 58	444223	3937021	1.5	2.1	0.3377	62300	7.147	624.5	1.69	1.416	30450	0.2536	51.89	9.413	31.61	3.556	28.77	41700	0.09	19400	26.25	14.35	5918
59	84ES 59	443363	3937798	1.9	4	0.3615	61350	7.898	545.9	1.563	1.018	37980	0.3416	46.03	13.18	55.78	4.696	32.72	50290	0.11	17190	22.33	19.30	9421
60	84ES 60	443375	3937271	1.8	1.6	0.3279	57020	9.069	706.4	1.648	1.228	39940	0.3245	47.78	10.34	39.57	4.255	33.37	44370	0.10	17670	23.79	13.55	6289
61	84ES 61	441353	3939733	2.3	2	0.4051	62900	6.841	471.3	1.647	1.075	40700	0.5066	45.5	16.01	33.18	4.335	27.28	51090	0.12	14770	21.36	19.09	11080
62	84ES 62	439703	3941947	2.5	3.2	0.4675	68500	6.571	930.8	1.727	1.987	40580	0.4682	55.17	21.43	96.17	8.42	40.50	73020	0.14	19130	26.77	17.98	11990
63	84ES 63	439417	3939828	2.9	3.7	0.3348	65840	8.857	573.4	1.671	0.5863	34910	0.4442	48.49	13.2	58.38	4.86	30.03	50530	0.11	17150	23.12	20.20	9817
64	84ES 64	439127	3938171	1.3	3	0.4691	60750	6.309	573.3	1.546	2.742	41990	0.5389	50.13	21.73	106.5	9.196	34.50	77060	0.14	16630	24.23	15.30	10200
65	84ES 65	438201	3939536	2	3.8	0.4505	63680	8.746	736	1.62	1.417	42610	0.3655	49.8	15.76	73.12	5.723	30.48	53760	0.12	18050	24.50	17.49	9988
66	84ES 66	437923	3939537	2.5	2.7	0.387	58330	7.994	631.5	1.517	0.8189	40400	0.312	43.78	11.39	48.05	3.819	25.19	42400	0.12	17310	21.89	16.81	8680
67	84ES 67	437368	3936416	2.8	3.2	0.3321	56980	8.057	602.2	1.481	1.095	40460	0.3457	44.7	10.92	43.52	3.939	24.25	42120	0.11	17330	22.63	17.04	7308
68	84ES 68	436847	3936668	1.6	2.1	0.3904	66790	14.81	639.1	1.613	0.8535	33840	0.3458	50.65	13.24	34.8	5.114	29.73	49250	0.11	19870	26.29	20.68	8115
69	84ES 69	439437	3935606	1.8	4	0.3543	53850	10.14	550.8	1.457	1.52	48620	0.321	41.99	11.08	48.67	4.673	34.69	45400	0.11	16220	20.76	15.56	6942
70	84ES 70	439379	3935242	1.7	4	0.4031	60050	9.482	710.8	1.732	1.756	29060	0.3811	53	15.31	58.67	6.282	47.07	63540	0.11	19110	26.56	15.76	7340
71	84ES 71	435237	3936018	1.7	2.3	0.3976	61810	11.72	1020	1.498	0.1	35820	0.2163	41.79	9.899	36.23	3.057	19.84	40860	0.10	23100	22.79	19.11	6662
72	84ES 72	433721	3934978	2.5	3.6	0.3316	60420	10.15	777.5	1.56	0.128	31490	0.3497	38.73	12.92	64.44	3.716	21.32	50480	0.11	24420	20.07	17.56	9436
73	84ES 73	432814	3935575	1.7	2.5	0.3199	64390	12.24	765.1	1.599	1.098	40850	0.3759	41.6	16.13	85.32	4.381	36.93	56100	0.12	26540	20.94	19.65	12560
74	84ES 74	435030	3937837	1.8	2.6	0.3367	66260	11.82	571.1	1.51	1.108	32020	0.3511	46.88	12.46	29.4	4.869	28.94	48840	0.11	18570	23.63	18.53	7065.00
75	84ES 75	435949	3938150	2.6	4.8	0.4009	60530	13.1	673.3	1.594	0.9545	44320	0.3455	46.1	11.62	34.04	4.546	26.02	46630	0.11	18120	23.84	20.97	7264
76	84ES 76	436137	3938442	1.8	2.8	0.3344	55130	5.809	681.3	1.677	0.3036	46980	0.193	50.81	7.384	23.42	3.101	13.93	33460	0.09	19460	25.37	14.79	5441
77	84ES 77	437779	3942094	2	3	0.4406	59010	7.804	835.7	1.597	1.447	53470	0.7104	50.06	19.16	97.38	7.011	74.03	68640	0.14	17650	24.13	15.85	10400
78	84ES 78	438367	3942886	2.8	2.8	0.3992	61750	9.239	967	1.583	1.022	31870	0.4401	47.87	14.42	53.56	4.932	34.22	51830	0.12	20170	23.72	20.26	9337
79	84ES 79	438369	3946180	1.9	2.7	0.4033	63510	7.407	598.9	1.55	1.444	22520	0.3714	76.3	13.16	29.37	6.254	28.94	64130	0.13	18940	38.14	16.31	8014
80	84ES 80	439411	3947680	2.1	2.7	0.4002	70380	10.55	592.4	1.689	1.055	27310	0.4973	53.93	16.29	47.1	5.798	38.89	54890	0.12	22550	25.97	20.59	10710
81	84ES 81	442727	3928866	1.7	4.4	0.355	69080	7.387	569.7	1.675	0.7596	23760	0.4611	63.61	12.61	43.87	4.284	30.91	51840	0.12	19390	31.74	21.29	9829
82	84ES 82	441634	3928928	1.6	4.8	0.4199	68100	6.577	552.1	1.365	1.548	26240	0.4725	44.53	17.09	37.83	5.732	38.41	60310	0.13	18730	20.37	20.84	11160
83	84ES 83	443637	3930400	1.6	4.6	0.3154	66900	4.427	586.6	1.681	0.4492	15430	0.3116	64.79	8.333	21.7	2.875	18.86	42990	0.09	21630	32.63	13.46	6745
84	84ES 84	440055	3929925	2.3	2.8	0.425	59860	8.894	574.3	1.48	0.4561	40020	0.302	44.05	9.34	33.41	3.083	23.07	38330	0.10	18820	22.50	17.86	7395
85	84ES 85	440468	3930858	1.2	2.8	0.3334	68610	7.904	549	2.058	0.2651	28560	0.3595	59.63	11.7	58.04	3.436	30.08	44320	0.10	21240	29.25	25.65	10030
86	84ES 86	438643	3931046	1.2	3.4	0.4667	65960	7.761	585.1	2.015	1.84	25190	0.2216	54.54	11.72	36.89	4.162	46.83	44790	0.07	20910	27.93	19.02	10080
87	84ES 87	436049	3931174	1.6	1.9	0.3535	63860	11.81	678.4	1.743	2.575	32970	0.2476	52.05	12.7	48.93	5.398	39.02	55380	0.08	21530	27.00	17.24	7197
88	84ES 88	434127	3930545	1.5	2.8	0.2642	66480	14.89	968.9	1.512	2.12	37860	0.175	45.01	12.62	60.17	4.333	24.61	55330	0.08	26690	23.89	20.40	8651
89	84ES 89	435193	3932859	1.4	2.4	0.2452	64790	14.33	705.7	1.561	2.467	37690	0.2364	48.22	13.16	56.3	5.004	35.65	58310	0.09	23070	25.13	20.99	8447
90	84ES 90	435558	3934293	2.2	2.4	0.3178	69070	16.99	695	1.547	1.982	40790	0.239	50.47	12.34	34.16	5.123	31.71	49980	0.09	21650	27.23	20.96	7283
91	84ES 91	431827	3934794	2	2.1	0.2005	68400	16.81	972.9	1.569	2.033	28220	0.1842	50.77	12.3	35.62	4.38	19.83	54770	0.07	26090	27.39	19.43	7204
92	84ES 92	431103	3934153	2	2.4	0.269	67880	14.14	720	1.641	2.362	37600	0.2379	48.24	13.23	42.82	4.649	26.08	56530	0.09	25510	25.13	20.05	8467
93	84ES 93	429642	3935089	2	4	0.2929	68030	14.94	887.5	1.652	2.302	30670	0.1971	47.3	13.24	44.77	4.267	37.23	58180	0.08	27500	25.12	20.50	8393
94	84ES 94	430692	3933159	1.8	1.9	0.2316	69340	15.02	796.3	1.692	0.3302	45640	0.2415	48.97	13.69	50.44	4.439	37.50	58320	0.12	26280	25.08	22.30	9931
95	84ES 95	429221	3933736	1.7	2.8	0.2611	71080	17.12	819.6	1.76	4.531	24490	0.2508	53.55	14.34	57.87	4.692	35.83	67640	0.11	29390	28.16	23.12	9495
96	84ES 96	427763	3932347	2	1.9	0.2845	66220	16.71	709.3	1.562	2.516	53290	0.265	47.79	12.82	54.23	3.828	37.71	49160	0.10	26350	24.47	26.17	9262
97	84ES 97	427852	3931045	1.8	2.8	0.6124	71650	20.92	644.3	1.253	2.616	53670	0.9824	39.71	17.81	37.5	5.84	65.04	62120	0.09	20270	18.58	23.70	11240
98	84ES 98	426540	3935027	1.7	3.4	0.2918	62510	18.71	726.2	1.362	1.601	43650	0.3208	48.03	14.87	50.98	4.613	62.95	57290	0.09	23240	24.35	24.39	9010
99	84ES 99	426831	3934836	1.5	2.3	0.																		

پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهازد

ردیف	شماره نمونه	x_c	y_c	Au	Sn	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Hg	K	La	Li	Mg
101	84ES 101	424652	3934162	1.8	3.2	0.4447	71690	18.59	710.7	1.289	2.531	43230	0.8779	43.53	16.79	43.57	5.624	60.45	63800	0.09	22250	20.48	22.97	9557
102	84ES 102	424591	3935121	1.3	2.7	0.4336	74150	19.32	543.5	1.088	3.169	56840	0.5716	37.66	19.04	31.22	7.07	60.68	70360	0.12	16860	16.57	28.87	11380
103	84ES 103	425336	3935746	2	2.7	0.9661	69830	25.55	662.2	1.165	3.299	60550	1.414	40.27	20.35	42.76	7.076	77.38	76260	0.12	17790	17.51	24.43	11930
104	84ES 104	423318	3935267	2.8	2.2	0.3507	65790	18.38	539.2	1.233	4.046	63820	0.3739	44.02	20.12	49.5	8.693	56.32	91580	0.14	15220	19.37	24.19	11090
105	84ES 105	424084	3933523	1.9	2.8	0.2662	65110	12.57	812.9	1.316	2.133	38460	0.1863	43.53	12.91	23.36	3.735	38.61	51260	0.09	27200	22.41	19.83	6801
106	84ES 106	422546	3933232	2	2.2	0.2552	67990	14.37	574.3	1.478	1.658	38570	0.2593	47.64	10.75	33.85	3.977	32.55	44390	0.08	22500	23.51	22.84	7401
107	84ES 107	424390	3931973	1.8	2.4	0.2425	61830	19.83	609.8	1.33	1.707	46550	0.568	42.91	9.428	21.77	3.734	33.51	41990	0.08	21630	21.35	20.36	6403
108	84ES 108	424050	3931039	2	3.2	0.2	61520	16.62	549.6	1.452	1.629	39610	1.005	48.88	9.714	32.52	3.717	31.41	42190	0.09	18300	23.62	19.49	7595
109	84ES 109	420589	3931176	1.5	3.2	0.2062	69550	11.96	557.6	1.539	2.156	33650	0.2719	51.24	13.18	46.5	5.083	40.56	52580	0.09	20450	24.53	23.70	9741
110	84ES 110	422204	3930475	1.6	4.6	0.2	64760	9.289	562.6	1.427	1.798	50750	0.2701	50.38	10.86	33.63	4.787	31.41	44730	0.10	19990	24.23	21.20	8083
111	84ES 111	421572	3929807	1.7	3.9	0.2347	66860	9.81	636.8	1.617	2.383	35420	0.2252	61.58	11.53	30.38	5.287	21.52	53530	0.09	24000	31.25	18.03	7719
112	84ES 112	420225	3928946	2	2.8	0.2244	66770	17.75	638.1	1.622	1.896	32310	0.1992	62.19	10.63	30.87	5.395	20.42	47070	0.08	25160	30.14	17.78	7129
113	84ES 113	423764	3928972	2	2.9	0.2	65750	12.25	621.2	1.528	2.159	43830	0.2764	54.95	12.5	48	5.225	33.82	49740	0.10	20700	26.50	24.24	9424
114	84ES 114	436258	3942088	2.3	3.8	0.2914	61810	10.25	1126	1.397	1.424	37400	0.2362	50.11	14.79	47.21	7.388	32.31	64690	0.09	25560	24.17	16.96	7181
115	84ES 115	436232	3941785	1.8	3.9	0.4869	75870	10.64	668.7	2.142	1.413	29610	0.2222	64.08	12.45	45.71	5.473	30.25	53680	0.07	27990	30.68	21.97	8297
116	84ES 116	437154	3943264	2.3	2.5	0.2903	63170	13.69	833	1.351	1.679	51800	0.2226	47.38	13.27	42.23	5.571	33.08	50160	0.09	22830	22.22	21.44	9144
117	84ES 117	435614	3943025	2.4	3.2	0.2419	75280	9.422	938.3	1.23	2.175	40240	0.2528	44.29	19.2	44.68	7.903	47.26	70720	0.10	17670	19.05	17.97	12090
118	84ES 118	434872	3941979	1.7	3.9	0.2392	62670	10.06	676.4	1.522	1.506	39260	0.1841	43.54	11.75	54.32	4.6	31.53	45760	0.08	22090	20.94	22.85	8610
119	84ES 119	435177	3942016	1.8	2.6	0.2845	63320	7.089	612.2	1.781	0.7576	17310	0.156	52.27	9.182	34.41	3.882	24.75	37160	0.06	23660	25.89	19.10	6573
120	84ES 120	434398	3942706	1.5	2.4	0.2426	70130	9.924	882.1	1.273	1.481	41700	0.2352	44.11	14.67	41.25	5.489	42.19	51110	0.09	18880	19.81	20.32	10760
121	84ES 121	434541	3943087	1.8	4.7	0.2031	72480	11.57	689.8	1.049	3.123	42230	0.2127	36.6	19.11	49.77	7.735	51.33	69470	0.11	13570	15.06	18.86	13520
122	84ES 122	432802	3942107	1.9	2.5	0.2975	64870	14.38	570.7	1.434	2.123	35840	0.2121	42.53	14.26	61.18	5.754	31.57	63160	0.10	22370	20.04	28.45	10040
123	84ES 123	432527	3941954	2.1	3.2	0.3094	64770	13.89	491.9	1.354	2.692	41780	0.2133	38.96	19.87	143.7	6.621	38.75	74320	0.11	21380	16.88	37.13	18710
124	84ES 124	432370	3943751	1.8	3.8	0.3044	69540	13.59	566.6	1.44	2.619	54340	0.2132	55.02	19.43	79.6	9.67	37.81	69880	0.11	19160	25.02	19.98	10870.00
125	84ES 125	432304	3943354	1.8	2.7	0.2437	67630	8.654	913.6	1.163	2.462	44690	0.2004	40.62	15.12	48.57	7.301	35.96	54330	0.10	17590	18.04	15.49	9016
126	84ES 126	433544	3944865	2.9	2.9	0.2223	72000	15.48	892.7	1.246	2.045	47640	0.3149	42.19	16.06	49.18	6.156	48.56	51620	0.10	18150	18.13	20.09	11910
127	84ES 127	433665	3945590	1.8	3.2	0.2939	73780	10.11	545.7	1.438	2.35	29870	0.3746	51.1	16.99	49.69	7.573	43.33	61610	0.10	20360	22.50	25.65	11960
128	84ES 128	430643	3944347	1.7	3.8	0.3946	70820	20.28	651	1.333	2	49020	0.2706	48.24	16.19	52.74	6.592	37.33	53890	0.11	20380	21.88	25.67	11130
129	84ES 129	431400	3943132	2	2	0.2804	62890	15.76	489.8	1.251	2.304	51270	0.2188	39.93	16.16	74.88	6.314	28.47	52470	0.11	19360	18.10	27.07	12320
130	84ES 130	429916	3942964	2	3.4	0.351	64990	22.32	508.1	1.338	3.014	44180	0.3512	47.95	20.22	77.29	9.304	38.44	76540	0.12	16810	21.75	21.85	9504
131	84ES 131	428026	3943035	1.5	3.2	0.3189	70200	9.669	505.8	1.274	1.164	44600	0.2817	45.26	15.63	39.99	6.255	38.49	50040	0.10	16110	21.09	21.11	9311
132	84ES 132	427833	3942487	1.8	3.4	0.3671	68330	81.05	520.2	1.448	2.615	37180	0.5182	51.72	19.33	79.76	8.531	38.16	73930	0.10	20130	22.59	23.92	9557
133	84ES 133	430058	3941987	2.3	2.7	0.346	64410	24.45	685.7	1.249	1.392	45570	0.2608	42.66	12.67	43.19	4.93	28.47	45350	0.10	21740	19.33	23.35	8713
134	84ES 134	430338	3942070	2.2	2.3	0.3566	58760	21.2	737.2	1.226	3.358	40420	0.2538	43.67	14.64	71.24	6.726	30.39	78810	0.11	21680	20.49	20.58	7631
135	84ES 135	430925	3941546	2.2	2.5	0.2778	62570	14.14	539.8	1.22	2.389	42100	0.2271	39.41	15.71	77.77	5.863	28.90	64940	0.11	17700	17.60	28.17	13310
136	84ES 136	431394	3942173	2.1	3.3	0.2552	47020	31.33	403.5	1.719	7.502	35350	0.3633	53.72	20.74	126.7	10.04	24.87	162200	0.17	14640	21.66	25.75	11080
137	84ES 137	429829	3938460	1.6	1.7	0.2	58090	13.78	642.4	1.179	1.611	34230	0.1632	39.55	12.25	52.19	4.464	24.37	45740	0.09	20140	18.77	22.34	7763
138	84ES 138	430386	3939241	3.6	2.7	0.3779	76090	19.88	920.6	1.916	1.217	41790	0.1601	55.43	17.92	61.34	6.907	39.37	74920	0.09	28310	28.98	36.02	11320
139	84ES 139	430594	3939499	1.3	2.3	0.2466	56670	21.51	471.5	1.461	3.439	33230	0.137	34.8	11.39	42.38	4.106	40.90	44530	0.12	19540	18.96	18.93	8152
140	84ES 140	429750	3940727	2.1	4.7	0.5781	59150	42.58	1027	1.875	2.623	51150	0.1837	48.29	20.33	52.31	8.015	32.74	101300	0.11	21790	22.50	20.87	9280
141	84ES 141	428805	3941506	1.7	2.7	0.3548	65490	31.93	519.8	1.771	1.767	46880	0.1574	44.11	17.63	90.54	8.186	34.06	84820	0.09	14590	21.79	14.22	9240
142	84ES 142	427695	3939607	2.4	3.6	0.2	45560	25.95	551.4	1.151	1.475	23960	0.099	30.63	9.866	38.64	3.971	18.95	41920	0.09	10570	16.88	9.49	6714
143	84ES 143	428005	3939625	1.6	3.2	0.2	42450	23.4	540.7	1.115	2.164	35400	0.1771	25.16	12.99	38.54	3.953	27.17	50220	0.10	7763	15.29	7.82	7441
144	84ES 144	427090	3941345	2.1	3.3	0.3887	56340	64.25	371.7	1.512	2.47	28350	0.1862	30.63	17.97	69.69	6.815	30.58	75400	0.10	6164	16.12	11.08	10600
145	84ES 145	425855	3940204	1.9	3.6	0.2772	47730	62.14	1307	1.429	1.196	15970	0.2585	36.32	9.182	36.42	3.39	15.40	42800	0.08	9634	19.57	8.72	6252
146	84Es 146	424820	3939813	2.3	3.4	0.5651	69090	29.92	2690	1.735	2.114	36320	0.0797	53.75	16.13	71.17	5.013	33.75	58550	0.10	23200	26.27	27.34	11030
147	84Es 147	423409	3939635	1.7	2.5	0.616	63640	38.12	2426	1.696	2.831	41430	0.1334	56.21	18.04	73.42	6.56	29.41	80000	0.11	22550	26.47	24.44	9801
148	84Es 148	424969	3938095	1.5	2.5	0.4942	65780	26.81	2062	1.488	1.966	73080	0.1183	45.47	16.41	58.66	4.932	31.19	61570	0.11	18480</			

ردیف	شماره نمونه	X_c	Y_c	Au	Sn	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Hg	K	La	Li	Mg
151	84Es 151	421258	3937512	2.3	2.9	0.39	62880	17.75	650.6	1.392	1.221	55050	0.3041	41.04	13.22	45.29	4.588	26.09	47820	0.10	20560	20.82	21.52	8832
152	84Es 152	421932	3938043	1.8	3.5	0.5017	62060	24.71	2165	1.591	1.484	37610	0.1073	49.43	14.55	59.07	4.912	26.62	56200	0.09	21400	24.66	23.75	9032
153	84Es 153	422090	3937492	1.4	4.8	0.5214	64180	23.83	873.4	1.586	2.288	44280	0.2697	49.37	16.29	54.61	6.485	28.67	64830	0.11	21960	24.49	24.20	9368
154	84Es 154	445780	3961953	1.6	2.4	0.31	56790	10.01	531.5	1.355	1.511	52680	0.1388	41.37	13.6	53.26	5.332	15.81	48310	0.09	16950	20.67	19.91	9354
155	84Es 155	447442	3963581	1.5	2.9	0.3017	57530	8.485	530.4	1.342	1.076	50400	0.1554	37.28	10.74	40.78	3.803	11.36	37530	0.08	17240	18.99	19.03	8027
156	84Es 156	453159	3962454	1.8	2.1	0.2994	43580	11.31	553.9	1.06	1.026	97320	0.2139	34.66	11.07	39.03	3.002	16.60	31990	0.10	14400	16.40	21.70	9271
157	84Es 157	452595	3963179	1.8	2.5	0.2967	41100	12.64	575.7	1.066	1.237	101700	0.1935	34.48	11.69	43.95	2.822	20.57	33690	0.10	14240	15.88	24.96	12080
158	84Es 158	450832	3964076	1.2	1.8	0.3205	39240	10.28	668.3	1.073	1.142	101300	0.1785	33.24	10.31	40.82	2.898	16.17	31500	0.11	14530	15.37	27.77	12190
159	84Es 159	449347	3963835	1.8	2.9	0.2917	49290	10.92	691.4	1.219	1.602	68780	0.7371	37.89	12.83	49.94	4.661	16.33	44090	0.10	15170	18.32	21.41	9181
160	84Es 160	446598	3960232	1.7	2.4	0.2413	50540	10.65	749.2	1.16	1.093	58350	0.1935	34.56	10.39	36.83	3.565	10.86	35050	0.08	15230	16.97	17.23	8085
161	84Es 161	450471	3960701	1.3	2.7	0.3066	39840	11.15	434.4	1.008	0.99	104300	0.1087	32.74	11.44	39.41	3.367	15.81	32490	0.10	13410	15.25	19.48	8424
162	84Es 162	451403	3960399	1.2	2.8	0.2394	33120	10.33	634.8	0.8149	1.156	110200	0.0719	28.18	10.35	31.43	2.897	13.64	28870	0.09	10630	12.77	15.12	5414
163	84Es 163	450839	3959930	1.4	1.6	0.3302	50220	12.74	947.6	1.319	1.124	80160	0.1384	40.69	12.93	50.55	3.545	22.14	38120	0.11	16800	19.44	27.59	10990
164	84Es 164	449510	3959333	1.6	2.4	0.4155	43510	13.62	1046	1.11	0.9965	99900	0.2111	38.47	13.97	46.8	4.066	20.91	37200	0.11	14330	18.01	27.75	9773
165	84Es 165	442610	3958362	1.8	2.8	0.2434	56210	7.645	492.4	1.354	0.8341	41440	0.0947	40.26	11.23	49.59	4.319	8.40	38480	0.07	16020	21.46	15.55	7073
166	84Es 166	441468	3957150	2.4	2.1	0.2626	55160	6.394	459.1	1.284	0.5776	52990	0.0861	35.2	7.993	32.53	2.939	6.27	28690	0.07	17900	18.28	15.70	7604
167	84Es 167	440675	3958200	1.8	4.6	0.2471	52750	9.101	430.3	1.302	0.708	56600	0.1037	37.28	10.33	47.49	3.721	9.72	33350	0.08	16660	19.42	17.17	8983
168	84Es 168	439027	3956628	1.4	2.5	0.2743	49400	9.665	589.3	1.225	1.086	42090	0.0778	40.29	11.59	38.29	4.68	11.23	41560	0.08	14200	20.93	15.31	7228
169	84Es 169	453922	3951203	1.8	3.5	0.5851	64000	12.49	574.4	1.931	1.114	36290	0.1805	52.76	12.75	53.42	4.823	22.46	42820	0.08	23770	27.97	19.93	8721
170	84Es 170	453486	3950961	1.4	3.1	0.5524	66620	12.86	600.8	2.025	1.21	28370	0.2669	55.39	13.21	48.99	5.125	24.86	45360	0.08	24330	28.96	20.46	8684
171	84Es 171	451963	3949985	2	3.4	0.5453	75280	17.24	530.6	2.398	2.302	28950	0.2537	53.28	19.23	91.18	5.719	29.42	62060	0.10	28130	27.10	19.04	12440
172	84Es 172	453028	3948258	2.1	2.6	0.5483	77550	15.04	570	2.567	2.006	24890	0.1863	54.17	19.27	87.25	5.803	27.53	60920	0.09	28590	27.59	19.43	12050
173	84Es 173	451393	3950153	1.8	3	0.467	69090	13.94	1517	2.355	1.56	22830	0.0961	54.69	15.08	54.37	5.122	29.77	54880	0.08	26460	28.94	17.37	8861
174	84Es 174	450426	3950227	3	3.4	0.4861	63570	11.62	625.9	2.187	1.014	33850	0.1742	49.43	13.69	48.34	5.505	26.67	48680	0.08	24490	27.32	16.17	8193.00
175	84Es 175	450934	3951934	2.6	2.8	0.4546	62640	13.75	989	2.139	1.919	26960	0.1023	52.19	16.04	70.9	5.99	30.98	65520	0.09	24370	27.43	16.02	8721
176	84Es 176	448864	3949807	2.1	2.2	0.5047	65140	14.09	520	2.229	1.587	34720	0.3991	50.46	14.12	52.23	4.645	29.53	46850	0.09	24080	26.43	17.38	9149
177	84Es 177	450307	3948312	1.5	2.7	0.4718	69970	17.25	563.5	2.296	2.079	19610	0.6097	54.87	17.77	57.54	5.93	35.23	55320	0.09	25130	28.48	17.11	9380
178	84Es 178	451769	3947833	1.8	3.7	0.5156	66440	13.11	559.6	2.133	1.779	15190	0.2444	55.22	16.13	53.43	5.778	26.53	52990	0.08	22510	27.90	19.40	8706
179	84Es 179	449557	3947441	1.8	2.8	0.5369	69220	15.95	629.7	2.183	1.954	18240	0.2484	57.45	18.07	60.45	6.438	28.11	60960	0.10	23970	29.43	18.11	10930
180	84Es 180	448140	3949801	4	3.9	0.6009	69000	19.7	673.1	2.267	2.248	20520	0.2641	61.66	19.26	62.85	7.629	27.93	69420	0.10	24880	31.47	16.37	10640
181	84Es 181	447862	3948401	1.7	3.2	0.5456	69590	11.98	629.6	1.97	2.343	30730	0.146	56.48	19.97	55.57	6.996	29.60	72050	0.10	21390	28.32	17.33	12250
182	84Es 182	446953	3949832	1.7	5	0.5012	63550	11.93	623.8	1.801	1.569	51250	0.1672	49.31	16.66	64.06	5.913	27.98	54260	0.10	20990	25.62	20.89	11410
183	84Es 183	446612	3950111	1.8	4.7	0.5359	59750	17.47	695	2.022	2.321	43780	0.1674	51.26	16.86	66.52	6.71	20.79	72540	0.11	23300	27.26	18.59	9004
184	84Es 184	446292	3947715	1.6	3.2	0.5115	67850	12.88	615.6	1.945	2.238	28170	0.1501	55.86	17.55	41.14	6.357	39.32	58280	0.10	23250	29.18	13.72	9648
185	84Es 185	445676	3949753	3.1	4.2	0.5135	56150	11.6	657.1	1.615	1.576	38390	0.1894	42.12	12.87	39.94	4.245	25.95	45460	0.08	23060	22.23	17.73	7955
186	84Es 186	444775	3948539	1.9	3.6	0.5284	67750	16.15	702.7	2.142	2.044	21590	0.1803	57.97	18.23	56.01	5.574	37.69	57320	0.10	22070	29.46	17.44	10790
187	84Es 187	445123	3946079	1.6	2.9	0.53	66820	10.05	741.6	2.204	2.02	17800	0.2119	60.65	18.36	59.01	5.006	38.58	57580	0.09	21550	30.72	15.95	10920
188	84Es 188	445433	3946305	2.5	3.4	0.4646	65960	16.86	590.8	2.023	1.533	14460	0.2048	59.09	17.1	58.92	5.323	32.82	53490	0.08	19510	29.88	17.67	9794
189	84Es 189	443876	3949859	1.4	3.2	0.5119	59740	17.2	631.7	1.949	1.801	25230	0.1733	50.51	18.2	62.2	4.854	30.45	58590	0.10	17580	26.27	14.28	9826
190	84Es 190	443358	3949172	1.3	3.5	0.4416	62820	12.06	601.7	1.939	1.963	27950	0.1205	50.5	18.17	61	4.477	28.83	62760	0.10	16530	25.79	15.99	10980
191	84Es 191	442927	3947625	2	3.6	0.4638	64040	10.93	674.6	2.136	1.881	16190	0.1358	55	17.15	58.48	4.234	50.73	55780	0.09	18750	28.15	13.28	9528
192	84Es 192	442055	3947846	2	2.6	0.5641	61700	18.21	705.4	1.831	2.111	18390	0.3893	51.31	17.66	46.94	4.798	65.04	56900	0.10	21030	26.06	13.19	9383
193	84Es 193	442183	3950227	1.9	4.4	0.4259	59680	11.89	673.3	1.859	2.408	20820	0.3503	54.79	19.55	57.28	5.433	50.61	69880	0.10	18500	27.80	13.05	9240
194	84Es 194	441167	3948231	2.9	3.5	0.4513	61680	12.28	550.2	1.995	1.618	31630	0.5916	47.8	15.29	53.85	3.61	40.53	53020	0.09	19190	24.78	14.22	9464
195	84Es 195	440563	3947682	2.7	3.8	0.5904	72910	13.74	683.5	2.058	1.727	38670	0.4437	55.25	19.16	48.1	6.94	36.45	66960	0.09	30520	29.16	22.05	11200
196	84Es 196	440345	3947550	2.2	2.7	0.6151	73660	13.27	681.5	2.144	1.303	43950	0.2767	53.77	15.63	44.18	5.929	27.05	53450	0.09	30360	29.63	17.77	9500
197	84Es 197	439842	3950420	3	3.5	0.6286	74910	17.5	721.7	2.173	1.674	30790	0.3479	54.34	18.86	54.77	6.799	40.05	63130	0.09	29780	28.58	20.74	11350
198	84Es 198	439271	3949211	2.3	5.3	0.5948	72550	12.64	698	1.823	1.766	34760	0.2349	52.66	19.23	40.69	7.359	31.36	69400	0.10	27090	26.53	22.65	11370
199																								

پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهازد

ردیف	شماره نمونه	x_c	y_c	Au	Sn	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Hg	K	La	Li	Mg
201	84Es 201	439850	3962359	1.4	3.2	0.2549	55920	8.313	481.6	1.304	0.6915	50300	0.0939	36.6	10.39	42.68	4.413	8.58	35810	0.07	17270	19.64	15.31	6783
202	84Es 202	441832	3961715	1.8	1.9	0.3217	56920	14.26	570.7	1.409	0.8686	63570	0.1459	39.54	14.2	64.43	5.003	17.50	43310	0.09	17470	20.61	20.38	8353
203	84Es 203	436845	3962565	1.8	2.1	0.255	54820	9.73	464.3	1.346	0.9499	53420	0.1243	41.78	12.72	51.7	5.552	11.35	42980	0.09	16970	21.67	16.98	7644
204	84Es 204	436411	3962569	2.3	4.2	0.3411	55830	10.32	463.5	1.374	0.882	49050	0.1634	45.38	15.28	59.47	7.377	11.90	54000	0.09	16790	23.90	16.51	7365
205	84Es 205	435127	3962884	1.5	2.8	0.2438	54830	7.903	455.1	1.304	0.6539	49830	0.1233	37.15	9.784	39.4	3.725	9.05	33980	0.08	16780	19.72	16.86	7609
206	84Es 206	433743	3958772	1.6	3	0.5383	63820	7.273	493.7	1.576	0.98	55420	0.6184	42.66	10.98	51.34	4.341	22.36	39280	0.09	19760	21.97	21.01	8316
207	84Es 207	435311	3958101	1.8	3.2	0.552	61320	6.027	485.4	1.5	1.56	57340	0.605	42.73	10.85	49.98	4.345	15.41	38540	0.09	19280	21.81	20.23	8740
208	84Es 208	436220	3956566	1.2	2.7	0.5533	60460	7.527	478	1.466	0.3875	57460	0.7291	43.28	12.45	58.41	5.43	15.37	44500	0.09	18570	22.46	19.65	8704
209	84Es 209	418792	3928967	1.3	4.6	0.6461	74590	4.716	663	1.939	0.1699	15790	0.6722	60.22	9.877	34.8	3.893	18.86	42620	0.07	26910	28.82	19.62	6949
210	84Es 210	416136	3929027	2.1	4	0.7885	76120	4.54	665.5	2.072	0.1637	7747	0.7061	58.39	9.6	27.52	2.906	29.54	46200	0.07	22520	27.14	19.50	6116
211	84Es 211	412678	3929171	2.6	3.6	0.6666	71270	6.337	718.4	2.029	0.9554	6704	0.8962	65.1	10.36	16.41	3.657	30.54	54100	0.07	16770	29.07	15.12	6704
212	84Es 212	411504	3929202	7.2	4.5	0.6423	63390	9.723	547.1	1.702	0.8423	39510	0.9985	53.07	12.45	43.7	4.323	95.31	57660	0.11	20330	26.28	17.37	7278
213	84Es 213	411076	3929291	2.3	4.6	0.6217	61190	10.82	582.6	1.579	1.213	31780	1.385	51.11	14.4	36.09	5.385	67.22	83020	0.11	17850	24.98	17.48	6625
214	84Es 214	410804	3929217	2.9	2.2	0.9155	71550	11.66	700.4	1.502	1.635	43380	1.715	46	21.2	55.88	6.917	90.76	99690	0.13	22650	21.25	23.15	10390
215	84Es 215	418041	3932067	1.6	3.2	0.6875	67610	3.979	638.5	1.792	0.262	20530	0.6946	54.56	9.357	28.69	3.731	24.39	43800	0.07	19190	26.65	17.59	6743
216	84Es 216	417585	3931730	1.6	2.7	0.7348	70400	8.753	840.7	1.962	0.2977	21400	0.6895	59.06	10.05	38.6	4.023	21.16	43070	0.08	25090	27.90	20.89	7785
217	84Es 217	418197	3931483	2.6	2.7	0.6144	63230	5.977	592.9	1.74	0.5982	14860	0.6073	51.65	8.609	26.03	3.333	25.81	38840	0.07	18460	25.14	15.79	6711
218	84Es 218	416084	3931562	2.1	2.3	0.5073	54960	3.541	528.5	1.4	0.5665	18010	0.5469	42.8	7.161	18.38	2.756	21.30	36640	0.08	14610	20.79	12.97	5382
219	84Es 219	417541	3932719	1.3	4.6	0.7342	71320	16.13	608	1.829	0.1	11360	0.8588	58.39	14.18	38.65	3.792	34.49	49820	0.08	23020	27.95	23.11	7800
220	84Es 220	419549	3931962	1.4	2.9	0.7432	70270	13.96	775.5	1.9	0.3751	27480	0.8297	56.1	11.99	37.27	4.723	35.29	49610	0.09	25460	27.67	21.91	8219
221	84Es 221	419644	3933396	1.3	3.3	0.6548	64430	8.93	628.8	1.558	1.07	59270	0.999	47.1	12.87	28.95	6.256	26.10	56400	0.10	20650	23.96	20.73	6967
222	84Es 222	421529	3934961	1.9	4.6	0.8507	66820	23.43	572.9	1.537	0.936	30940	0.8892	43.24	13.21	30.14	5.222	34.87	52980	0.10	20200	21.68	26.08	7558
223	84Es 223	438480	3948679	1.9	3.1	0.7629	77110	14.76	523.3	1.446	0.9716	46200	1.185	41.97	20.36	57.3	7.122	29.59	67540	0.11	22720	19.31	25.50	13920
224	84Es 224	436992	3949448	2.4	3.1	0.8355	69930	17.07	821	1.521	1.271	43910	1.417	48.48	17.73	46.77	6.95	38.51	82300	0.12	28890	23.51	22.88	10380.00
225	84Es 225	436443	3949616	2.4	4.2	0.8398	67240	30.99	1075	1.452	1.898	40800	1.357	42.31	18.86	71.88	6.043	51.04	78880	0.12	32110	20.08	23.44	11370
226	84Es 226	435660	3948917	2.5	3	0.9449	79960	22.94	999.7	1.383	1.863	33480	1.296	42.19	20.95	51.62	6.406	23.70	75070	0.12	32240	19.39	29.69	14890
227	84Es 227	434816	3949376	1.2	3.7	1.188	71480	38.88	1507	1.493	2.379	39990	1.417	46.7	20.44	78.82	8.179	30.75	82740	0.13	39220	23.30	26.17	11700
228	84Es 228	433678	3947828	2.3	3.5	0.9044	75490	11.93	643.4	1.32	1.524	35040	1.106	39.37	19.33	45.29	6.581	36.67	63990	0.13	20980	18.30	29.09	14410
229	84Es 229	432938	3948925	1.5	4.7	1.077	74730	13.59	838.9	1.606	2.201	41930	1.687	50.71	25.39	70.23	12.22	47.18	95140	0.14	21970	23.58	32.40	13970
230	84Es 230	432381	3947543	1.4	3.8	1.117	79470	11.4	1009	1.617	2.028	45800	1.581	52.21	23.41	70.7	10.94	47.88	88820	0.13	23190	24.57	28.41	13400
231	84Es 231	431102	3948424	2	2.8	1.033	75690	19.29	576.8	1.658	1.02	68510	1.186	52.16	20.9	85.61	8.462	42.34	66520	0.12	18000	25.39	39.65	13880
232	84Es 232	430880	3947850	1.3	2.8	0.8698	83210	25.98	452.3	1.416	1.858	64650	1.637	43.83	20.47	69.08	8.815	46.95	88330	0.13	14290	20.01	28.49	11570
233	84Es 233	429977	3948110	1.2	2.3	1.028	77420	25.09	550.2	1.55	1.628	77360	1.438	48.47	21.92	94.56	10.07	37.86	78400	0.13	17190	24.33	23.79	11000
234	84Es 234	431741	3951142	1.3	4.2	0.9345	75890	10.05	703.7	1.575	1.622	48390	1.342	47.49	19.35	61.77	9.539	40.59	74890	0.12	22710	23.02	25.27	12190
235	84Es 235	431427	3951972	1.7	2.3	1.039	76040	17.92	611.8	1.502	1.943	71020	1.255	46.39	19.72	76.76	9.466	35.79	70320	0.12	17970	22.97	24.02	10450
236	84Es 236	430017	3950299	1.1	3.5	0.9592	68040	15.67	707.7	1.563	1.529	60860	1.224	44.31	18.7	86.03	8.782	30.02	70550	0.12	21890	22.07	21.65	9968
237	84Es 237	428272	3948334	1.9	2.3	0.8377	72960	15.04	609.6	1.728	0.936	65730	0.9898	49.66	16.19	77.35	6.678	32.81	54550	0.11	24980	24.58	26.63	10870
238	84Es 238	428217	3946001	2	2.2	1.185	75400	70.14	625.3	2.366	1.605	73570	1.274	60.58	21.24	105.1	10.8	35.37	69980	0.13	21290	30.46	19.23	9348
239	84Es 239	428702	3945071	1.8	2.3	1.148	71050	34.08	2191	2.082	1.68	68470	1.458	60.03	23.38	131.5	10.83	39.54	79500	0.13	22780	29.17	20.75	10080
240	84Es 240	429278	3944870	2.1	2.9	1.04	73870	40.84	930.2	1.833	1.176	59860	1.285	57.05	20.56	87.08	8.861	37.21	70820	0.12	20840	26.76	24.94	10290
241	84Es 241	429796	3945168	1.4	3.6	1.36	66330	33.26	565.6	1.796	4.317	44570	2.724	64.38	35.05	81.96	18.16	56.22	151100	0.17	20080	30.86	24.58	9197
242	84Es 242	426333	3944641	2.8	3.2	1.194	75210	17.48	609.3	1.974	1.312	46860	1.36	53.5	21.57	54.8	10.65	37.05	74900	0.12	28940	25.27	26.43	9370
243	84Es 243	425369	3946474	1.5	3.4	1.273	65000	17.61	560.7	1.781	3.405	51320	2.08	52.99	28.28	92.22	18.13	43.86	113300	0.15	26000	25.47	25.79	9322
244	84Es 244	424987	3946494	1.8	3	1.192	71430	15.21	595.7	1.701	1.515	62790	1.299	51.46	19.95	64.28	10.15	39.51	71190	0.12	28010	24.90	27.90	10330
245	84Es 245	424313	3946005	2.3	3.8	1.199	72800	25.23	565.1	2.023	1.071	44490	1.414	56.43	21.6	57.71	11.57	39.17	77770	0.12	30990	26.92	33.41	11070
246	84Es 246	424053	3944001	1.3	3.7	1.243	82780	22.22	843.8	2.001	0.7733	39140	1.068	59.18	17.41	38.92	6.777	49.93	57420	0.11	34870	27.61	33.22	9570
247	84Es 247	424121	3943888	1.9	3.4	1.246	82830	23.55	680.8	1.836	0.4456	37450	1.136	53.04	18.89	55.31	6.193	67.93	62340	0.11	25780	24.56	32.47	11980
248	84Es 248	422733	3945513	2.3	3	1.218	80080	21.74	671.6	2.055	0.709	49910	1.042	56.2	16.23	30.54	6.988	37.59	55970	0.11	34800	27.08	29.60	9

پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهازد

ردیف	شماره نمونه	x_c	y_c	Au	Sn	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Hg	K	La	Li	Mg
251	84Es 251	421947	3947478	1.8	3.9	1.141	71670	29.19	802.7	2.001	1.309	45450	1.158	54.23	16.82	48.5	7.886	32.35	65670	0.11	31470	26.29	26.82	7889
252	84Es 252	421517	3947987	1.8	3.5	0.9722	51060	161.3	2224	1.639	3.918	42860	2.06	48.71	26.04	53.26	13.18	34.92	117000	0.16	20920	24.14	19.73	5212
253	84Es 253	422636	3947266	1.7	3.8	1.198	77700	33.31	740.8	2.132	0.7795	40660	1.111	56.42	16.09	25.88	8.478	30.10	61520	0.11	42590	27.06	25.69	6404
254	84Es 254	425242	3948475	1.9	3.1	1.214	67130	20.93	563.2	1.967	3.007	39260	1.944	56.99	27.85	76.36	16.92	40.73	106400	0.15	26480	27.06	27.23	9814
255	84Es 255	425641	3948233	1.8	2.6	1.174	69580	14.64	635.8	1.708	1.574	55170	1.291	49.94	19.02	55.12	9.67	38.25	71350	0.12	28640	24.67	23.79	9044
256	84Es 256	426772	3949736	2.5	4.6	0.6698	77700	17.06	917.9	2.038	2.556	59560	0.5703	61.31	22.33	141.6	10.6	43.48	84560	0.09	25560	29.97	23.67	9572
257	84Es 257	424700	3951171	1.6	4.8	0.5428	70450	17.11	593.1	2.034	3.679	69880	0.6267	60.1	29.32	168.5	12.33	40.31	108700	0.11	22210	27.62	25.71	11320
258	84Es 258	424140	3951302	1.6	2.4	0.6532	71970	22.65	714.2	1.963	2.34	70230	0.5158	58.54	23.6	122.5	10.19	37.78	88210	0.10	26120	28.72	21.72	8742
259	84Es 259	423468	3951715	1.9	2.5	0.7587	80480	26.79	645.6	2.169	1.518	51700	0.5033	60.62	20.5	63.82	8.731	39.73	77550	0.09	33710	28.81	27.53	9307
260	84Es 260	422572	3951481	1.3	3.6	0.5334	68150	24.91	611.7	1.857	2.639	61360	0.5823	53.87	21.64	82.93	9.667	36.52	87670	0.10	24610	25.28	25.37	8282
261	84Es 261	421649	3951871	1.5	2.7	0.5169	73770	41.81	717	1.883	1.454	57720	0.4929	53.41	17.59	56.43	7.364	34.36	72300	0.08	28960	26.49	23.87	7292
262	84Es 262	421242	3951215	1.7	2.6	0.5321	76770	56.69	736.5	1.892	1.074	57620	0.5192	52.75	15.97	44.73	6.409	35.77	66550	0.08	30260	26.34	23.75	7342
263	84Es 263	420575	3950898	1.8	3.1	0.5146	70420	27.78	583.2	1.914	3.131	50100	0.5252	57.79	22.99	60.73	9.466	37.42	96610	0.10	22850	27.43	23.49	8237
264	84Es 264	420573	3952257	1.1	2.8	0.4576	76290	28.16	620.5	1.874	0.9039	54030	0.3691	52.21	16.12	43.61	33.19	62480	0.08	25220	25.98	23.95	8389	
265	84Es 265	420127	3952195	2.3	3.4	0.4413	73350	22.16	595.4	1.795	1.955	52640	0.5084	52.78	20	60.64	7.678	38.40	82490	0.09	23180	25.14	24.20	9672
266	84Es 266	420123	3950284	1.6	3.4	0.5226	77600	38.42	618.4	2.038	2.306	57990	0.5625	60.71	23.66	68.37	9.574	36.83	95000	0.10	24510	28.71	26.44	9922
267	84Es 267	420404	3948425	2.4	2.9	0.3978	76050	28.56	596.9	1.86	0.8544	57650	0.3808	52.48	16.07	46.46	5.798	34.40	62260	0.08	24640	25.73	25.43	9169
268	84Es 268	419437	3950639	2.2	3.7	0.4917	72220	25.84	641	1.862	3.2	50680	0.5348	58.28	25.74	64.32	10.32	37.82	111500	0.10	24420	27.33	20.76	7629
269	84Es 269	418973	3948886	1.8	3.4	0.5311	75630	20.35	632.2	1.966	2.415	57440	0.439	60.24	27.19	61.83	10.93	36.40	101600	0.10	20860	28.62	22.36	8931
270	84Es 270	419714	3947345	2.4	2.9	0.6944	80910	240.5	909.6	2.725	1.056	32020	1.082	72.79	21.16	55.09	8.297	41.97	83670	0.08	29900	34.21	32.19	9620
271	84Es 271	420003	3946301	1.8	2.9	0.7193	86730	40.21	648.9	2.222	1.194	43650	0.4445	61.82	19.78	52.94	6.912	39.66	71370	0.09	29220	29.33	33.25	11010
272	84Es 272	417743	3950238	2.5	2	0.452	78870	19.56	773.1	1.745	1.283	54460	0.426	49.66	16.5	46.87	5.778	38.77	66910	0.08	25220	23.83	24.74	10030
273	84Es 273	417183	3948898	1.4	3.8	0.3055	66310	11.39	556.6	1.719	3.245	50800	0.463	54.64	26.44	73.26	9.597	39.39	108500	0.11	19270	24.93	22.69	9675
274	84Es 274	416700	3950055	1.8	2.8	0.3908	70320	10.47	564	1.691	3.487	44410	0.476	48.23	23.78	76.09	8.939	37.07	94610	0.09	20830	22.62	18.43	8397.00
275	84Es 275	416188	3949940	2.1	3.2	0.3026	70100	10.66	541.4	1.688	2.78	46940	0.4146	49.44	22.75	72.28	8.274	35.68	93630	0.10	20740	22.94	19.32	8303
276	84Es 276	415666	3950246	1.4	3.5	0.2776	71080	10.94	502.4	1.668	1.455	52210	0.3527	47.69	18.1	67.75	6.254	36.22	71670	0.09	20830	23.09	21.67	9645
277	84Es 277	416259	3952822	2.6	3.2	0.323	71820	12.76	602.9	1.726	1.569	56560	0.3572	47.7	17.58	63.09	5.693	37.56	67340	0.08	21560	22.68	23.82	10130
278	84Es 278	414850	3949706	1.6	3.1	0.3267	69160	11.81	516.4	1.765	1.015	59710	0.36	48.95	17.34	69.56	5.482	34.48	65450	0.08	20290	23.64	24.95	10320
279	84Es 279	415034	3952309	2.2	2.8	0.3487	71730	11.53	502.1	1.771	0.8169	58540	0.3384	47.14	16.13	64.85	4.928	35.80	61150	0.08	21230	23.39	24.78	10820
280	84Es 280	414134	3951935	2.3	4.8	0.3448	65810	15.9	494.6	1.81	2.846	47470	0.5313	54.7	25.94	90.2	9.599	38.09	117100	0.10	18730	25.67	19.86	8721
281	84Es 281	413244	3950373	1	2.7	0.289	68870	12.94	507.7	1.673	1.435	48020	0.3528	44.92	16.89	67.12	5.854	31.22	73450	0.08	20860	22.61	20.27	8000
282	84Es 282	413003	3950980	2.8	2.4	0.3055	70760	12.54	473.9	1.713	0.5736	53320	0.3633	46.58	16.49	56.71	5.047	34.23	62960	0.08	20280	22.86	22.94	9655
283	84Es 283	412551	3952411	1	1.9	0.2983	72730	12.61	566.1	1.754	0.6095	49320	0.3621	48.89	14.66	52.18	4.841	31.07	61240	0.08	22200	24.52	21.40	8887
284	84Es 284	411761	3953177	2.2	2.8	0.2569	68600	14.26	502.9	1.75	1.448	54990	0.3942	49.33	17.61	67.42	6.239	31.20	79840	0.08	19890	23.71	22.04	9278
285	84Es 285	410672	3953262	2.8	2.4	0.3119	71250	15.17	546.6	1.81	1.021	56380	0.3736	50.37	16.38	57.89	4.839	35.13	60850	0.08	22020	25.17	25.66	10150
286	84Es 286	410240	3952981	2.4	2.8	0.2409	66590	13.94	487.1	1.745	1.209	57990	0.3104	49.02	17.96	64.18	5.471	31.92	67040	0.09	19600	23.70	23.45	9465
287	84Es 287	411061	3951249	1.3	2.7	0.3785	68170	16.37	542.1	1.835	1.893	52820	0.4754	52.86	19.75	68.25	6.681	36.44	87880	0.10	20570	25.36	24.56	9988
288	84Es 288	410088	3949148	1.7	1.9	0.2	68510	11.08	530.5	1.652	0.7494	43790	0.3176	47.5	12.72	32.3	4.01	28.91	52610	0.08	19500	24.22	17.37	7557
289	84Es 289	411832	3948972	2.4	2.4	0.2915	73850	13.55	572.5	1.686	0.8979	44030	0.3066	42.45	14.25	46.29	4.452	31.00	55420	0.08	21270	21.42	19.85	8163
290	84Es 290	411568	3947639	2	2.4	0.3665	70750	11.7	526.2	1.797	1.519	55870	0.3646	47.26	18.9	84.06	6.047	41.58	78320	0.10	20740	23.76	21.57	10700
291	84Es 291	411341	3947153	1.7	2.3	0.2882	73630	11.69	580.9	1.587	0.2117	35530	0.3201	41.24	12.29	30.49	3.857	26.14	49030	0.07	21580	20.89	16.78	7174
292	84Es 292	411051	3946971	1	1.6	0.2	70420	10.25	523.5	1.68	0.4507	36060	0.231	41.22	10.71	38.18	2.792	26.44	41130	0.06	21140	21.69	15.91	7051
293	84Es 293	410241	3946539	1.7	1.7	0.2118	72740	11.7	518.3	1.821	1.145	41610	0.3177	49.22	14.58	58.37	3.993	34.74	55080	0.07	20290	24.59	17.58	8774
294	84Es 294	410310	3945099	1.7	2	0.2258	65190	13.23	493.7	1.659	1.221	66650	0.3466	48.26	13.59	48.83	4.455	30.87	54380	0.08	18820	24.09	20.43	8720
295	84Es 295	411827	3946205	1.6	2.8	0.2329	61920	11.29	465.9	1.599	2.686	62600	0.4323	47.17	22	74.63	7.553	38.93	95940	0.10	16210	22.62	17.41	9740
296	84Es 296	411829	3945884	1.2	2.8	0.2	69860	8.303	500.2	1.506	1.04	36970	0.2753	39.82	13.05	32.25	3.901	26.82	56300	0.07	16220	19.38	13.02	7360
297	84Es 297	412676	3944887	1.6	2.8	0.2316	69110	9.929	426.8	1.677	0.8305	42920	0.3293	47.1	16.18	51.79	4.73	31.04	63680	0.08	14860	23.28	19.00	9814
298	84Es 298	411237	3945536	1.1	2.3	0.2444	73910	11.92	559.3	1.643	0.2553	34220	0.3802	42.54	14.22	28.15	4.104	24.35	52840	0.07	19230			

پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهاد

ردیف	شماره نمونه	x_c	y_c	Au	Sn	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Hg	K	La	Li	Mg
301	84Es 301	410536	3941869	2.2	2.9	0.2	68770	10.94	482	1.619	0.1	33870	0.3232	48.12	16.97	41.91	5.239	29.79	72040	0.08	14770	23.01	14.79	8034
302	84Es 302	410645	3940662	1.6	1.7	0.2	74540	6.794	511.4	1.762	0.1793	26590	0.3149	54.09	16.97	49.08	4.595	48.84	71690	0.08	17120	25.81	16.58	9550
303	84Es 303	410768	3940490	1.4	4.9	0.2	75590	6.899	537.6	1.856	0.4499	35200	0.3631	58.81	18.84	51.68	5.601	43.19	84320	0.09	15940	28.92	17.35	9604
304	84Es 304	412079	3942752	1.7	1.9	0.2758	76610	20.85	520.7	1.823	0.9833	32560	0.4197	53.89	18.22	38.68	5.715	38.37	75430	0.08	18100	26.45	23.07	8620
305	84Es 305	412378	3942313	1.4	2.1	0.2	76160	16.19	538	1.766	0.5335	29650	0.359	53.75	18.11	37.99	5.616	41.46	75770	0.08	16210	25.88	20.15	8744
306	84Es 306	413151	3942221	1.4	3.1	0.2336	74720	15.69	526.9	1.867	0.5694	31310	0.363	55.55	18.9	39.17	5.807	30.48	84760	0.08	15940	27.56	19.03	8823
307	84Es 307	412976	3942277	1.8	2.8	0.3707	77820	11.14	570.6	2.145	0.1	20440	0.3368	50.77	15.23	54.06	3.357	27.23	53780	0.06	23890	26.10	26.50	10420
308	84Es 308	411773	3940341	1.4	2.3	0.2	72920	7.356	455.3	1.818	0.1861	32070	0.285	53.38	17	45.03	4.383	27.19	71300	0.08	13660	26.26	14.88	9149
309	84Es 309	414657	3942688	1.3	4.3	0.2566	79050	15.09	524.9	1.934	0.8877	30610	0.4116	51.96	18.5	52.85	4.826	39.45	75710	0.08	17910	25.17	22.07	10630
310	84Es 310	416253	3944298	2	2.3	0.4435	79450	13.61	546.5	2.08	1.038	36480	0.3754	55.85	20.42	77.68	5.324	34.94	87290	0.09	20570	27.85	23.29	12190
311	84Es 311	416697	3945381	1.6	3.1	0.3066	70060	12.59	538.5	1.786	2.233	54640	0.6154	50.41	23.22	79.17	6.78	35.71	92040	0.10	16960	24.60	17.09	10650
312	84Es 312	415145	3944118	1.3	2.5	0.3426	74230	10.9	524.7	1.815	0.8322	53780	0.3345	50.1	18.25	68.31	4.784	29.55	70660	0.09	17190	24.70	18.51	10730
313	84Es 313	414880	3944418	1.3	4.6	0.2709	71680	10.39	502	1.807	1.178	45480	0.3096	50.24	18.44	63.16	5.32	28.33	75570	0.09	16050	24.89	18.35	10170
314	84Es 314	414934	3945243	1.5	4	0.3103	57780	11.19	624.6	1.843	2.975	79040	0.4371	48.72	25.94	100.9	8.681	42.19	109700	0.10	17420	24.58	20.62	10730
315	84Es 315	416156	3946508	1.4	3.6	0.3355	70110	10.75	740.1	1.917	1.86	54580	0.3814	47.73	20.81	76.78	6.375	39.08	78270	0.08	22670	23.96	22.68	10340
316	84Es 316	416609	3942917	2	4	0.341	70720	17.54	564.2	1.542	1.421	39700	1.375	50.05	15.91	46.19	5.915	49.76	66240	0.10	17390	23.45	19.23	9604
317	84Es 317	416902	3942072	1.6	2.6	0.4064	69680	15.44	530.6	1.509	1.066	40150	0.4862	44.13	14.26	44.67	4.665	38.11	50680	0.09	17820	20.72	24.68	10290
318	84Es 318	415439	3941249	1.6	4	0.4869	68630	11.38	489.7	1.502	0.8426	35300	0.3564	42.01	15.05	41.65	5.624	35.53	58140	0.09	16790	20.68	24.79	9902
319	84Es 319	415824	3941008	1.1	3.1	0.3741	66490	14.37	479.2	1.552	1.767	29450	0.377	46.99	14.43	33.37	5.58	33.90	61630	0.08	15320	21.57	24.48	8365
320	84Es 320	416846	3940683	1.3	2.5	0.4474	69680	18.06	529.4	1.484	1.244	40880	0.3926	43.04	14.22	38.9	5.041	39.54	53060	0.09	17430	21.78	23.54	9761
321	84Es 321	411370	3938475	1.4	3.6	0.3201	69910	7.705	468.5	1.559	1.122	33420	0.3861	54.31	17.75	42.7	6.004	51.65	73400	0.09	14520	26.58	14.85	10050
322	84Es 322	411460	3938222	1.6	3.6	0.3094	69740	3.309	479.7	1.337	1.781	34940	0.304	43.38	14.86	31.82	5.247	48.59	62250	0.09	15130	20.77	14.33	9672
323	84Es 323	412772	3939201	1.4	3.7	0.2251	72440	5.991	623.6	1.388	3.079	33310	0.5022	55.77	21.11	39.63	9.436	32.41	107100	0.11	16790	25.14	15.43	10890
324	84Es 324	417294	3938440	1.8	2.8	0.3721	73150	14.2	546.2	1.407	1.113	51390	0.3867	45.06	15.93	36.64	5.061	43.10	57470	0.09	17460	20.91	23.01	10040.00
325	84Es 325	416166	3936995	1.2	2.7	0.3685	71790	12.95	518.8	1.391	2.238	57050	0.3862	44.63	16.4	36.26	5.79	43.83	61080	0.10	16290	20.29	19.96	10570
326	84Es 326	417808	3935409	2.1	2.4	0.3895	69190	29.3	572.6	1.522	0.8505	40580	0.4559	48.73	15.82	40.32	5.043	46.64	59230	0.09	18340	22.55	24.60	8960
327	84Es 327	418383	3935305	2.4	3.1	0.427	75070	12.88	1074	1.557	2.069	44710	0.2797	45.02	15.38	36.7	5.416	36.45	63520	0.08	17850	21.16	20.23	8160
328	84Es 328	417445	3935820	2	4.6	0.4504	68120	16.35	507.4	1.506	2.063	44060	0.4476	47.67	17.02	41.77	5.661	44.70	69680	0.11	16760	23.22	23.88	10570
329	84Es 329	417486	3936887	2.3	3.8	0.3934	74850	11.13	571.8	1.55	1.814	41150	0.4483	49.49	16.94	48.54	5.706	44.25	61820	0.10	18280	22.61	23.44	11190
330	84Es 330	416430	3938692	1.6	2.9	0.4795	67820	55.51	479.7	1.36	2.017	36050	0.6546	42.13	17.5	40.62	6.017	45.15	69340	0.09	14960	19.13	23.61	11100
331	84Es 331	416205	3938075	1.5	3.6	0.4235	70800	14.63	597.6	1.468	3.394	38700	0.5236	48.9	17.85	37.28	7.317	49.89	73600	0.10	19470	21.82	18.88	9278
332	84Es 332	415013	3936379	2	3.7	0.4301	75330	17.89	745.8	1.616	2.69	35060	0.5554	52.56	19.13	37.85	7.733	56.39	78250	0.09	21630	23.95	19.48	8488
333	84Es 333	413946	3936929	1.6	3.4	0.4143	73520	17.36	641.5	1.622	1.903	26890	0.6721	50.87	16.12	36.59	5.488	46.48	63100	0.09	19750	23.23	22.15	9379
334	84Es 334	413841	3934862	1.7	3.4	0.3881	67360	12.33	651.7	1.627	2.234	56570	0.3614	51.1	14.37	44.43	5.705	55.96	54950	0.09	20530	24.73	20.04	7980
335	84Es 335	412735	3935880	1.7	3.3	0.4295	67280	17.09	556.5	1.599	2.041	40450	0.4155	50.77	14.27	38.06	5.37	45.35	61400	0.09	18360	25.17	20.86	7689
336	84Es 336	412346	3935417	1.3	3.1	0.5691	75420	15.52	494.4	1.547	5.288	50390	0.5449	57.94	22	54.61	9.978	37.71	93720	0.11	16840	26.56	21.01	12660
337	84Es 337	412137	3934667	1.7	3.3	0.4597	76340	14.88	570.7	1.582	2.508	31010	0.493	46.89	18.65	47.07	5.601	72.74	64510	0.08	18600	21.47	18.72	10990
338	84Es 338	411435	3934503	1.3	3.6	0.6764	73100	13.4	645.3	1.534	2.798	48530	0.4977	47.1	16.86	43.59	6.02	50.09	64250	0.11	19960	22.27	20.85	10870
339	84Es 339	410961	3934622	1.3	2.6	0.6118	72000	16.64	559.7	1.401	3.385	41660	0.5804	45.98	17.36	33.66	6.499	41.86	66890	0.12	17810	20.30	21.22	11190
340	84Es 340	410917	3934375	1.4	3.1	0.6755	72770	14.53	724.1	1.501	3.853	46150	0.6126	47.7	18.01	41.39	6.14	54.76	71610	0.13	19880	21.75	20.43	11790
341	84Es 341	411280	3933660	1.5	3.4	0.4339	69570	11.7	609.3	1.626	2.686	35790	0.4278	51.37	17.15	37.76	5.735	50.22	66500	0.09	19380	22.58	15.87	9541
342	84Es 342	410135	3933419	2.5	3.8	0.3915	72050	10.98	527.3	1.496	3.183	44590	0.4195	47.72	18.52	40.3	5.686	85.81	66060	0.11	16820	20.47	19.26	10610
343	84Es 343	412878	3934974	1.9	3.6	0.305	62620	9.441	522.9	1.521	3.453	29880	0.3372	46.35	15.98	38.38	6.694	48.77	60870	0.10	17150	21.78	14.64	7795
344	84Es 344	413105	3933690	1.3	4.4	0.3929	72210	10.42	624.9	1.738	4.189	41540	0.4562	57.07	19.88	46.08	8.59	63.98	73120	0.11	20990	24.77	15.52	10220
345	84Es 345	415000	3934258	1.6	4.6	0.3729	70510	13.74	617.7	1.761	3.349	47960	0.4938	54.03	17.52	48.29	7.18	45.12	66560	0.11	17770	24.88	18.59	9195
346	84Es 346	419417	3935460	1.8	3	0.5789	74230	14.14	572.9	1.332	2.968	38230	0.4991	42.5	17.57	38.57	5.708	53.02	66340	0.12	17570	19.07	25.01	11010
347	84Es 347	420494	3940547	1.8	4.6	1.026	76140	70.55	2599	1.829	2.611	29490	0.46	46.62	17.73	59.29	4.198	53.22	73060	0.10	33530	20.02	26.01	9438
348	84Es 348	417356	3943392	1.6	3.9	1.011	77640	46.17	1012	1.751	1.867	39060	0.4407	53.43	19.01	54.49	5.599	46.59	65710	0.10				

پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهاارد

ردیف	شماره نمونه	x_c	y_c	Au	Sn	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Hg	K	La	Li	Mg
351	84Es 351	417680	3945756	1.7	1.7	0.9471	74100	28.56	780.6	1.804	1.428	38370	0.3016	51.86	12.96	32.08	4.337	33.78	48960	0.09	29650	25.37	23.73	7530
352	84Es 352	417910	3944309	1.8	3.4	0.8546	71060	43.15	698.8	1.85	5.369	40910	0.5431	65.36	25.96	53.61	11.58	37.73	99790	0.12	24560	28.68	20.62	7918
353	84Es 353	420047	3944212	1.7	3.1	1.128	79970	34.18	913.8	2.095	2.456	37500	0.3947	60.78	17.37	49.18	6.312	37.14	65250	0.10	31020	28.66	24.28	7971
354	84Es 354	419883	3944368	1.9	4	1.151	77510	38.02	711.4	2.15	2.926	47960	0.442	63.2	19.34	38.31	8.392	42.96	71220	0.12	31990	29.60	23.70	7502
355	84Es 355	420625	3943361	1.4	3.8	1.069	77280	40.47	1341	1.8	2.192	36070	0.3969	56.23	20.01	53.75	5.811	49.96	72010	0.10	24440	24.76	29.45	11560
356	84Es 356	419827	3942100	1.5	3.8	0.7364	67010	33.34	513.3	1.602	5.309	38280	0.6757	57.46	26.21	94.92	8.982	63.47	108500	0.13	15940	22.54	30.48	15530
357	84Es 357	419877	3941902	2	3.2	1.556	72260	103.1	3589	2.093	5.046	32500	0.652	52.31	24.14	81.14	6.7	69.21	118800	0.12	26960	21.42	30.44	11160

ادامه پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهازد

ردیف	شماره نمونه	x_c	y_c	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	S	Sb	Sc	Sr	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
1	84ES 1	449011	3928890	1629	1.69	29010	13.91	17.47	653.5	50.24	75.19	541	1.2	10.81	185.2	0.1361	12.09	3593.00	1	2.36	82	2.01	37.19	170	447.9
2	84ES 2	448539	3928757	1255	1.178	21660	14.91	26.87	878.2	40.15	70.44	1754	1.4	13.07	211.8	0.1328	12.46	4470.00	1	2.92	95	1.82	34.77	105	327.3
3	84ES 3	449831	3928635	1964	1.1	24420	14.27	24.31	759.4	155.84	69.42	261.3	1.499	11.04	137.8	0.1588	13.1	3447.00	1	2.39	103	2.65	33.74	288	360
4	84ES 4	453591	3929643	1393	2.266	22730	16.04	25.62	781.4	45.12	80.4	352.2	1.657	12.45	161.5	0.1605	13.16	4757.00	1	3.01	108	2.09	37.24	134	456.2
5	84ES 5	454487	3930176	1655	2.156	23130	18.77	24.5	723.6	48.53	86.14	282	1.666	12.59	163.4	0.1816	15.46	5557.00	1	3.66	143	2.27	37.01	168	373.5
6	84ES 6	453380	3931118	1642	1.735	22460	15.85	27.29	1008	48.23	75.19	470.8	1.596	13.09	188.9	0.1664	13.7	4175.00	1	2.78	106	2.10	35.58	174	325.3
7	84ES 7	452775	3931262	1903	2.082	25470	17.03	24.37	849.5	60.55	77.25	338.8	1.632	13.49	186	0.1722	14.23	4910.00	1	3.20	114	2.34	38.99	216	485.4
8	84ES 8	454492	3931563	1528	1.369	19570	20.52	38.59	1129	60.24	91.75	322.7	2.079	20.16	326	0.2261	17.36	6057.00	1	4.10	192	2.20	34.50	148	491.6
9	84ES 9	452559	3932342	1421	1.723	21430	17.79	28.79	994.7	40.32	84.84	486.6	1.866	16.15	238.1	0.2073	15.18	5278.00	1	3.44	159	1.92	32.89	151	492.3
10	84ES 10	452582	3932770	1411	1.7	22400	17.58	29.9	897.5	48.2	90.21	276.7	1.762	16.69	224.2	0.1997	15.13	5290.00	1	3.52	162	2.03	32.36	158	554.5
11	84ES 11	454189	3935006	1433	1.608	21540	17.76	29.53	925.3	50.32	89.09	238.3	2.223	16.9	218.2	0.2096	15	5178.00	1	3.48	170	2.17	30.96	167	465.8
12	84ES 12	450591	3931975	1424	1.87	23910	16.45	23.52	885.5	72.34	81.1	454.4	2.183	11.83	189.5	0.1558	13.13	4970.00	1	3.18	114	3.87	36.05	508	401.3
13	84ES 13	451966	3933286	1487	1.803	23290	17.32	22.96	774.6	67.66	78.17	260.9	1.752	12.03	174.7	0.1622	13.96	5183.00	1	3.41	118	2.36	36.77	198	505.1
14	84ES 14	450338	3932182	1301	1.46	20490	15.49	26.64	1247	60.98	80.46	531.9	1.596	11.96	205.5	0.1441	12.68	4754.00	1	3.06	108	2.24	34.91	189	464.7
15	84ES 15	451607	3934708	1442	2.177	22500	20.27	22.65	766.9	66.35	65.64	366.3	1.907	12.18	180	0.1919	15.55	7087.00	1	4.71	169	2.34	32.97	203	422.1
16	84ES 16	449852	3932859	1211	1.675	18100	16.54	31.31	1055	45.28	78.58	678.8	1.946	13.98	246.5	0.1487	13.81	4971.00	1	3.18	126	1.85	33.84	149	458.3
17	84ES 17	449178	3932774	1161	1.583	20120	15.28	23.28	786.7	44.31	87.32	924.5	1.548	12.57	207.6	0.1308	12.47	4544.00	1	2.91	106	1.87	33.61	149	424
18	84ES 18	449264	3933163	1069	1.287	18970	14.5	18.81	666.4	56	88.4	426.8	1.053	10.96	201.3	0.1329	11.34	4473.00	1	2.77	92	1.86	33.80	133	435.9
19	84ES 19	448827	3933035	1085	1.538	19450	14.34	19.04	724.8	51.2	87.57	399.2	1.651	11.32	169.2	0.1255	11.5	4494.00	1	2.75	93	1.75	34.44	141	512.8
20	84ES 20	448175	3933442	1392	1.665	20480	18.75	22.86	854.8	51.5	87.89	238.9	1.844	12.02	142.1	0.1694	13.71	6075.00	1	3.74	127	2.13	34.79	147	405.9
21	84ES 21	450060	3935336	1232	1.049	18850	15.72	24.49	816.6	46.5	75.66	457.9	1.451	12.18	206.9	0.1552	12.8	4647.00	1	2.96	129	1.78	29.76	129	353.9
22	84ES 22	449799	3935838	1139	1.065	17370	15.94	27.2	747.2	37.1	78.98	349.8	1.571	13.19	203.4	0.1567	12.83	4862.00	1	3.04	135	1.72	30.52	123	416.6
23	84ES 23	449628	3936247	1092	1.031	16850	15.45	26.03	534.2	39.1	69.91	703.1	1.617	12.91	231.2	0.1563	12.33	4716.00	1	3.02	128	1.62	27.65	110	373.5
24	84ES 24	446044	3936818	1503	1.925	16230	15.99	21.61	597.8	43.14	65.59	328.1	1.788	9.651	174.4	0.1749	14.98	4558.00	1	4.45	133	1.88	34.42	129.10	387.8
25	84ES 25	446801	3937304	1358	1.401	18390	15.37	18.87	592.6	40.5	78.23	294.2	1.386	9.383	157.4	0.1442	11.33	4546.00	1	2.88	99	1.88	27.64	124	399.6
26	84ES 26	446014	3934854	1314	1.798	18600	13.96	25.61	738.5	36.98	78.28	377.3	1.344	9.902	171.3	0.1273	11.53	4288.00	1	2.98	91	2.00	27.46	123	401.4
27	84ES 27	446562	3934084	1473	1.135	20890	14.12	23.75	823.9	35.7	81.23	391.8	1.034	10.52	182.4	0.1294	12.59	4092.00	1	3.06	96	2.04	31.87	131	444.9
28	84ES 28	447044	3934693	1454	1.134	23240	15.36	22	685.5	29.4	67.91	308.5	1.308	10.41	159	0.1483	13.29	4841.00	1	3.47	105	1.95	32.76	119	384.4
29	84ES 29	444649	3933080	1572	1.859	20680	14.93	28.59	930.3	40.74	72.63	370.6	1.388	11.4	183.5	0.1433	13	4410.00	1	3.23	106	1.96	30.27	139	437.5
30	84ES 30	443736	3934600	2631	3.272	22710	13.87	16.67	651.4	30.14	64.41	296.4	1.055	9.405	131.6	0.1274	11.42	3859.00	1	2.95	80	1.54	25.53	100	374.4
31	84ES 31	442479	3934646	2321	4.085	19090	12.88	16.74	647.8	29	67.16	444.6	0.9146	9.082	131.9	0.1213	11.33	3283.00	1	2.69	64	1.72	25.15	101	375.1
32	84ES 32	440532	3933543	1122	2.406	10610	13.04	25.99	706.6	29.87	92.75	1368	1.162	10.94	199.3	0.1303	11.75	3805.00	1	2.85	89	1.43	21.52	77	312.6
33	84ES 33	441729	3932972	1471	3.629	14530	15.77	19.44	658.8	30.07	74.5	1264	1.226	9.671	154.3	0.1645	13.12	4347.00	1	3.26	86	1.67	23.58	90	320.1
34	84ES 34	440234	3932690	1349	2.321	19870	12.98	18.81	667.7	28.89	66.28	393.1	0.9235	9.147	177	0.1229	10.22	3749.00	1	2.66	79	1.46	23.31	88	311.8
35	84ES 35	441685	3931581	2353	2.223	18660	14.53	23.99	623.1	34.44	58.44	289.8	1.353	13.14	163.2	0.1613	12.58	3880.00	1	3.09	119	2.51	26.60	209	400.5
36	84ES 36	438483	3933115	1256	2.474	16320	14.82	21.84	629	32.94	67.77	586.4	1.669	9.855	190.5	0.1723	12.84	4518.00	1	3.29	117	1.56	22.21	103	298.7
37	84ES 37	448025	3939613	946.3	1.299	14650	16.58	27.88	923.3	32.7	80.83	358.1	1.79	12.83	290.7	0.1696	13.22	5531.00	1	3.62	133	1.66	27.70	95	430.6
38	84ES 38	447765	3940085	1013	1.135	14110	14.73	27.15	916.6	31.1	81.98	332.1	1.331	12.5	190.8	0.1485	12.33	4954.00	1	3.33	120	1.63	25.81	98	330.2
39	84ES 39	449631	3940400	878.2	1.307	16550	15.41	29.22	877.7	32.06	82.8	316.9	1.386	12.5	224.3	0.1451	12.07	5067.00	1	3.26	117	1.57	27.93	96	434.9
40	84ES 40	450127	3943491	999.4	1.043	17410	18.38	32.64	1274	30.64	75.8	437.2	1.545	13.16	260	0.1553	13	6275.00	1	3.87	129	1.57	28.47	91	358.3
41	84ES 41	450548	3943300	949.8	1.296	16910	17.73	38.17	1254	32.68	70.87	396.2	1.736	13.52	263.8	0.1698	13.41	5944.00	1	3.87	131	1.61	28.01	96	410.5
42	84ES 42	451229	3944362	1358	1.462	15710	19.93	33.72	1310	40.3	87	309.8	2.038	15.29	265.6	0.2003	15.25	6670.00	1	4.36	153	1.93	29.33	109	421.4
43	84ES 43	452314	3945110	1353	1.322	12830	17.23	27.89	1308	36.56	89.82	360.2	1.592	13.96	203.7	0.1662	13.4	5763.00	1	3.76	136	1.69	24.73	112	392.5
44	84ES 44	453159	3944687	1333	2.251	13950	19.55	33.87	1320	36.03	83.73	1090	1.746	13.95	271.8	0.1941	14.71	6651.00	1	4.27	160	1.84	24.70	101	359.1
45	84ES 45	454183	3945258	988.4	1.709	14290	16.59	36.67	1264	56.36	82.46	795.6	1.792	13.99	272	0.1632	13.57	5067.00	1	3.53	143	1.73	24.84	108	367.5
46	84ES 46	454634	3945037	1124	1.657	16730	17.83	37.85	1352	46.58	85.8	495.1	1.904	14.05	224.1	0.1803	13.74	5683.00	1	3.76	142	1.81	26.72	116	362.7
47	84ES 47	454166	3942934	1027	1.753	16100	23.3	39.08	1383	39.54	75.09	701.2	2.321	15.09	242	0.2436	17	7507.00	1	5.00	199	1.83	25.04	116	371.5
48	84ES 48	452250	3942249	1172	1.452	16710	19.33	33.01	122																

ادامه پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهازد

ردیف	شماره نمونه	x_c	y_c	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	S	Sb	Sc	Sr	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
51	84ES 51	447412	3942740	933.6	1.247	15120	17.23	30.46	965.7	31.76	80.04	249	1.524	12.07	192.5	0.1658	12.94	5665.00	1	3.64	122	1.63	28.13	92	433.6
52	84ES 52	446596	3942703	1078	1.009	16230	16.54	29.73	992.2	34.95	90.96	375.7	1.612	14.68	173.9	0.1573	12.86	5677.00	1	3.70	124	1.69	29.77	105	393.5
53	84ES 53	445905	3942322	1150	0.9958	13770	15.87	29.3	865.4	30.28	79.64	250.8	1.392	14.81	145.2	0.1569	12.68	5244.00	1	3.56	127	1.68	28.78	98	358.6
54	84ES 54	443382	3941821	975.7	1.456	12300	18.56	24.55	1108	34.13	83.63	849.8	2.111	12.74	304.3	0.183	14.34	6206.00	1	4.03	151	1.70	28.86	102	470.2
55	84ES 55	444065	3942425	1015	1.285	13370	13.1	21.71	803.9	33.11	105.8	961.3	1.545	12.71	349.5	0.1531	10.83	4162.00	1	2.76	110	1.56	24.95	82	381.6
56	84ES 56	442537	3941730	1090	2.921	19090	26.73	32.51	1118	36.62	73.87	649.3	3.271	15.13	411.6	0.2922	17.29	9226.00	1	5.67	225	2.01	29.45	109	586.9
57	84ES 57	444237	3937608	832.1	1.533	15280	11.83	21.1	505.6	27.72	58.14	515.7	1.155	10.13	261.8	0.1379	10.05	3852.00	1	2.61	95	1.50	23.04	83	365.4
58	84ES 58	444223	3937021	1356	2.031	19270	11.91	15.88	601.8	28.17	59.92	396.1	1.086	8.426	174.3	0.131	9.735	3658.00	1	2.52	81	1.42	22.27	82	295.2
59	84ES 59	443363	3937798	858.5	1.478	15770	13.91	28.73	638.4	40.4	59.81	555.1	1.549	12.08	248.2	0.1566	12.01	4625.00	1	3.20	135	1.48	24.38	84	367.4
60	84ES 60	443375	3937271	1003	2.357	15340	13.37	17.22	443.5	27.68	54.88	716.7	1.327	8.577	358.8	0.1519	10.46	4197.00	1	2.83	101	1.46	20.17	85	314.6
61	84ES 61	441353	3939733	1669	1.63	16510	13.85	24.95	515.2	50.84	53.52	429.5	1.225	18.83	217.3	0.1542	11.61	4226.00	1	3.09	128	4.53	25.20	461	334.6
62	84ES 62	439703	3941947	1136	1.507	14780	21.33	32.54	1055	64.11	68.31	375.6	2.639	16.7	380.5	0.2623	16.31	7761.00	1	5.02	205	1.86	29.58	123	461.7
63	84ES 63	439417	3939828	958.5	1.39	17950	14.17	28.26	679.6	42.47	61.54	317.9	1.714	12.52	250.6	0.1604	12.27	4775.00	1	3.26	137	1.55	25.91	103	319.4
64	84ES 64	439127	3938171	1127	1.874	15650	22.24	29.16	904.3	54.99	55.44	279	2.713	15.07	401	0.2963	16.8	8361.00	1	5.46	232	1.74	27.27	118	482.5
65	84ES 65	438201	3939536	1028	1.396	15540	16.05	26.64	800.9	47.23	62.32	389.1	1.749	13.21	357	0.1894	12.93	5679.00	1	3.72	148	1.77	27.43	116	404.1
66	84ES 66	437923	3939537	851.9	1.357	14770	12.01	22.71	566.5	35.35	61.5	282.7	1.276	10.63	266.9	0.1498	10.16	3995.00	1	2.67	98	1.38	24.42	80	415.3
67	84ES 67	437368	3936416	896.1	1.525	15510	12.13	19.28	612.2	33.68	57.85	479.1	1.367	10.04	258.7	0.1465	10.22	4038.00	1	2.69	101	1.32	23.67	82	416.7
68	84ES 68	436847	3936668	1001	1.128	19670	14.84	15.19	666.5	33.28	67.02	369.1	1.488	12.71	268.1	0.165	12.11	5081.00	1	3.35	123	1.67	29.17	100	420.6
69	84ES 69	439437	3935606	874.4	1.895	13700	13.14	20.71	520.9	28.21	52.22	35190	1.394	8.913	424.8	0.1593	10.69	4556.00	1	3.00	115	1.40	19.75	102	326.4
70	84ES 70	439379	3935242	1158	2.844	14280	17.49	22.22	513.1	38.63	62.02	714	1.94	10.51	203.9	0.2108	14.58	6084.00	1	4.10	161	1.77	21.66	115	340.9
71	84ES 71	435237	3936018	972.2	0.779	17230	11.63	16.66	694.2	30.87	95.2	897.7	1.203	9.911	218.6	0.1317	11.29	3467.00	1	2.44	99	1.83	23.61	95	375.4
72	84ES 72	433721	3934978	1159	0.9653	13500	12.65	24.77	601.2	28.04	97.91	579.1	2.043	12.48	200.3	0.1724	12.87	3922.00	1	2.92	135	1.76	20.32	101	334.7
73	84ES 73	432814	3935575	1314	0.7109	13370	14.54	29.69	740.7	30.61	107.4	370	2.232	15.48	241.3	0.1923	14.32	4410.00	1	3.34	161	1.72	22.47	108	293.5
74	84ES 74	435030	3937837	865.3	1.191	17900	14.21	12.25	577.5	29.38	65.99	1830	1.201	13.36	251.2	0.1528	11.74	4834.00	1	3.24	116	1.47	29.04	85.72	417.3
75	84ES 75	435949	3938150	876.9	1.716	15940	13.63	16.16	473.2	30.26	65.87	5692	1.254	11.75	276	0.1558	11.29	4523.00	1	3.03	113	1.57	26.46	93	430.1
76	84ES 76	436137	3938442	821.1	1.242	13260	10.72	12.62	459.7	23.39	63.28	694.4	0.5815	7.098	167.8	0.1075	8.136	3319.00	1	2.13	58	1.29	24.82	69	382.5
77	84ES 77	437779	3942094	1128	1.434	10940	18.39	27.42	800.5	51.12	58.26	434.2	2.163	15	385.6	0.2284	15.27	6782.00	1	4.50	200	1.95	28.30	143	441.1
78	84ES 78	438367	3942886	1029	1.233	14400	14.96	25.04	782.3	44.83	82.03	502.7	1.852	12.49	200.7	0.1846	12.74	5064.00	1	3.42	136	1.86	25.29	124	344.6
79	84ES 79	438369	3946180	1765	1.135	23340	17.56	16.45	669.7	47.56	60.7	717.9	2.133	11.66	176.3	0.2043	14.16	6113.00	1	4.17	123	2.85	32.91	224	318.9
80	84ES 80	439411	3947680	1144	1.153	17510	15.69	22.13	1016	49.3	98.3	290.9	1.949	15.27	217.1	0.1842	13.14	5528.00	1	3.69	137	1.97	29.15	122	403.2
81	84ES 81	442727	3928866	1583	1.038	22310	14.35	25.81	689.5	38.27	67.95	304.5	1.305	12.68	176.2	0.1716	12.58	4324.00	1	3.15	100	2.35	33.73	179	368.5
82	84ES 82	441634	3928928	1157	0.911	17630	14.82	17.12	791.4	48.35	82.82	240.2	1.807	17.84	196	0.2295	13.21	5747.00	1	3.84	165	1.57	29.09	109	408.4
83	84ES 83	443637	3930400	1356	0.9401	25450	11.27	13.68	509.5	24.96	71	200.9	1.042	8.65	122	0.1282	10.1	3114.00	1	2.43	65	1.74	29.58	109	341.4
84	84ES 84	440055	3929925	1071	1.258	19480	10.71	18.98	457	37.87	63.58	333.6	0.8261	9.383	243	0.1234	9.294	3196.00	1	2.25	81	1.70	22.72	105	353.1
85	84ES 85	440468	3930858	1149	1.156	15110	12.25	35.78	753.3	32.23	83.85	547	1.158	12.27	195.5	0.1191	11.06	3575.00	1	2.59	90	1.66	28.66	103	363.1
86	84ES 86	438643	3931046	1409	1.275	16920	13.52	21.15	614.3	21.2	68.68	291.8	0.8533	11.66	161.6	0.1096	12.01	3847.00	1	4.67	89	2.21	35.30	138	549
87	84ES 87	436049	3931174	1164	1.877	17150	15.91	22.05	542.9	22.43	67.71	340.5	1.496	11.17	216.9	0.1674	13.78	4949.00	1	5.49	132	2.19	26.96	113	405.4
88	84ES 88	434127	3930545	1022	0.8274	15450	14.8	28.6	589.4	16.69	99.53	1379	1.576	12.87	301.1	0.1498	14.36	4112.00	1	4.17	136	2.19	23.89	95	291.4
89	84ES 89	435193	3932859	985.8	0.9257	15980	15.95	27.48	715.9	20.41	86.1	360	1.981	12.27	250	0.1732	15.1	4565.00	1	5.04	150	2.25	25.05	105	307.6
90	84ES 90	435558	3934293	962.5	0.9595	20620	14.49	13.98	731.3	19.68	72.94	246.3	1.161	13.09	320.7	0.1621	12.54	4710.00	1	4.76	121	2.05	30.20	102	392.4
91	84ES 91	431827	3934794	1046	0.6906	17190	15.16	16	636.7	17.42	100.5	412.8	1.551	13.67	220.8	0.1489	14.44	4212.00	1	4.21	129	2.11	28.61	96	286.1
92	84ES 92	431103	3934153	1090	0.8358	13890	15.26	22.86	687	18.03	99.83	329.2	1.739	13.62	211.8	0.1615	14.62	4267.00	1	4.46	136	2.27	27.63	97	347.8
93	84ES 93	429642	3935089	1143	0.6619	12570	15.29	22.97	700.1	18.35	110.5	326.1	1.939	13.17	186.1	0.1526	15.24	4151.00	1	4.24	135	2.26	26.70	102	324.6
94	84ES 94	430692	3933159	1081	0.7309	12300	15.36	27.72	745.8	18.22	108.7	418.4	2.556	14.27	230.3	0.168	15.04	4047.00	1	4.54	140	2.30	25.80	108	306.7
95	84ES 95	429221	3933736	1248	0.6964	13790	17.15	27.27	873	21.28	123.5	260.6	3.478	14.26	209.2	0.3223	16.97	4500.00	1	4.74	152	2.55	26.55	112	309.8
96	84ES 96	427763	3932347	1183	0.6578	10100	13.25	33.24	798.8	33.18	107.4	461.4	2.085	12.59	233.2	0.1855	12.94	3607.00	1	3.84	105	2.19	23.83	119	285
97	84ES 97	427852	3931045	1593	0.7459	14120	15.79	20.26	734.2	185	83.81	306.5	2.053	17.46	327.7	0.1893	14.34	5175.00	1	5.43	177	3.20	27.22	326	307.1
98	84ES 98	426540																							

ادامه پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهازد

ردیف	شماره نمونه	x_c	y_c	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	S	Sb	Sc	Sr	Te	Th	Ti	Ti	U	V	W	Y	Zn	Zr
101	84ES 101	424652	3934162	1613	0.9998	13460	15.5	22.5	664.6	165.3	95.6	332.1	2.408	15.82	268.7	0.1886	14.28	5096.00	1	5.97	171	3.13	25.55	289	301.9
102	84ES 102	424591	3935121	1680	0.9207	15320	16.9	17.64	615.8	147.7	73.35	288.9	2.38	19.42	409.1	0.2429	14.64	6114.00	1	7.15	207	2.72	28.81	254	338.7
103	84ES 103	425336	3935746	1987	1.607	14560	18.06	19.14	653.7	281.3	77.21	2887	3.302	19.55	452.9	0.2818	15.48	6348.00	1	7.29	226	3.76	27.31	454	304.8
104	84ES 104	423318	3935267	1285	0.7421	12790	21.59	23.41	549	47.67	63.38	379.6	2.615	18.81	360.9	0.3313	18.57	7195.00	1	7.20	297	2.29	26.40	155	319.1
105	84ES 105	424084	3933523	1385	0.7753	10480	13.76	13.85	544.8	17.38	111.7	220.9	1.851	13.35	175	0.1638	12.46	3565.00	1	3.98	118	2.34	26.87	101	288
106	84ES 106	422546	3933232	860.8	1.061	15820	12.51	21.31	566	19.85	87.29	281.8	1.013	12.76	211.2	0.1179	10.91	3652.00	1	3.90	89	1.78	29.61	92	329.5
107	84ES 107	424390	3931973	804.5	1.309	14990	11.75	13.54	549.9	46.69	83.56	1446	1.373	11.45	218.9	0.119	10.04	3497.00	1	3.74	83	2.03	28.79	145	330.3
108	84ES 108	424050	3931039	888.2	1.085	13950	11.54	19.79	548.8	80.66	68.3	1066	1.619	11.6	205	0.1287	9.823	3426.00	1	3.80	81	2.33	27.45	206	275.1
109	84ES 109	420589	3931176	1100	0.9563	15900	14.42	26.71	679.5	23.55	79.99	272.5	1.551	14.99	204.5	0.1529	12.39	4501.00	1	4.63	120	1.99	29.59	122	276.8
110	84ES 110	422204	3930475	858.5	0.6731	16900	12.6	19.15	677.3	15.99	78.13	445.9	0.7016	12.41	284.7	0.1355	10.41	4146.00	1	4.30	92	1.69	29.86	96	289.9
111	84ES 111	421572	3929807	933.7	1.025	17980	16.93	18.39	566.6	19.79	99.54	605.9	1.471	12.94	194.6	0.165	13.01	4623.00	1	4.87	108	1.91	33.17	97	378.1
112	84ES 112	420225	3928946	805.1	0.9889	15630	15.07	17.7	689.6	11.71	98.41	510.7	1.714	12.55	187.9	0.1547	11.47	4744.00	1	4.94	86	1.83	33.85	65	323.9
113	84ES 113	423764	3928972	937.3	1.028	14690	14.55	27.08	677.2	22.46	83.64	352.2	1.151	13.94	214.9	0.1594	11.91	4587.00	1	4.90	112	1.82	29.16	102	333.3
114	84ES 114	436258	3942088	916.5	0.9483	15740	17.69	15.95	774.8	41.99	98.77	553.8	2.102	13.2	219.2	0.1414	14.72	6473.00	1	6.97	169	2.04	28.66	116	411
115	84ES 115	436232	3941785	1306	1.925	17110	16.54	21.35	565.3	24.55	97.13	259.2	1.746	12.98	178.1	0.1385	13.79	4738.00	1	5.06	127	2.08	37.11	109	578.2
116	84ES 116	437154	3943264	847.5	0.6976	14080	13.85	21.43	665.9	23.19	100.4	525.5	2.814	14.01	227.4	0.1589	12	4922.00	1	5.04	134	1.76	27.27	99	379.4
117	84ES 117	435614	3943025	1098	0.6205	16680	17.71	16.71	796.4	31.27	70.74	537.9	2.376	21.15	283.9	0.2166	14.65	6610.00	1	6.93	221	1.68	30.53	108	289.1
118	84ES 118	434872	3941979	870.8	1.311	12190	12.73	23.02	646.3	17.98	86.56	491.2	1.928	12.41	246.8	0.1265	11.01	4111.00	1	3.99	114	1.64	24.08	82	382.1
119	84ES 119	435177	3942016	838.4	1.204	13750	11.35	17.87	531	12.79	85.98	329	1.416	9.839	151.7	0.1016	10.06	3644.00	1	3.79	73	1.65	30.24	69	478.3
120	84ES 120	434398	3942706	885.3	0.6893	15430	14.04	17.85	715.1	29.49	72.59	512.9	2.168	16.59	283.1	0.1584	11.89	4803.00	1	4.76	140	1.57	28.30	95	343.9
121	84ES 121	434541	3943087	1038	0.7048	16170	17.04	19.72	618.4	20.83	50.05	384.9	3.367	21.15	265.7	0.2553	13.89	6487.00	1	6.63	239	1.50	26.07	90	282.6
122	84ES 122	432802	3942107	1062	1.143	14720	16.15	19.16	678.8	27.74	89.47	307.5	2.921	15.25	248	0.2098	14.11	4938.00	1	4.86	179	2.20	24.51	125	335.1
123	84ES 123	432527	3941954	1303	0.6961	15030	17.85	38.78	746.5	34.56	92.51	195.1	3.02	22.93	316.2	0.236	15.17	5471.00	1	5.60	208	2.04	21.72	155	298.1
124	84ES 124	432370	3943751	1081	1.557	17380	21.01	24.37	1173	24.77	69.25	438.7	2.712	16.94	375.5	0.2654	14.82	7876.00	1	7.83	205	1.92	28.15	143.20	443.8
125	84ES 125	432304	3943354	934.2	0.846	17840	15.87	14.34	633.1	23.82	60.96	431.3	2.549	16.52	300.9	0.2363	12.5	6240.00	1	6.04	194	1.59	27.36	88	343.4
126	84ES 126	433544	3944865	1028	0.9245	15400	14.81	19.56	730	81.77	71.72	637.2	2.87	18.98	286.4	0.1824	11.67	5237.00	1	4.87	156	1.90	26.88	122	258.3
127	84ES 127	433665	3945590	1168	1.039	17320	17.1	19.52	829.3	40.74	86.58	272	2.683	18.75	226.5	0.2266	13.42	6188.00	1	6.57	181	1.89	31.06	128	351.2
128	84ES 128	430643	3944347	1133	0.8421	14040	16.63	17.61	880.3	27.85	92.48	307.3	2.968	18.42	284.2	0.2143	12.89	5631.00	1	5.30	171	2.01	30.55	156	385.5
129	84ES 129	431400	3943132	1097	0.902	15170	15.72	26.42	702.8	25.86	77.06	215.9	2.787	15.51	332.9	0.2182	12.55	5261.00	1	5.16	166	2.02	22.94	145	333.4
130	84ES 130	429916	3942964	1230	0.9307	12900	20.43	23.29	743	29.25	72.2	194.1	4.166	17.94	431.2	0.2911	15.93	7409.00	1	7.57	250	2.00	28.13	152	404.1
131	84ES 131	428026	3943035	928.8	0.5793	11710	15.08	15.49	757.1	17.44	71.91	174.7	2.128	16.85	495.4	0.1444	12.29	5454.00	1	5.36	149	1.46	29.19	98	405.6
132	84ES 132	427833	3942487	1310	0.8137	15290	19.53	21.48	844	38.07	100.7	161.7	5.752	19.32	360.1	0.2621	15.62	7027.00	1	7.35	236	2.81	31.42	289	394.8
133	84ES 133	430058	3941987	1240	0.8618	13240	13.2	17.32	641.9	29.15	94.48	267.4	3.568	13.89	305.1	0.1737	11.08	4354.00	1	4.66	125	1.86	26.71	152	367.4
134	84ES 134	430338	3942070	1424	1.563	13670	19.9	16.26	582.9	31.02	92.27	234.5	4.451	14.79	237.1	0.2743	16.29	5983.00	1	5.35	232	2.46	24.13	179	307.9
135	84ES 135	430925	3941546	1240	0.9671	13340	16.68	25.21	694.5	26.12	71.3	223	3.083	17.13	287.9	0.2155	13.41	5093.00	1	4.87	182	1.90	23.53	159	312.9
136	84ES 136	431394	3942173	1659	1.498	9471	36.17	24.51	519.3	71	62.75	127.5	8.54	19.42	229.6	0.5846	29.53	8115.00	1	7.72	490	3.15	21.39	273	256.9
137	84ES 137	429829	3938460	1019	1.267	10810	13.03	20.59	631.5	17.46	86.97	257.6	2.581	12.26	191.6	0.1662	11.34	4099.00	1	4.22	130	1.83	20.92	91	245
138	84ES 138	430386	3939241	1504	1.305	16330	21.62	23.53	883.5	31.99	140.9	285.1	2.419	16.01	276.5	0.1491	21.69	5818.00	1	5.24	192	2.57	31.30	117	367.6
139	84ES 139	430594	3939499	1041	1.556	10300	12.72	16.97	660.9	27.66	84.43	228.6	7.806	11.5	193.2	0.309	12.81	3492.00	1	3.06	105	1.68	22.89	101	278.1
140	84ES 140	429750	3940727	2086	1.631	11290	25.04	23.61	765.4	62.95	97.96	875.5	3.861	14.08	341.5	0.2583	27.35	6878.00	1	6.52	265	5.39	27.69	337	340.1
141	84ES 141	428805	3941506	1441	0.7272	11400	22.08	21.67	815.5	23.26	55.59	243.2	2.743	18	394.1	0.1876	23.15	7257.00	1	6.51	255	2.25	28.56	138	356.3
142	84ES 142	427695	3939607	736.3	0.4106	6840	11.28	19.71	750.9	22.1	26.56	436.3	4.313	8.691	171.8	0.1652	12.22	3504.00	1	3.13	97	2.09	18.48	105	228.9
143	84ES 143	428005	3939625	1158	1.002	5006	12.68	21.73	677.8	25.56	8.58	536.7	3.158	8.455	139.2	0.1796	15.29	3375.00	1	3.27	123	3.10	15.16	165	179.4
144	84ES 144	427090	3941345	1524	0.7105	8077	17.13	18.53	967.9	32.5	10.05	123.6	6.584	17.81	238.1	0.2582	20.49	5484.00	1	5.36	220	3.70	24.50	210	326.7
145	84ES 145	425855	3940204	713.7	1.089	5930	12.55	21.91	930.2	37.54	20.12	1477	9.236	8.655	144.9	0.1457	12.43	3530.00	1	3.18	73	2.29	23.08	110	317.6
146	84Es 146	424820	3939813	1061	1.065	11550	16.38	34.77	938.7	57.93	96.73	1742	5.706	15.91	291.8	0.1912	15.98	5345.00	1	3.91	136	2.35	33.51	141	390
147	84Es 147	423409	3939635	1202	1.476	10910	20.19	31.46	747.6	82.61	91.68	1441	9.986	16.8	280.4	0.2672	20.27</								

ردیف	شماره نمونه	x_c	y_c	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	S	Sb	Sc	Sr	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
151	84Es 151	421258	3937512	927.8	0.6309	11360	12.97	22.98	665	46.14	76.46	487.7	1.555	12.17	295.1	0.1479	12.9	4346.00	1	3.10	126	1.84	26.50	126	286.6
152	84Es 152	421932	3938043	926.3	1.051	10580	15.65	31.3	861.3	48.74	82.38	1364	5.159	12.86	286.2	0.1678	15.56	4936.00	1	3.61	141	2.12	30.40	105	316.8
153	84Es 153	422090	3937492	1081	0.9681	11500	17.42	28.23	832.1	52.95	83.58	527.4	3.373	14.33	255	0.213	16.94	5705.00	1	4.25	170	2.17	32.98	140	350.7
154	84Es 154	445780	3961953	641.6	0.899	13420	13.94	23.43	576	27.75	58.48	1870	1.438	10.17	346.7	0.1617	12.76	4815.00	1	3.42	131	1.50	22.58	65	243.6
155	84Es 155	447442	3963581	556.8	0.7216	14490	10.82	20.31	516.7	24.2	58.23	4825	1.169	9.148	315.5	0.1085	10.1	3583.00	1	2.50	91	1.34	21.41	56	238.3
156	84Es 156	453159	3962454	777.7	2.318	8803	9.086	22.16	512.9	30.24	49.31	85790	0.6552	7.742	2419	0.1	8.397	2765.00	1	1.95	70	1.10	19.54	66	205.1
157	84Es 157	452595	3963179	883.7	2.587	7157	9.257	25.08	530.9	30.18	49.67	73850	0.8207	8.139	3737	0.1	8.666	2697.00	1	1.87	71	1.10	19.20	69	199.5
158	84Es 158	450832	3964076	867.1	2.661	8110	9.239	23.65	516.3	32.33	49.88	82500	0.7326	8.112	5083	0.1	8.376	2769.00	1	1.93	72	1.10	19.06	73	218.9
159	84Es 159	449347	3963835	722.6	1.621	10690	12.79	23.76	528.9	54.47	51.34	36550	1.397	9.062	4094	0.156	11.56	4372.00	1	2.94	113	1.77	20.39	138	212.4
160	84Es 160	446598	3960232	628.3	1.315	13140	10.3	18.72	475.4	33.39	48.58	17550	1.018	7.806	2018	0.0952	9.293	3392.00	1	2.32	82	1.42	19.86	66	194.9
161	84Es 161	450471	3960701	800.9	2.477	7950	9.79	22.01	477.7	25.67	44.17	101900	0.699	7.465	3228	0.1	8.456	3092.00	1	2.10	76	0.98	19.12	46	202.5
162	84Es 162	451403	3960399	738.9	3.092	8012	8.388	15.48	455.3	25.65	32.92	121500	0.726	6.12	4407	0.1	7.198	2831.00	1	1.86	65	0.84	16.33	38	170.1
163	84Es 163	450839	3959930	855.6	3.007	8683	11.46	27.16	654.7	31.86	56.72	31230	0.8853	9.7	1967	0.1037	10.32	3498.00	1	2.36	89	1.24	23.24	60	247.5
164	84Es 164	449510	3959333	730.1	2.654	8378	11.52	25.36	774.2	36.79	49.75	69590	0.8366	9.061	1365	0.1076	9.797	3703.00	1	2.48	89	1.13	21.89	64	258.7
165	84Es 165	442610	3958362	583.4	0.4973	14730	11.63	21.1	538.5	23.16	50.69	476.4	0.9366	9.831	284.7	0.1269	10.45	3985.00	1	2.70	100	1.28	21.28	48	193.9
166	84Es 166	441468	3957150	451.3	0.3896	15150	8.905	16.11	460.3	20.63	58.9	3590	0.6959	7.523	476.5	0.1	7.98	2696.00	1	1.78	64	1.23	21.20	42	224.2
167	84Es 167	440675	3958200	527.1	0.4109	12750	10.37	25.67	505.2	21.49	56.02	354.1	0.6012	8.248	335.4	0.0994	9.095	3451.00	1	2.25	81	1.19	21.18	47	216.8
168	84Es 168	439027	3956628	542.2	0.7863	12260	12.52	17.86	492.7	24.97	45.76	793.2	1.455	8.633	363.1	0.1613	11.02	4404.00	1	2.83	107	1.37	22.70	54	243.8
169	84Es 169	453922	3951203	1023	1.241	10920	14.67	29.48	775.9	48.29	87.47	332.2	1.232	10.28	223.5	0.119	12.88	4398.00	1	2.92	101	1.89	33.95	90	411.4
170	84Es 170	453486	3950961	1066	1.217	11610	15.25	27.2	847.1	58.37	88.54	280.3	1.279	10.81	204.8	0.126	13.16	4604.00	1	3.07	105	2.02	35.70	104	402.7
171	84Es 171	451963	3949985	1139	1.205	11000	17.51	40.88	1306	44.06	118.2	561	1.754	15.85	169.1	0.1687	16.58	5033.00	1	3.52	154	2.05	30.37	103	365.9
172	84Es 172	453028	3948258	1209	0.9583	10350	17.46	38.85	1154	46.57	123.8	397.4	1.662	16.27	159.2	0.1543	16.39	5083.00	1	3.61	152	2.22	31.54	99	351.3
173	84Es 173	451393	3950153	1031	1.413	11010	17.31	24.73	894.1	43.36	118.5	862.2	1.591	12.29	185.3	0.1619	16.2	4898.00	1	3.37	129	2.27	30.01	113	332.1
174	84Es 174	450426	3950227	961.1	1.456	9372	17.87	24.32	841.7	41.62	105.5	394.8	1.463	10.46	178	0.1499	14.83	4921.00	1	3.27	120	2.25	29.76	112.00	325.2
175	84Es 175	450934	3951934	940.1	1.842	10760	19.03	28.48	913.9	42.46	99.58	532.3	2.1	11.7	191.4	0.2025	17.78	5564.00	1	3.87	153	2.26	28.70	101	314.3
176	84Es 176	448864	3949807	976.8	1.307	10940	14.65	26.68	932.1	53.97	103.2	517	1.132	11.82	190.7	0.1315	13.59	4213.00	1	2.85	113	2.05	28.92	122	332.1
177	84Es 177	450307	3948312	1131	1.754	13100	17.28	25.61	1231	73.56	101.6	657.6	1.516	12.69	201.1	0.1689	15.39	5431.00	1	3.68	141	2.41	29.09	160	313.3
178	84Es 178	451769	3947833	1017	1.332	13220	16.39	26.5	1251	43.27	88.12	360.8	1.735	12.27	217.2	0.1707	15.22	5360.00	1	3.62	133	2.22	31.59	111	390.9
179	84Es 179	449557	3947441	1093	0.9465	12670	18.93	28.47	1273	45.49	96.51	255.6	1.873	13.63	218.8	0.1793	16.61	5906.00	1	4.08	145	2.14	32.76	116	374.3
180	84Es 180	448140	3949801	1135	1.1	12640	21.42	25.65	1327	47.1	99.99	285.4	2	14.08	211	0.2077	18.65	6804.00	1	4.68	170	2.37	35.11	122	428.3
181	84Es 181	447862	3948401	1007	0.8168	12350	20.12	23.28	1256	37.47	83.42	374.1	1.514	16.94	245.5	0.1974	18.92	6377.00	1	4.49	175	1.82	36.17	102	406.3
182	84Es 182	446953	3949832	961.5	0.6807	12540	17.15	27.96	1005	39.07	82.41	383.5	1.222	14.3	273.3	0.157	15.05	5441.00	1	3.75	140	1.83	30.18	111	348.7
183	84Es 183	446612	3950111	1090	1.049	13340	20.17	21.65	1000	55.93	96.1	297.2	2.338	13.04	250.4	0.2553	19.2	6315.00	1	4.52	192	2.72	27.88	128	362.2
184	84Es 184	446292	3947715	1024	0.6679	14320	18.29	15.81	1227	34.3	91.24	251.7	1.299	14.27	270.8	0.1903	16.59	5849.00	1	4.10	146	1.99	34.10	96	386.4
185	84Es 185	445676	3949753	1011	0.8484	11100	13.38	18.92	1709	41.09	90.83	1709	1.045	10.82	268.4	0.1333	12.72	4336.00	1	2.96	112	2.18	27.18	155	336.1
186	84Es 186	444775	3948539	1203	1.056	11350	17.68	27.96	1139	36.85	88.81	234.9	1.576	14.17	227.4	0.1542	16.19	5417.00	1	3.79	137	2.13	34.18	112	380.4
187	84Es 187	445123	3946079	1355	1.213	10060	17.05	29.53	1353	37.29	87.36	728.5	1.471	14.67	225.5	0.1491	15.84	5102.00	1	3.57	134	2.25	34.42	130	362.7
188	84Es 188	445433	3946305	1060	0.8781	11840	16.98	29.32	1189	36.7	77.87	313.4	1.634	13.75	223.7	0.1475	15.07	5335.00	1	3.73	127	1.95	34.53	102	380.6
189	84Es 189	443876	3949859	1078	1.102	10020	17.47	29.64	1081	40.27	69.75	231.8	1.916	13.11	223.5	0.189	16.03	5926.00	1	3.98	141	2.25	31.81	113	389.3
190	84Es 190	443358	3949172	1110	0.9805	9903	17	28.59	891.1	37.04	64.53	256.6	1.684	14.77	234.8	0.1668	16.58	5519.00	1	3.90	147	2.09	31.57	108	349.1
191	84Es 191	442927	3947625	1235	1.107	8564	16.29	27.71	1053	39.85	71.72	442.7	1.732	13.85	205.6	0.1665	15.69	5085.00	1	3.66	134	2.23	33.00	120	363.3
192	84Es 192	442055	3947846	1215	0.854	9552	16.35	21.65	1034	39.37	81.9	167.3	1.342	13.66	191.8	0.1702	15.76	5222.00	1	3.69	134	2.50	31.99	135	418.7
193	84Es 193	442183	3950227	1221	1.161	9168	19.1	23.87	1054	46.26	68.49	197.4	1.808	13.92	201	0.2038	18.42	6394.00	1	4.49	164	2.56	32.09	125	339.1
194	84Es 194	441167	3948231	1127	0.8829	7773	14.19	26.77	1469	48.29	77.06	748.6	1.187	13.14	276.4	0.1359	14.7	4550.00	1	3.24	123	1.98	29.02	112	313.1
195	84Es 195	440563	3947682	1245	0.9463	12030	19.22	22.69	1307	49.42	124.7	407.6	1.274	15.08	231.2	0.1677	18.71	5940.00	1	5.89	154	2.38	35.05	128	399.3
196	84Es 196	440345	3947550	1187	0.9121	11910	16.61	19.86	1151	50.87	121.1	305.1	1.155	12.98	212.4	0.1463	16	5005.00	1	4.84	124	2.29	35.00	119	403.9
197	84Es 197	439842	3950420	1393	1.069	12520	18.08	24.96	1276	70.56	122	319.1	1.568	14.8	209.2	0.1564	17.57	5776.00	1	5.57	150	2.46	35.93	157	413
198	84Es 198	439271	39																						

ادامه پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهازد

ردیف	شماره نمونه	x_c	y_c	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	S	Sb	Sc	Sr	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
201	84Es 201	439850	3962359	527.6	0.5242	14420	11.61	18.92	477.2	22.99	55.09	11380	0.8724	8.297	386.6	0.1092	9.658	3886.00	1	3.19	94	1.24	21.02	48	201.1
202	84Es 202	441832	3961715	724.2	1.149	11960	13.17	30.72	598	28.71	55.79	14840	1.425	10.69	965.4	0.1362	11.68	4443.00	1	3.81	120	1.45	23.42	63	247.4
203	84Es 203	436845	3962565	589	0.6053	13310	13.58	22.88	569.5	25.22	53.96	618.9	1.096	9.132	374	0.1561	11.74	4812.00	1	3.95	120	1.31	22.35	58	215.6
204	84Es 204	436411	3962569	662.4	0.8257	13650	17.22	22.41	528.4	27.72	54.84	468.6	1.774	9.772	274.2	0.2333	14.59	6318.00	1	5.28	165	1.39	24.22	66	266.1
205	84Es 205	435127	3962884	502.6	0.5104	13730	10.33	19.56	491.7	22.9	54.14	468.1	0.9295	8.274	258.6	0.1057	9.292	3369.00	1	2.86	85	1.19	21.34	47	202.2
206	84Es 206	433743	3958772	593.1	0.6551	19110	11.55	25.65	546	24.49	65.51	318.8	1.389	10.15	320.9	0.1127	9.694	3944.00	1	2.64	94	1.36	22.03	61	295.7
207	84Es 207	435311	3958101	607.3	0.6118	19000	11.63	25.48	551.6	24.09	62.78	323.5	1.424	9.77	293.2	0.109	9.456	4077.00	1	2.68	93	1.23	21.52	58	315.8
208	84Es 208	436220	3956566	647.7	0.7249	18040	13.32	25.98	553.9	24.51	61.51	315.8	1.662	10.1	282.2	0.1361	10.91	4860.00	1	3.25	118	1.42	21.69	68	296.7
209	84Es 209	418792	3928967	969.2	1.187	20330	11.77	21.95	840.3	26.68	86.97	440.2	1.579	12.75	165	0.1109	9.878	3792.00	1	2.62	69	1.40	32.20	64	315.6
210	84Es 210	416136	3929027	1696	2.101	17970	11.55	19.76	693	27.63	78.41	299.4	1.617	12.32	133.1	0.1192	10.45	3019.00	1	2.41	57	1.53	29.78	81	348.1
211	84Es 211	412678	3929171	1450	2.481	24160	13.76	12.51	735	25.82	49.73	330.3	1.595	11.41	159.3	0.1633	11.61	3703.00	1	2.96	60	1.92	37.36	87	289.6
212	84Es 212	411504	3929202	998.9	1.623	12520	14.97	22.83	867.3	29.05	73.53	672.1	2.268	11.87	179.9	0.1801	13.87	4062.00	1	3.32	131	2.09	26.55	105	316.3
213	84Es 213	411076	3929291	1115	1.325	13970	19.38	16.75	755.5	27.4	62.98	353.6	2.851	12.47	174.1	0.2373	17.62	5050.00	1	4.43	171	2.48	27.63	97	280.5
214	84Es 214	410804	3929217	1899	0.9194	15760	22.29	26.4	808.3	35.35	86.59	280.3	3.335	17.81	232.7	0.2732	20.58	6266.00	1	5.46	268	2.70	27.87	156	335
215	84Es 215	418041	3932067	1218	1.434	19590	11.7	16.73	734.1	57.19	59.28	392.1	1.46	11.45	171.8	0.1136	9.96	3703.00	1	2.67	71	1.87	31.54	119	331.3
216	84Es 216	417585	3931730	1147	1.552	18780	12.38	22.64	698.5	35.96	84.61	717.1	2.014	12.25	205.6	0.1153	10.37	3882.00	1	2.69	75	1.83	34.45	102	391.2
217	84Es 217	418197	3931483	1291	1.679	18240	10.76	16.68	710.4	36.36	60.41	310.2	1.58	10.57	149	0.1086	8.617	3374.00	1	2.33	65	1.82	27.64	122	283.3
218	84Es 218	416084	3931562	1083	1.307	17140	9.234	10.41	494.6	66.44	47.72	197.4	1.441	9.617	146.2	0.1156	7.771	2872.00	1	2.09	53	1.52	26.17	98	261.2
219	84Es 219	417541	3932719	1448	2.107	17480	13.28	27.32	1084	108.8	77.98	715.2	2.606	12.89	149	0.1339	11.94	3707.00	1	2.85	95	2.49	35.34	206	299.8
220	84Es 220	419549	3931962	1075	1.646	17190	14.21	22.51	728.5	33.48	90.64	368.5	2.23	12.92	198.1	0.1329	11.62	4478.00	1	3.17	97	1.92	33.80	106	403.2
221	84Es 221	419644	3933396	904	1.067	16580	16.8	15.65	601.9	31.52	79.89	481	2.268	12.67	276.5	0.1594	13.06	5628.00	1	3.94	131	1.75	30.74	109	301.1
222	84Es 222	421529	3934961	1080	1.532	17570	14.27	17.38	590.4	54.73	76.2	248.6	2.349	13.49	211.8	0.1581	12.63	4849.00	1	3.48	126	2.07	32.32	161	444
223	84Es 223	438480	3948679	1281	0.4465	20380	16.46	20.06	988.9	39.64	94.98	189.6	2.923	22.15	273.2	0.1936	14.32	6205.00	1	4.54	190	2.02	32.66	151	361.7
224	84Es 224	436992	3949448	1257	0.8685	19090	19.51	20.05	831.1	71.8	112.5	341.3	4.081	18.61	240.9	0.2429	17.46	6150.00	1	4.86	224	2.20	30.23	157.80	421.1
225	84Es 225	436443	3949616	1571	0.7592	13630	18.72	26.83	822.3	76.22	121.1	313.8	5.686	19.28	260.2	0.2473	16.76	5722.00	1	4.64	205	2.76	27.34	190	350.9
226	84Es 226	435660	3948917	1909	0.5454	21380	17.4	24.28	782.5	62.59	122	277.5	3.666	22.08	277.9	0.2387	15.57	5871.00	1	4.55	193	3.56	30.48	349	355.5
227	84Es 227	434816	3949376	1868	0.8696	17160	21.55	23.46	957.5	97.47	157.7	505.4	6.623	18.59	305.2	0.2973	17.51	7483.00	1	5.45	223	3.66	30.15	351	548.4
228	84Es 228	433678	3947828	1442	0.3658	22180	15.49	17.1	881.3	55.62	77.7	243.7	2.803	21.85	283.9	0.2258	13.37	5833.00	1	4.26	182	2.35	31.96	216	392.5
229	84Es 229	432938	3948925	1589	1.394	20070	24.23	20.88	1007	74.92	86.68	360.4	3.682	22.8	322.1	0.3194	20.2	9854.00	1	7.06	315	2.52	36.15	217	503
230	84Es 230	432381	3947543	1493	1.302	23490	23.09	16.85	1112	66.68	86.95	420.5	3.075	23.78	352	0.3038	19.17	8932.00	1	6.44	282	2.54	39.22	196	553.7
231	84Es 231	431102	3948424	1219	1.323	18640	19.72	36.45	1267	50.96	71.15	394.4	2.016	19.45	452.6	0.2137	14.75	6868.00	1	4.70	178	1.82	32.24	146	583.1
232	84Es 232	430880	3947850	1143	0.5172	19630	21.01	21.18	747.2	33.35	50.7	168	2.875	21.31	425.5	0.2718	18.1	7050.00	1	5.47	254	1.69	31.24	115	428
233	84Es 233	429977	3948110	1244	0.9057	21400	21.82	24.03	1048	32.59	53.93	279.4	2.692	19.74	509.3	0.2854	16.7	8091.00	1	5.62	240	1.53	30.84	126	583.4
234	84Es 234	431741	3951142	1231	1.114	21810	19.96	20.58	892.6	57.68	80.46	230.8	2.86	19.4	320.8	0.2445	16.64	7642.00	1	5.40	236	1.98	33.18	157	463
235	84Es 235	431427	3951972	1171	0.9915	22490	20.52	22.19	1102	36.76	57.44	317.7	2.51	18.4	519.3	0.262	15.16	7513.00	1	5.14	211	1.54	30.22	120	589.5
236	84Es 236	430017	3950299	1228	1.282	19140	19.77	24.16	863	41.13	74.14	257.1	3.487	17.06	355	0.2633	15.6	7187.00	1	5.05	219	2.01	28.20	150	527.2
237	84Es 237	428272	3948334	1049	1.945	17230	16.26	32.32	1008	35.54	92.24	473.6	2.323	15.28	398.9	0.169	13.33	5491.00	1	3.87	143	2.09	29.85	137	467.6
238	84Es 238	428217	3946001	1252	1.799	23040	23.95	35.1	1718	39.53	64.99	248.6	2.732	16.82	436.9	0.2625	15.66	8298.00	1	5.52	188	1.89	31.55	161	697.2
239	84Es 239	428702	3945071	1233	1.466	18310	24.76	36.02	1539	44.87	81.54	1297	3.887	17.21	414.6	0.29	17.76	8758.00	1	6.09	217	2.35	32.70	186	600.1
240	84Es 240	429278	3944870	1255	0.9165	19330	20.51	31.08	1235	41.56	75.54	670.4	3.163	17.36	439.3	0.2455	16.03	7208.00	1	5.03	192	1.91	35.49	143	560.8
241	84Es 241	429796	3945168	2114	1.317	16300	35.13	20.68	926.7	67.85	75.69	209.3	6.062	22.81	385.1	0.5165	30.47	13250.00	1	10.34	475	3.41	40.37	300	652.6
242	84Es 242	426333	3944641	1447	1.992	15910	20.55	21.64	1150	53.89	127.4	336.9	3.998	18.62	270.5	0.2501	17.01	8308.00	1	5.75	224	3.73	35.71	318	550.7
243	84Es 243	425369	3946474	1666	2.559	15580	29.1	23.34	869.3	66.09	107.7	172.6	5.883	18.73	224.7	0.4058	23.99	12600.00	1	9.11	429	4.65	34.40	441	604
244	84Es 244	424987	3946494	1380	1.859	17850	20.03	22.89	1039	51.2	114.6	221.4	3.556	17.23	278.5	0.2366	16.39	7829.00	1	5.36	215	3.02	34.90	267	623.2
245	84Es 245	424313	3946005	1470	1.862	13740	21.62	25.04	1052	55.46	136.2	260.9	3.768	16.81	234.8	0.2393	17.98	8738.00	1	6.06	231	3.71	36.27	315	566.4
246	84Es 246	424053	3944001	1806	1.137	16180	16.52	17.41	1242	58.04	166.1	236.8	3.35	18.38	250.5	0.178	14.31	5562.00	1	3.97	134	3.33	39.88	319	566.9
247	84Es 247	424121	3943888	1653	1.419	17100	16.51	24.04	1035	54.97	115.3	958.4	4.5	21.67	294.5	0.1931	14.86	5180.00	1	3.93					

ادامه پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهازد

ردیف	شماره نمونه	x_c	y_c	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	S	Sb	Sc	Sr	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
251	84Es 251	421947	3947478	1231	1.723	14520	18.22	18.58	1133	62.12	147.9	261.8	5.726	15.4	245.8	0.2178	15.86	6533.00	1	4.63	172	3.50	35.44	267	624.1
252	84Es 252	421517	3947987	1864	2.415	15230	29.45	15.71	674.6	65.1	80.56	1376	11.55	12.58	241	0.4693	23.96	10820.00	1	8.24	378	4.65	28.82	416	396.6
253	84Es 253	422636	3947266	1389	2.338	14310	17.49	10.75	1300	66.54	221.1	175.2	4.742	16.49	193.1	0.2036	15.26	6934.00	1	4.65	149	4.06	39.50	310	651.4
254	84Es 254	425242	3948475	1658	2.681	14990	27.54	24.57	1122	63.64	110.5	215.2	5.348	18.18	228.4	0.3866	23.03	12420.00	1	8.76	367	4.47	36.52	416	576.3
255	84Es 255	425641	3948233	1376	1.937	17780	19.43	16.73	1009	51.18	117	175	3.732	16.45	260.1	0.2574	16.53	7737.00	1	5.34	214	3.38	35.30	291	629.3
256	84Es 256	426772	3949736	1148	2.019	21470	24.13	28.25	1053	49.77	86.79	3171	2.847	17.79	570	0.3165	20.45	9264.00	1	8.20	275	2.09	32.84	165	613
257	84Es 257	424700	3951171	1417	1.683	15690	27.99	38.02	921	47.91	76.7	451.3	3.647	18.02	463.1	0.385	24.69	10540.00	1	9.39	361	2.02	28.20	168	497.2
258	84Es 258	424140	3951302	1316	1.909	17900	23.79	27.16	952.5	51.65	87.27	284.1	3.316	15.33	523.1	0.3206	20.8	9128.00	1	7.92	276	2.09	30.22	169	569.7
259	84Es 259	423468	3951715	1595	1.871	16520	20.57	19.55	1237	63.95	152	226.9	3.419	18.4	300.9	0.2598	19	8021.00	1	6.72	202	3.31	36.66	302	620.2
260	84Es 260	422572	3951481	1269	2.123	16170	22.66	27.78	747.1	54.11	90.6	418.5	3.704	14.37	339.3	0.3158	20.68	8686.00	1	7.23	269	2.44	26.44	194	486.8
261	84Es 261	421649	3951871	1208	1.611	19240	19.4	20.05	842.4	55.3	106.6	299	3.654	13.3	353.7	0.2342	17.78	6978.00	1	5.46	197	2.35	28.66	166	501.1
262	84Es 262	421242	3951215	1185	1.629	20690	17.9	18.15	795.1	55.22	112	300.7	3.903	13.39	345.4	0.2126	16.47	6162.00	1	4.73	170	2.10	29.13	147	487
263	84Es 263	420575	3950898	1435	1.977	18180	24.55	22.63	752.4	54.85	80.23	302.1	3.409	14.5	366.9	0.333	22.2	8715.00	1	7.00	280	2.10	28.37	151	476.1
264	84Es 264	420573	3952257	1137	1.302	19860	16.72	19.33	771.1	45.71	88.53	327.8	2.32	13.53	407	0.1889	15.61	5809.00	1	4.33	159	1.69	28.10	116	456.8
265	84Es 265	420127	3952195	1246	1.998	19180	20.8	24.77	780.6	54.61	81.21	388.8	3.069	15.68	346.6	0.2484	19.2	7113.00	1	5.58	231	2.07	26.88	139	397.8
266	84Es 266	420123	3950284	1412	1.619	18910	24.17	25.73	920.4	57.45	89.71	411.4	4.044	16.17	402	0.299	21.97	8698.00	1	7.08	271	2.07	31.03	163	494.5
267	84Es 267	420404	3948425	1174	1.197	18650	16.45	21.16	747.7	44.12	87.88	355.2	2.003	14.04	391.2	0.157	15.43	5639.00	1	4.25	157	1.61	28.08	110	427
268	84Es 268	419437	3950639	1462	1.957	22000	27.28	21.47	690	62.58	82.76	332.3	4.358	14.7	339.1	0.3531	24.68	9435.00	1	7.49	320	2.36	26.24	165	439.9
269	84Es 269	418973	3948886	1468	1.762	17580	25.82	24	880.8	50.95	72.35	532.1	3.393	15.63	455.5	0.325	23.09	9882.00	1	7.92	301	1.96	30.53	146	538.4
270	84Es 270	419714	3947345	1835	1.969	15310	22.46	25.05	1311	107.5	121.8	364.5	11.03	16.96	460.9	0.2257	20.43	8105.00	1	6.07	188	2.69	39.00	184	665.9
271	84Es 271	420003	3946301	1463	1.089	17230	18.67	22.9	1303	63.66	129.1	250.7	3.853	19.28	447.1	0.207	17.33	6764.00	1	5.14	167	2.57	35.39	236	646.2
272	84Es 272	417743	3950238	1179	1.065	20660	16.94	20.42	882.1	55.52	91.79	561.7	2.531	17.05	384.8	0.1861	15.86	5841.00	1	4.21	172	1.85	28.83	144	437.5
273	84Es 273	417183	3948898	1362	1.373	14570	25.4	28.94	688.1	44.73	70.9	2607	3.295	14.67	570	0.3482	24	9081.00	1	7.26	327	2.04	23.01	127	351.2
274	84Es 274	416700	3950055	1237	1.222	20020	22.59	21.36	567.1	43.29	67.84	209.7	2.896	16.5	402.3	0.3159	21.06	8605.00	1	6.75	294	1.74	23.15	108.00	375.1
275	84Es 275	416188	3949940	1186	1.252	20010	22.17	21.69	554.7	42.25	66.22	282.7	2.843	15.56	473.9	0.3148	20.98	8193.00	1	6.16	282	1.80	22.79	105	370.1
276	84Es 276	415666	3950246	1029	0.9528	17780	17.4	24	700.4	37.27	71.9	295.9	2.14	15.15	379.2	0.1996	16.8	6338.00	1	4.59	199	1.30	23.83	91	344.2
277	84Es 277	416259	3952822	1052	1.214	17920	16.57	27.06	786.6	40.34	75.43	661.2	1.915	14.96	430.8	0.1689	15.96	5921.00	1	4.26	183	1.54	23.42	104	373.4
278	84Es 278	414850	3949706	1093	1.219	16210	16.52	29.85	727.3	36.83	73.75	565.9	1.894	13.94	372	0.1539	15.37	5882.00	1	4.30	170	1.59	22.17	92	311
279	84Es 279	415034	3952309	963.6	1.098	17050	15.22	27.77	775.9	36.95	75.91	1532	1.569	15.01	360.6	0.1245	14.76	5184.00	1	3.72	156	1.51	24.42	86	388
280	84Es 280	414134	3951935	1337	1.754	16760	26.92	24.6	664.5	48.25	62.27	271.6	3.016	16.85	283.3	0.3079	25.58	9414.00	1	7.35	333	2.08	25.89	127	335.7
281	84Es 281	413244	3950373	1003	1.978	19150	17.31	19.14	631	38.8	67.24	209.2	2.044	14.61	292.8	0.1933	17.13	6213.00	1	4.42	197	1.49	24.13	84	354.6
282	84Es 282	413003	3950980	1022	0.9778	17450	15.45	23.65	720.9	38.49	69.68	298.1	1.717	14.4	327.8	0.1475	15.09	5387.00	1	3.89	161	1.49	24.55	83	329.9
283	84Es 283	412551	3952411	948.2	1.082	19330	15.45	22.62	736.9	40.23	75.62	571.7	1.858	14.04	276.8	0.1469	15.11	5237.00	1	3.77	155	1.63	25.90	94	321.4
284	84Es 284	411761	3953177	952.5	1.297	16830	19.06	26.97	741.7	40.9	68.73	447.2	2.206	14.03	287.5	0.1739	18.31	6569.00	1	4.88	221	1.59	23.44	99	313.7
285	84Es 285	410672	3953262	1097	1.277	16250	15.34	25.53	796.4	43.64	80.85	466.2	1.833	13.58	360.4	0.1386	14.84	5283.00	1	4.11	151	1.57	24.09	99	371.7
286	84Es 286	410240	3952981	1015	1.381	14370	16.76	30.48	697	38.6	70.86	621.3	2.019	13.2	489	0.17	15.87	5896.00	1	4.44	179	1.38	21.65	92	310.4
287	84Es 287	411061	3951249	1236	1.513	14470	20.71	27.16	783.1	47.61	76.32	435.1	2.862	14.05	340.1	0.2349	20.02	7041.00	1	5.50	245	1.95	24.04	121	348.7
288	84Es 288	410088	3949148	875.7	1.354	18640	13.82	16.12	581.7	38.37	64.35	386.1	1.391	12.93	190.6	0.134	13.27	4624.00	1	3.33	128	1.39	25.62	94	262.5
289	84Es 289	411832	3948972	865.9	0.9936	19910	14.42	17.42	693.3	36.85	70.06	281.3	1.78	15.18	349	0.1481	14.29	5054.00	1	3.57	151	1.45	24.23	78	357.3
290	84Es 290	411568	3947639	1017	0.8488	14060	18.17	25.21	796.3	38.62	73.77	241.6	2.305	16.71	395.3	0.2008	18.2	6502.00	1	4.56	213	1.62	24.33	93	373.3
291	84Es 291	411341	3947153	905.3	0.8615	23030	12.92	13.3	610.3	38.29	70.18	215.7	1.606	13	245.5	0.1383	12.82	4490.00	1	3.20	124	1.34	24.70	88	350.2
292	84Es 292	411051	3946971	852.4	0.9633	20550	10.75	16.83	616.4	34.08	68.34	357.6	1.218	11.72	203.3	0.0962	10.47	3393.00	1	2.49	85	1.20	22.86	77	309.7
293	84Es 293	410241	3946539	1059	1.163	19580	14.44	22.96	790.9	41.6	66.55	636.2	1.548	14.18	210.6	0.1221	13.71	4635.00	1	3.44	130	1.47	25.35	98	294.7
294	84Es 294	410310	3945099	874.1	0.8276	14850	14.73	22.52	751.7	39.66	70.02	931.9	1.502	12.57	310.8	0.1228	14.17	5000.00	1	3.59	142	1.53	24.10	94	306.2
295	84Es 295	411827	3946205	1123	1.076	12590	21.58	22.89	658.2	43.32	55.11	236.2	2.517	16.98	295.4	0.258	20.94	7943.00	1	5.98	297	1.63	25.66	107	292.9
296	84Es 296	411829	3945884	812.3	0.9393	21800	13.87	16.18	562.2	36.89	46.91	315.6	1.57	12.73	203.1	0.1445	13.69	4910.00	1	3.46	155	1.07	22.62	73	255.5
297	84Es 297	412676	3944887	908.5	0.7076	17470	15.52	27.81	642.9	39.01	48.89	314.1	1.722	14.91	225.3	0.152	14.91	5719.00	1	4.23	162	1.23	25.71</		

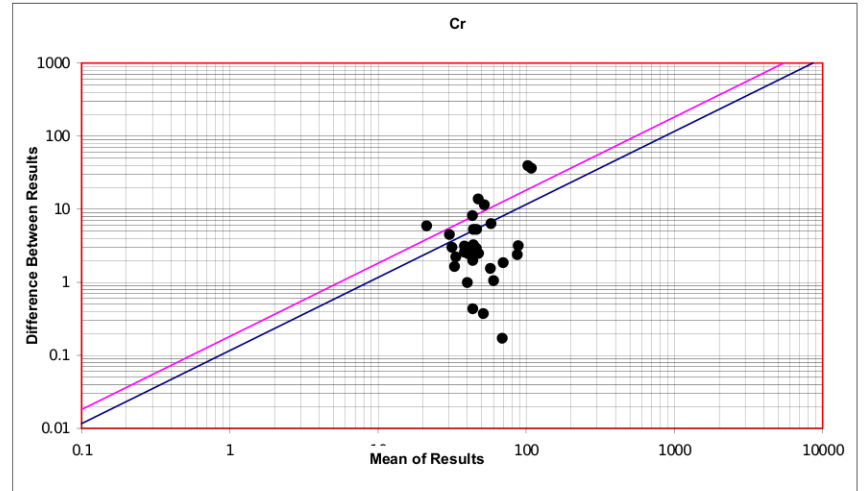
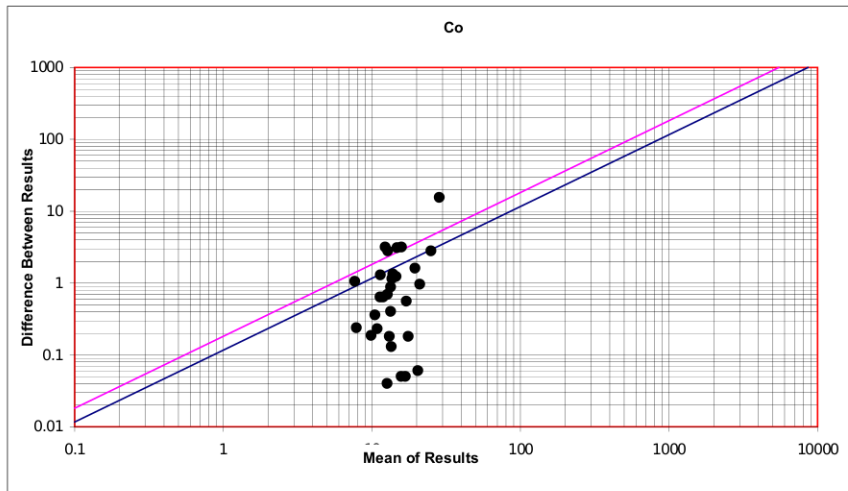
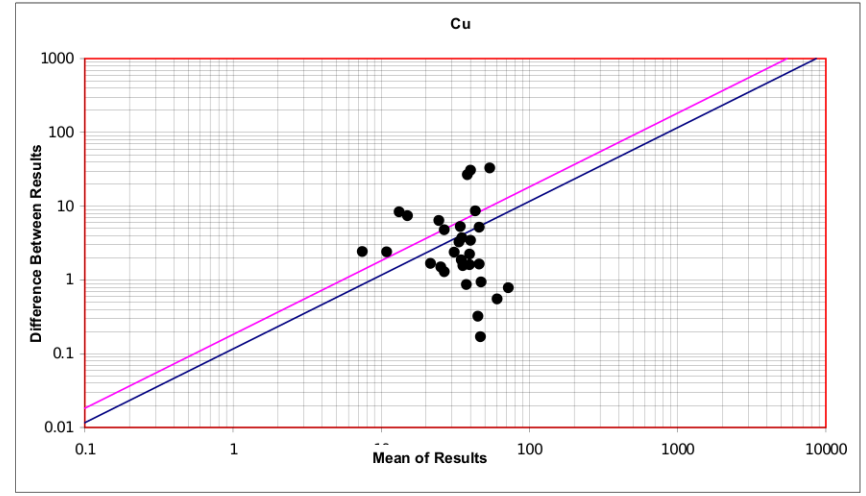
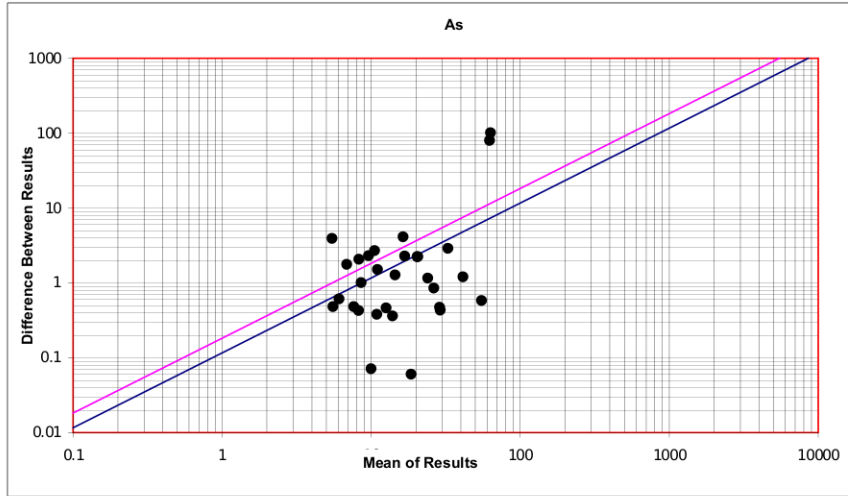
ادامه پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهازد

ردیف	شماره نمونه	x_c	y_c	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	S	Sb	Sc	Sr	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
301	84Es 301	410536	3941869	852.9	1.22	20690	17.65	18.87	652.7	37.19	45.18	371.2	1.952	15.07	214.4	0.1616	16.9	6288.00	1	4.63	198	1.01	29.49	74	245.8
302	84Es 302	410645	3940662	1012	1.372	19540	17.09	22.94	830.7	40.49	55.34	677.7	1.682	16.86	226.4	0.1598	16.97	5599.00	1	3.96	171	1.30	33.15	92	254.8
303	84Es 303	410768	3940490	1130	1.812	19800	20.24	24.16	728.8	43.52	52.79	492.3	2.285	17.47	252.6	0.203	19.5	6669.00	1	4.78	214	1.41	34.29	109	245.5
304	84Es 304	412079	3942752	1100	1.129	20650	18.3	15.23	875.1	46.03	67.09	226.4	1.81	16.59	258.5	0.1722	17.66	6851.00	1	5.14	169	1.71	29.51	119	319.1
305	84Es 305	412378	3942313	986.4	1.278	22330	18.69	17.15	803.9	40.86	51.36	284.4	1.815	16.52	242.5	0.1893	17.47	6802.00	1	4.92	181	1.37	31.84	98	270.5
306	84Es 306	413151	3942221	1125	1.035	21390	20.8	15.45	758.5	44.83	48.49	307.8	1.814	16.28	256.6	0.1889	19.87	7215.00	1	5.77	218	1.54	31.67	111	303.3
307	84Es 307	412976	3942277	1215	0.9092	14170	14.62	25.36	919	45.64	87.75	541.9	1.47	12.85	277.8	0.1251	15.63	4672.00	1	3.52	126	2.02	23.34	111	431.1
308	84Es 308	411773	3940341	1038	0.8263	21380	16.74	20.47	707.1	43.43	39.18	367.9	1.687	16.35	248.4	0.1485	16.68	5638.00	1	3.96	174	1.07	31.47	93	254
309	84Es 309	414657	3942688	1144	0.92	19150	17.88	21.32	797.9	43.14	58.94	248	1.8	17.7	283	0.1713	17.84	6128.00	1	4.56	185	1.59	28.57	113	310.4
310	84Es 310	416253	3944298	1245	0.8554	18950	19.93	29.05	843.3	49.71	69	313	2.043	18.12	327.9	0.2088	21.17	6643.00	1	5.16	217	2.03	28.65	117	443.9
311	84Es 311	416697	3945381	1280	1.261	16530	20.98	26.21	631.8	55.08	50.38	307	2.299	18.69	411.1	0.2449	20.86	8044.00	1	6.53	268	1.72	27.19	133	357
312	84Es 312	415145	3944118	1086	0.849	16200	16.43	27.89	684.3	44.17	53.5	320.9	1.825	16.23	515.9	0.1787	16.69	6019.00	1	4.64	178	1.48	26.52	96	377
313	84Es 313	414880	3944418	1075	0.8126	16580	17.58	27.84	665.4	40.83	48.31	313.4	1.919	15.99	326.5	0.1709	17.65	6676.00	1	5.10	199	1.28	27.65	92	320.9
314	84Es 314	414934	3945243	1305	1.263	14450	24.04	29.82	752.1	45.68	54.86	335.9	2.564	18.91	335.1	0.2666	24.98	8893.00	1	7.59	263	1.45	42.53	115	334.8
315	84Es 315	416156	3946508	1116	0.7988	18900	18.01	25.29	786	49.04	71.72	353.9	1.924	16.24	552.2	0.1821	18.62	6802.00	1	5.22	176	1.68	35.19	107	390
316	84Es 316	416609	3942917	977	0.8483	19880	17.12	23.27	724.1	118.9	60.09	842.1	2.521	16.28	243	0.1904	16.14	5409.00	1	4.18	181	2.63	32.38	273	234.2
317	84Es 317	416902	3942072	900.5	0.7093	16780	13.3	24.33	730.9	47.62	65.13	382.6	1.687	14.92	300.6	0.1364	12.94	4354.00	1	3.40	121	1.49	26.66	112	318.1
318	84Es 318	415439	3941249	952.3	0.6844	17980	15.67	21.24	716.9	41.78	64.75	303.9	1.562	15.28	248.5	0.1573	15.24	5116.00	1	4.19	150	1.74	27.80	104	363.8
319	84Es 319	415824	3941008	994.4	0.8693	19390	15.84	17.95	695.9	39.08	51.34	283.9	1.584	14.85	209.5	0.1557	15.02	5162.00	1	3.94	144	1.32	28.35	106	282.7
320	84Es 320	416846	3940683	892	0.9672	18160	14.07	20.39	721.4	41.25	64.08	293.4	1.507	14.82	324	0.1492	13.75	4674.00	1	3.68	132	1.48	27.06	96	371
321	84Es 321	411370	3938475	1135	1.743	20820	18.15	21.81	740.7	39.48	48.5	847.3	1.76	16.46	289.6	0.1953	17.52	5458.00	1	4.31	205	1.09	31.67	89	209.9
322	84Es 322	411460	3938222	1039	1.045	22770	15.41	18.95	559.6	35.89	48.49	255.2	1.474	16.03	221.8	0.1662	14.81	4848.00	1	3.74	163	1.20	30.76	90	237.2
323	84Es 323	412772	3939201	998.5	1.077	24410	26.73	15.91	666.1	40.15	50.44	245.9	2.405	21.16	224.7	0.2957	24.39	8064.00	1	6.27	360	0.95	41.93	92	196.1
324	84Es 324	412794	3938440	1033	0.7718	18330	15.17	19.8	743.7	40.53	64.67	364.1	1.796	16.43	304.8	0.1505	14.11	4657.00	1	3.52	146	1.35	27.42	103.80	255.8
325	84Es 325	416166	3936995	1085	0.7208	18520	15.63	19.15	749.2	40.49	56.48	347.7	1.956	16.92	289	0.184	14.31	5239.00	1	4.04	164	1.30	28.84	109	222.5
326	84Es 326	417808	3935409	1236	1.037	14820	15.67	23.85	858	44.55	69.57	573.6	2.622	15.13	272.7	0.163	14.48	4671.00	1	3.70	144	1.62	26.85	136	250.4
327	84Es 327	418383	3935305	1064	0.7751	21040	16.33	20.04	712.3	37.67	70.32	809.9	1.911	14.65	252.6	0.1719	14.84	5101.00	1	4.08	160	1.55	27.26	94	246.4
328	84Es 328	417445	3935820	1156	0.7978	16170	17.93	23.73	728.6	43.05	67.11	490.1	2.258	15.75	262.5	0.1975	17.28	5119.00	1	4.07	176	1.62	26.55	119	287.5
329	84Es 329	417486	3936887	1135	0.8972	17030	16.03	26.07	830	45.04	65.7	482.9	2.023	17.13	283	0.1829	15.06	5202.00	1	4.04	163	1.70	28.22	120	273.5
330	84Es 330	416430	3938692	1099	1.116	19430	16.74	21	810.2	47.41	55.64	298.8	2.919	18.75	253.7	0.1746	16.34	5452.00	1	4.43	192	1.48	28.17	118	313.7
331	84Es 331	416205	3938075	1324	1.237	17640	18.82	17.47	827.3	60.59	76.43	396.8	2.326	17.33	248.8	0.2321	17.41	6430.00	1	4.98	200	2.01	31.21	158	280.8
332	84Es 332	415013	3936379	1499	1.876	18700	21.14	17.95	831.8	58.31	88.03	419.8	2.378	16.48	229.2	0.2222	18.71	6860.00	1	5.37	207	2.02	33.89	159	263.1
333	84Es 333	413946	3936929	1354	1.754	16940	16.02	20.28	873.6	62.19	70.82	596.5	2.286	17.15	198.2	0.1915	15.39	5147.00	1	4.15	149	1.99	32.63	180	252.3
334	84Es 334	413841	3934862	1114	1.435	16020	15.83	23.58	892.6	42.4	86.99	434.4	1.903	13.73	231.2	0.1661	14.38	5276.00	1	4.02	129	1.73	32.13	113	305.4
335	84Es 335	412735	3935880	1035	2.002	17410	16.19	20.1	649.5	47.52	75.75	371.4	2.138	13.87	219.3	0.1873	15.26	4954.00	1	4.00	141	1.75	29.25	113	308.4
336	84Es 336	412346	3935417	1230	0.7519	18510	24.19	28.55	709.9	51.78	65.59	254.3	2.706	23.18	327.7	0.2806	22.13	8355.00	1	6.61	264	2.03	30.10	129	371
337	84Es 337	412137	3934667	1350	1.373	15860	16.53	21.42	768.9	50.34	72.82	869.1	1.834	18.95	248.1	0.1826	15.39	5208.00	1	3.96	166	1.79	28.82	129	314.7
338	84Es 338	411435	3934503	1290	0.6691	17860	16.54	22.22	847.8	70.13	82.3	518.2	1.817	17.24	292.3	0.1971	15.88	5536.00	1	4.49	158	1.96	31.38	162	377
339	84Es 339	410961	3934622	1404	0.6508	17480	17.03	18.4	839.8	73.08	69.08	277.6	1.926	17.61	286.9	0.2264	16.16	5867.00	1	4.60	176	1.88	31.14	172	381
340	84Es 340	410917	3934375	1466	0.4164	15650	17.74	19.23	755.1	100.2	78.16	530.1	2.326	18.46	266.5	0.2412	16.99	5736.00	1	4.57	181	2.19	31.30	206	365.2
341	84Es 341	411280	3933660	1536	1.732	17820	16.69	20.84	764.4	45.25	74.82	863.2	2.013	16.2	219.4	0.2211	16.09	5371.00	1	4.38	158	1.96	32.20	126	288.1
342	84Es 342	410135	3933419	1249	1.298	16210	16.41	23.48	1068	43.71	67.68	1273	1.52	17.68	291.5	0.1809	15.67	5334.00	1	4.01	158	1.53	30.26	121	263.7
343	84Es 343	412878	3934974	1233	1.311	14810	17.04	17.59	815.9	42.9	75.75	374	2.121	14.73	211.3	0.2819	15	6194.00	1	4.86	163	1.84	30.07	126	243.4
344	84Es 344	413105	3933690	1664	1.723	18690	20.87	20.63	942.7	53.64	91.45	364.3	2.192	17.19	277.2	0.3373	18.11	7519.00	1	6.12	200	2.25	39.11	157	249.2
345	84Es 345	415000	3934258	1203	1.689	17960	18.68	24.7	875.2	45.45	76.09	535.8	2.068	15.79	286.6	0.2636	17.04	6458.00	1	5.23	179	1.79	35.93	120	282.5
346	84Es 346	419417	3935460	1331	0.6849	17040	16.65	22.72	645.6	61.16	72.75	258.3	1.834	16.97	250.9	0.1893	15.75	5269.00	1	4.18	171	1.75	27.60	140	337.9
347	84Es 347	420494	3940547	1461	0.7138	12270	17.26	23.96	929.5	154.4	159.5	1534	10.28	20.74	255.7	0.1875	17.42	5062.							

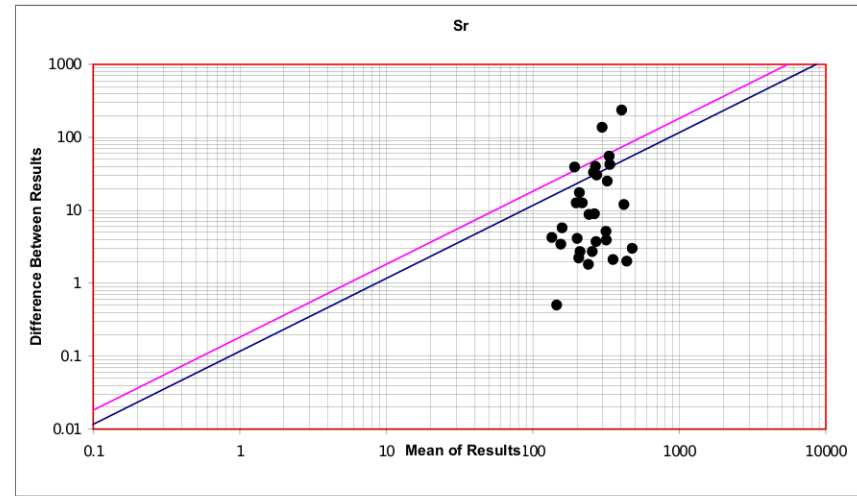
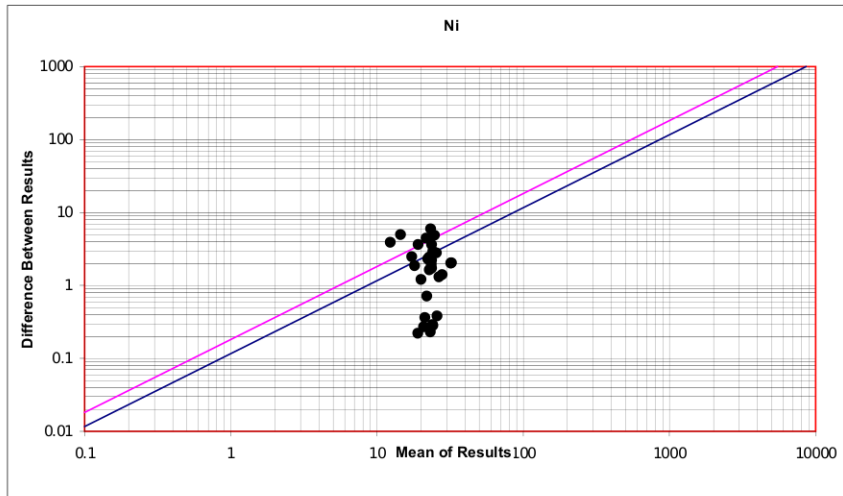
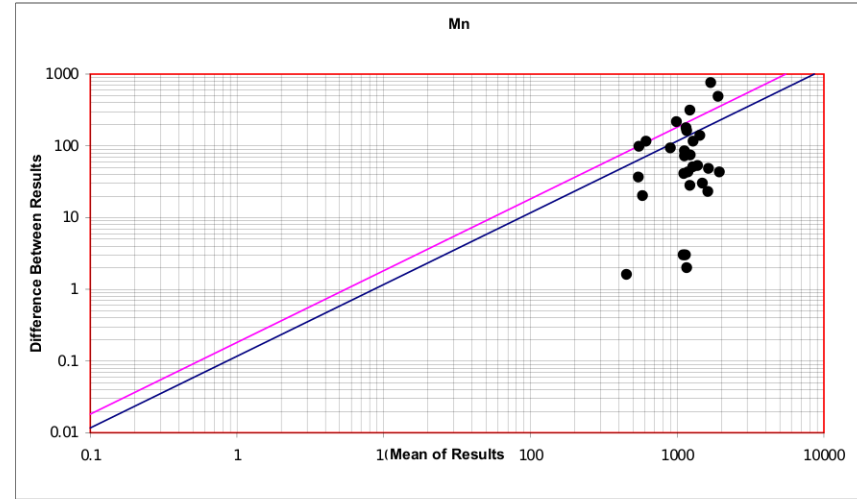
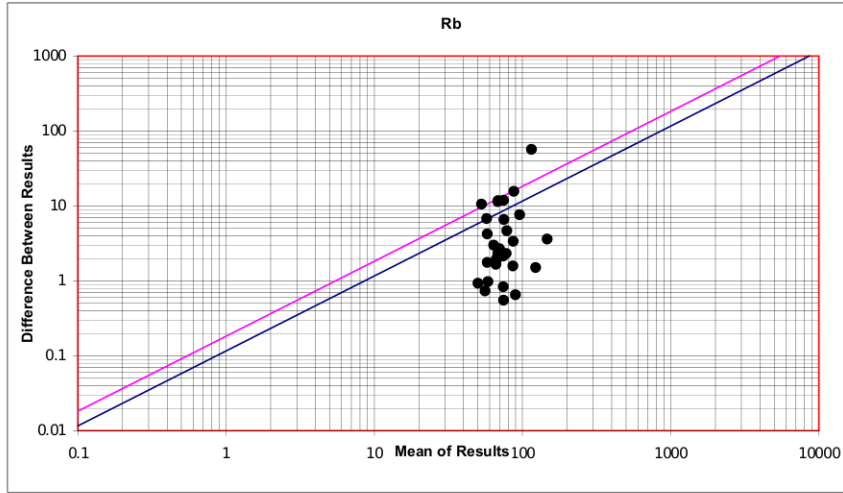
ادامه پیوست ۱: نتایج آنالیز شیمیایی نمونه های ورقه اشتهاارد

ردیف	شماره نمونه	x_c	y_c	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	S	Sb	Sc	Sr	Te	Th	Ti	Ti	U	V	W	Y	Zn	Zr
351	84Es 351	417680	3945756	1190	1.266	14820	13.86	17.14	1058	67.47	145.6	219.5	3.396	14.52	313.8	0.1504	13.45	4320.00	1	3.59	99	2.65	35.07	209	591.7
352	84Es 352	417910	3944309	1712	1.652	14400	25.1	19.63	1153	79.86	116.2	189.7	6.668	19.35	303.7	0.3637	23.9	9951.00	1	8.30	308	3.31	40.15	281	515.9
353	84Es 353	420047	3944212	1672	1.874	13870	17.56	21.5	1411	80.85	162.3	595.6	5.074	18.62	243.7	0.1887	17.27	6035.00	1	4.83	150	3.77	39.13	333	590.8
354	84Es 354	419883	3944368	1730	2.029	13690	19.47	15.43	1519	89.29	177.7	329.1	5.684	18.7	257.6	0.2704	18.49	7367.00	1	6.13	179	4.86	42.87	461	634.3
355	84Es 355	420625	3943361	1821	0.8728	14190	18.34	21.14	1162	82.87	128.6	527.4	5.789	22.86	305.1	0.2107	17.68	5807.00	1	4.74	182	3.47	37.26	321	524
356	84Es 356	419827	3942100	1788	0.4248	12820	25.07	23.38	835.5	72.72	81.79	150.6	5.361	30.79	428.5	0.3633	24.52	7884.00	1	6.36	351	2.52	37.93	254	465
357	84Es 357	419877	3941902	2292	1.011	11870	26.55	20.4	863.2	220.1	148.8	2057	18.64	27.67	282.3	0.327	26.47	7523.00	1	6.26	364	5.27	35.65	569	522.7

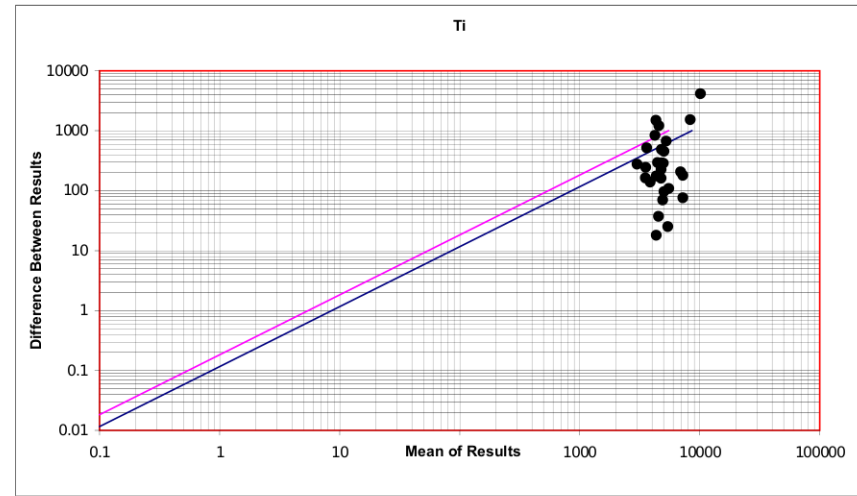
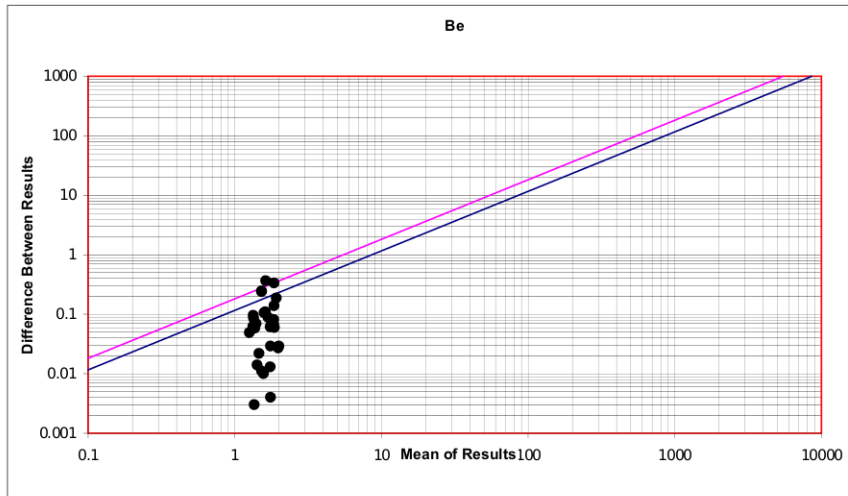
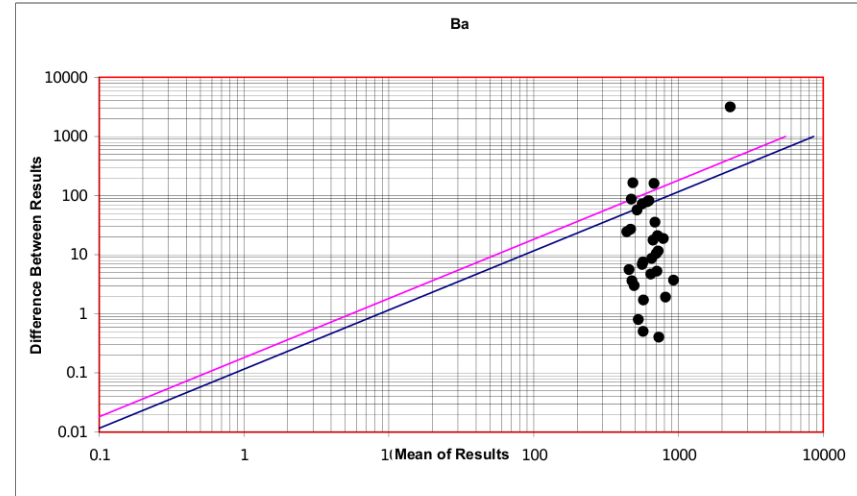
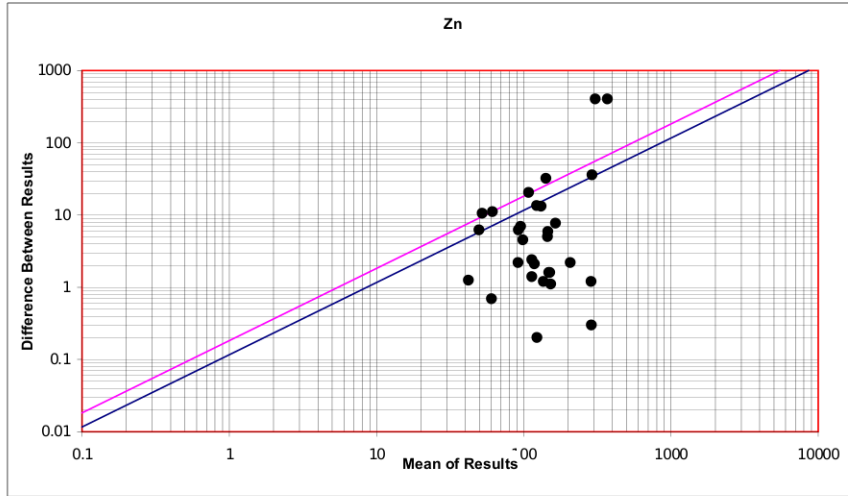
پیوست ۲: نتایج خط‌گیری برای عناصر مختلف



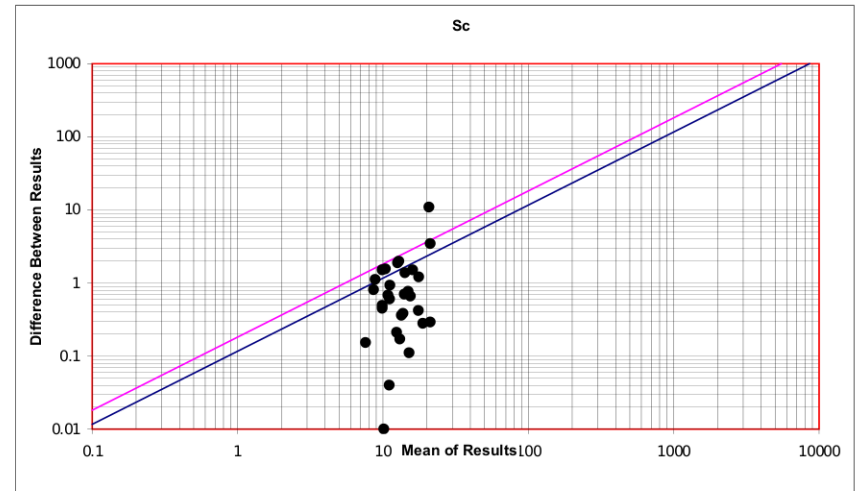
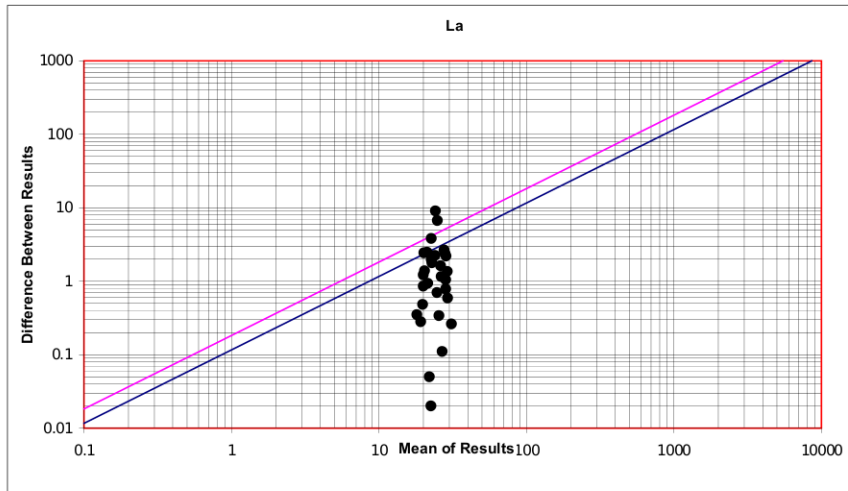
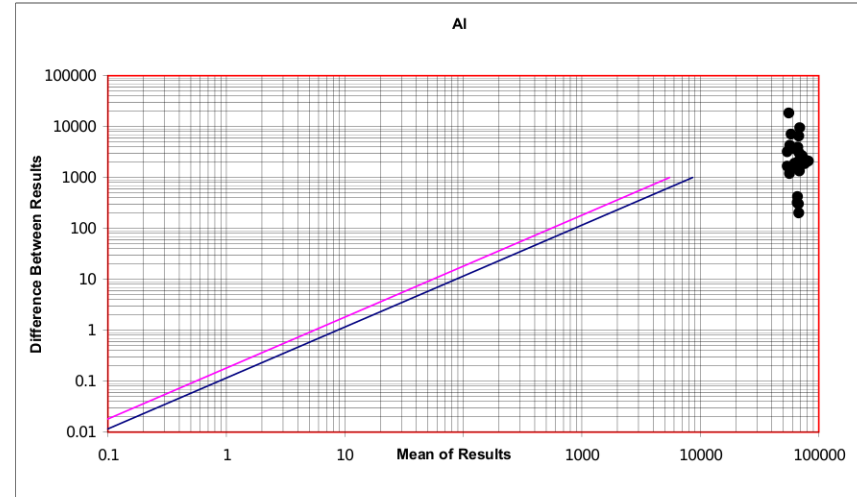
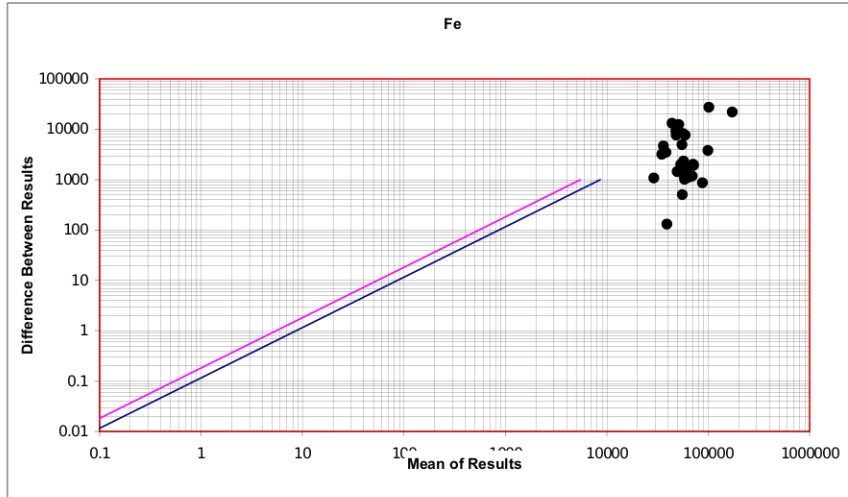
ادامه پیوست ۲ : نتایج خط‌گیری برای عناصر مختلف



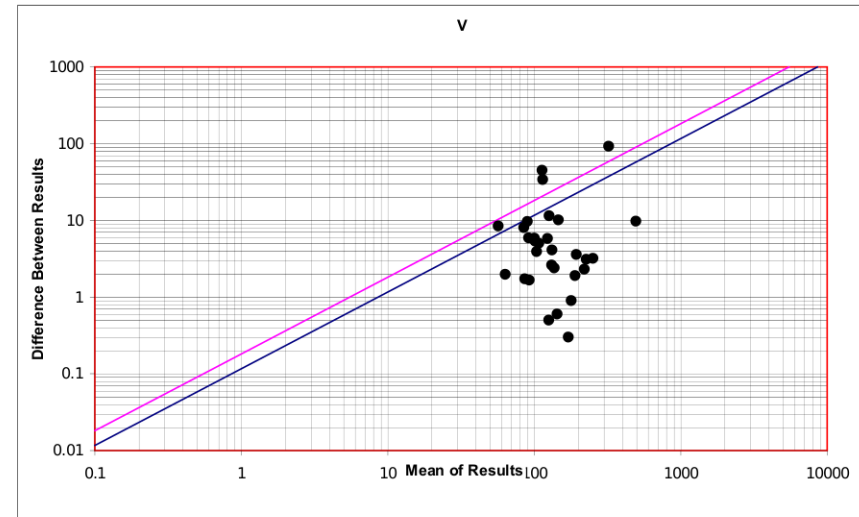
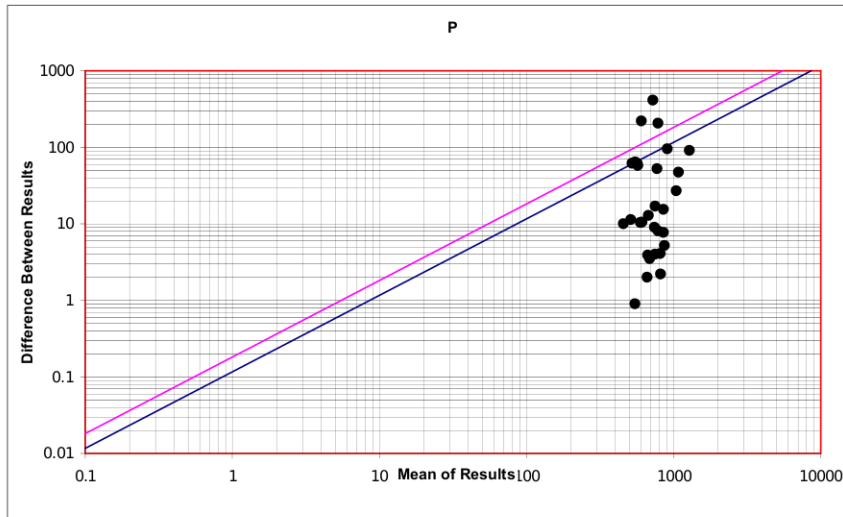
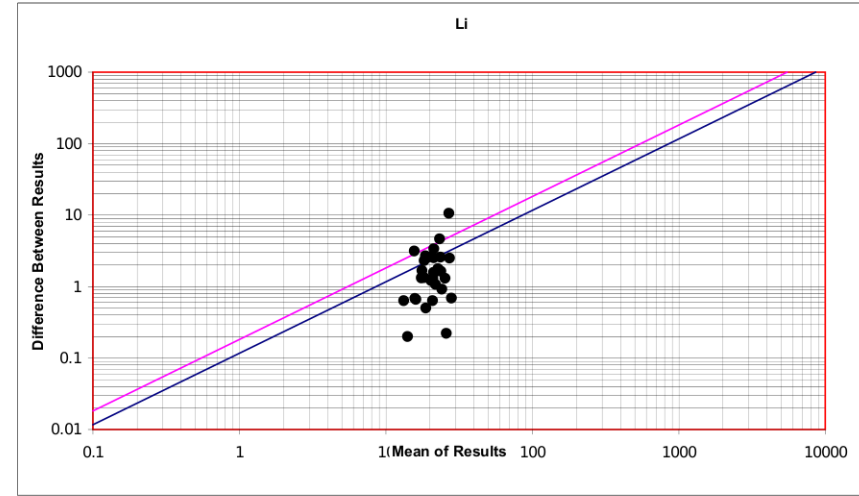
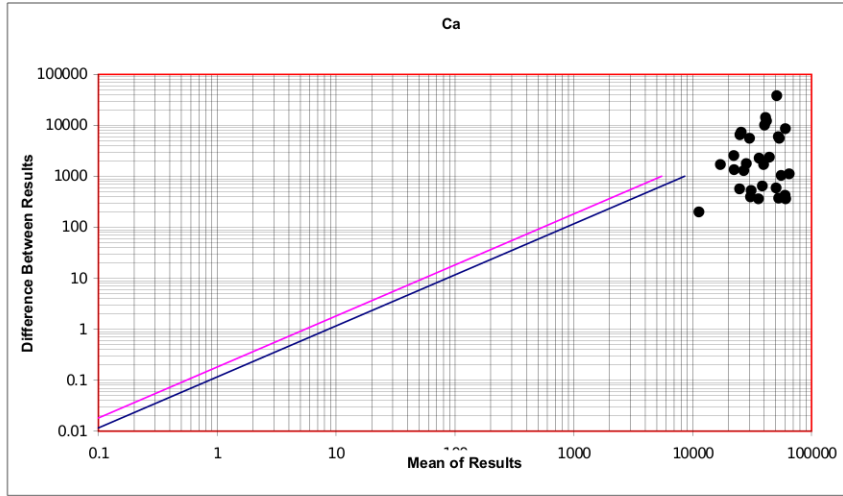
ادامه پیوست ۲ : نتایج خط‌گیری برای عناصر مختلف



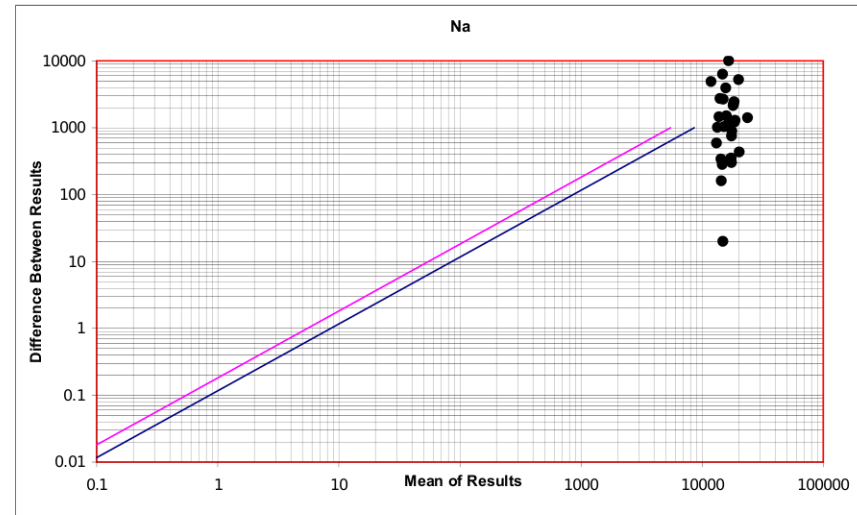
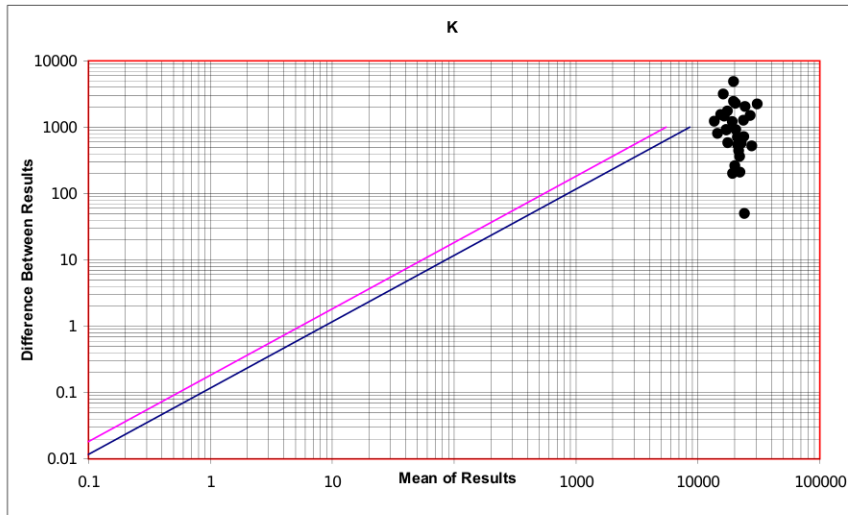
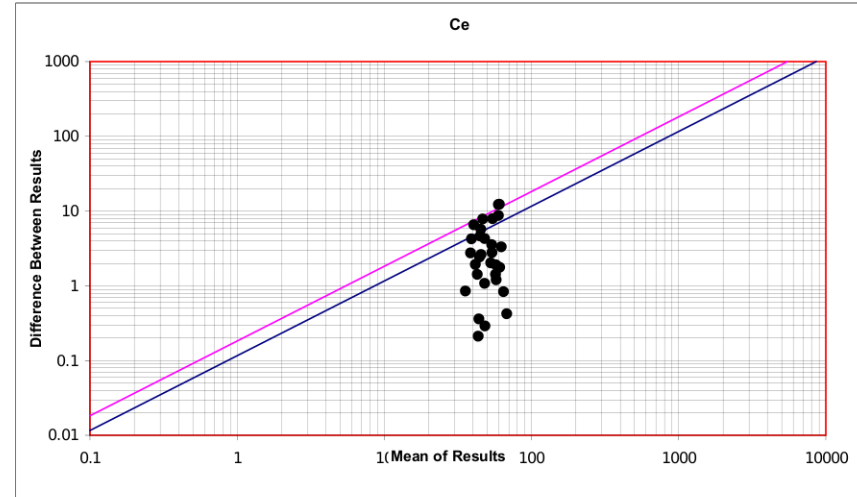
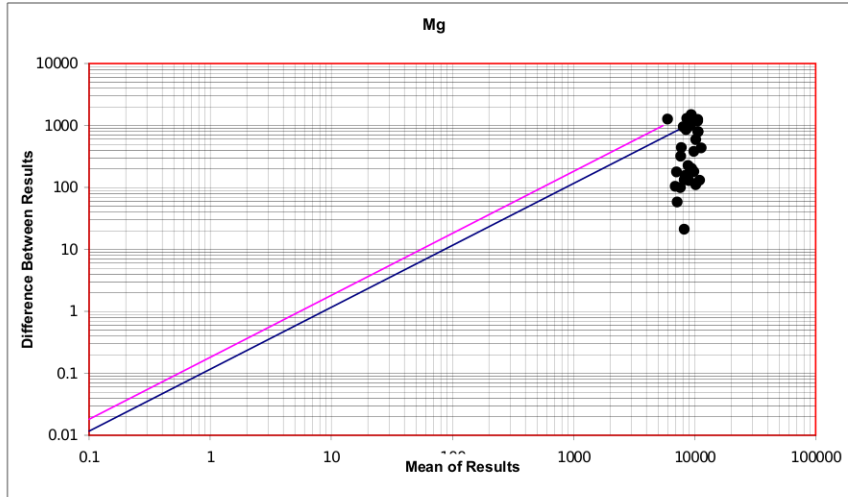
ادامه پیوست ۲ : نتایج خط‌گیری برای عناصر مختلف



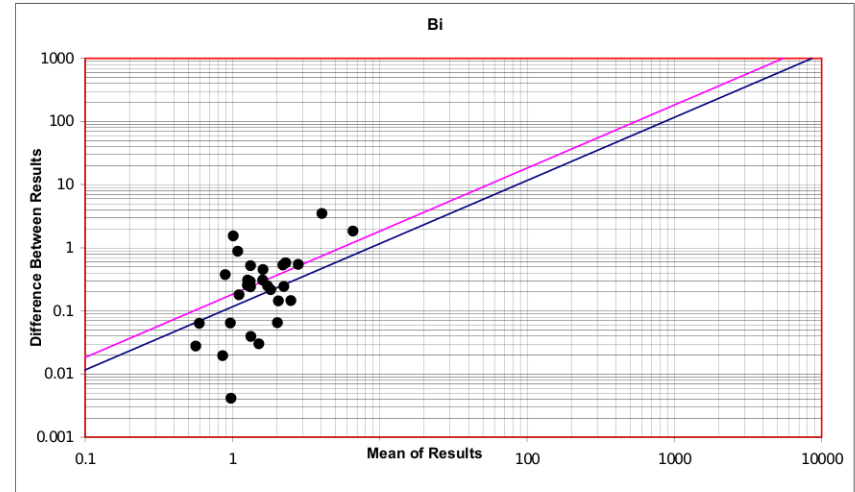
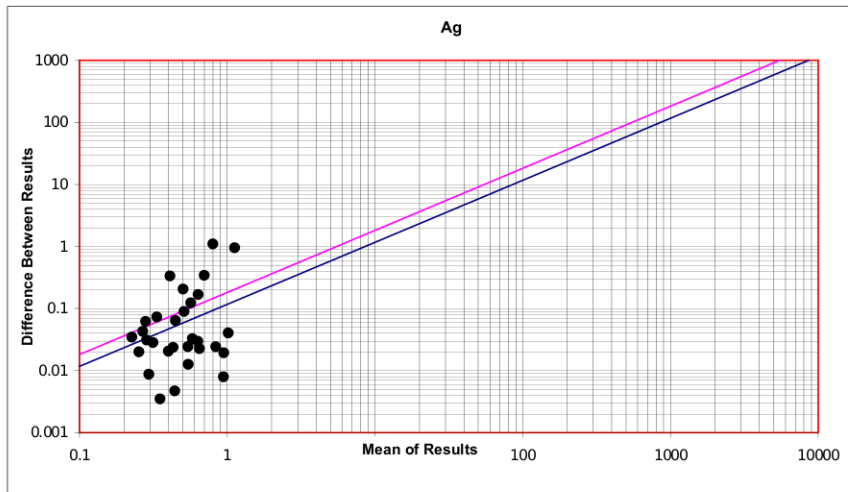
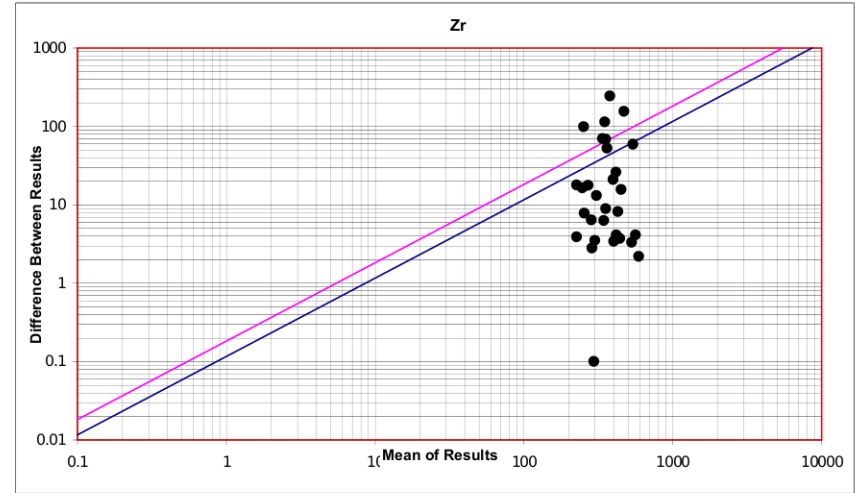
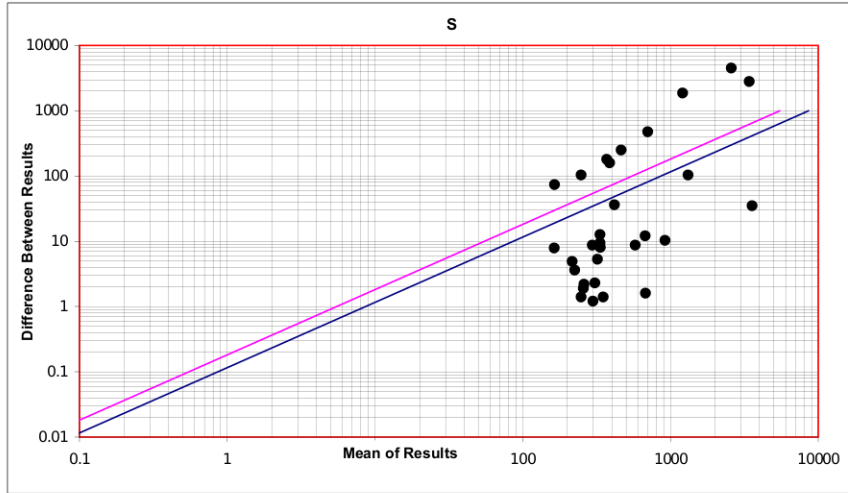
ادامه پیوست ۲ : نتایج خطگیری برای عناصر مختلف



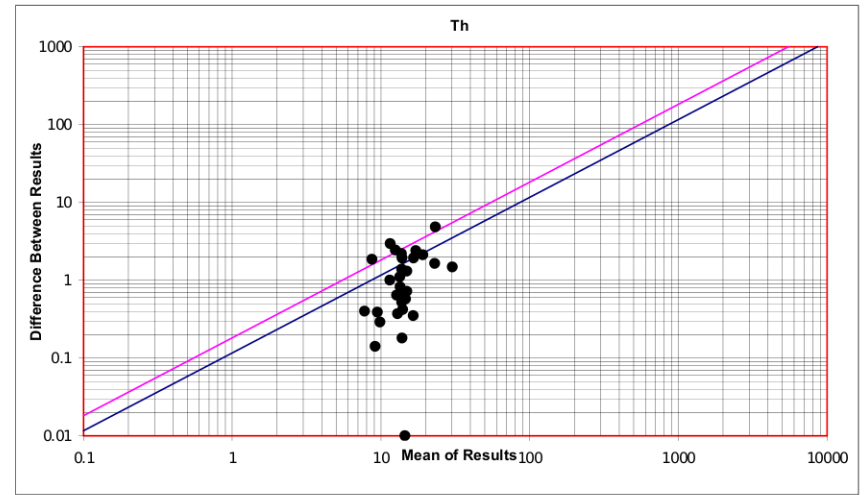
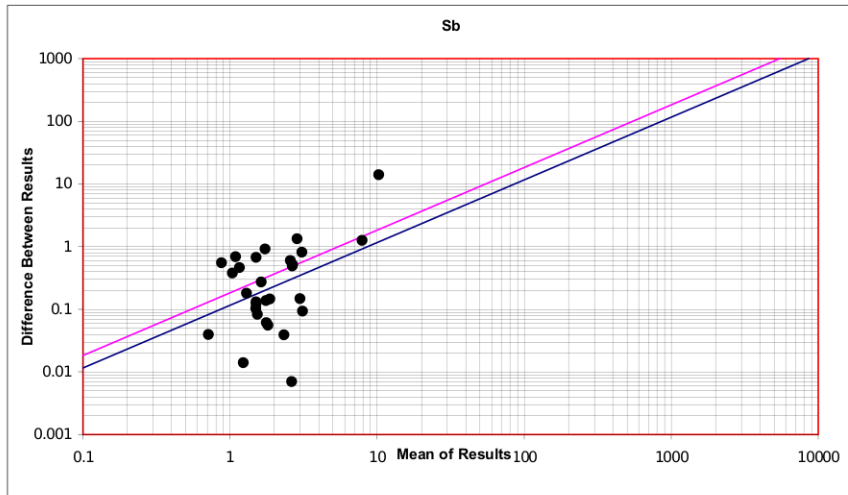
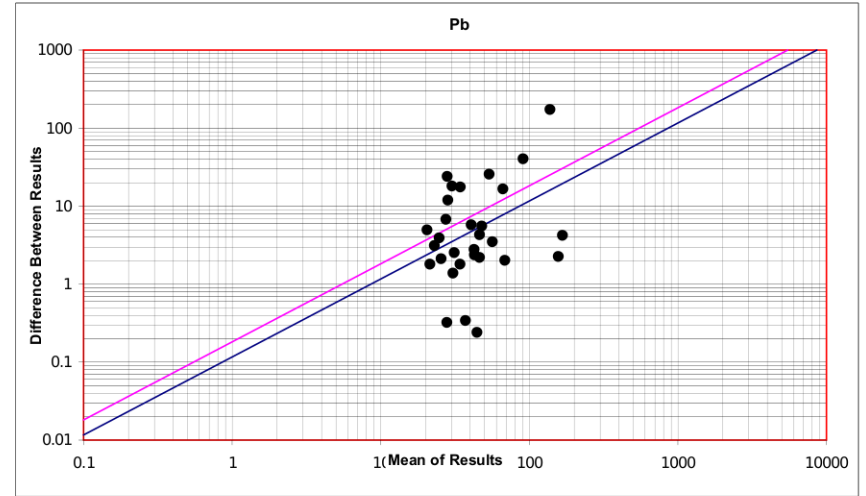
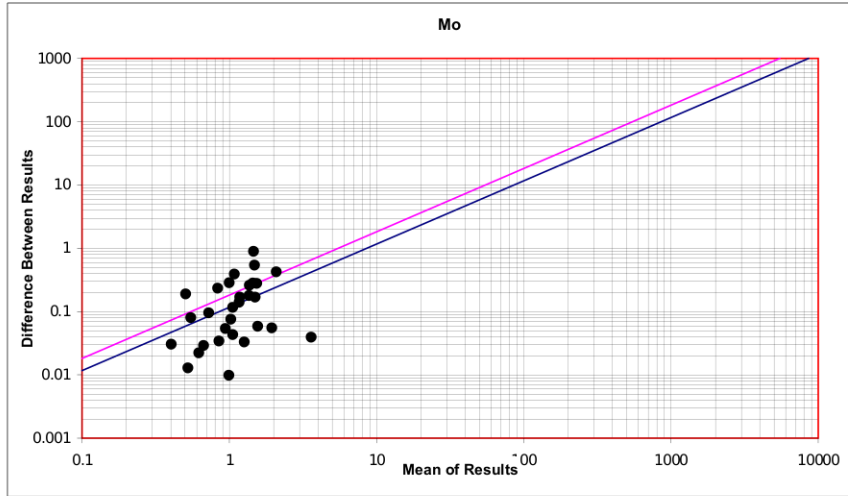
ادامه پیوست ۲ : نتایج خطگیری برای عناصر مختلف



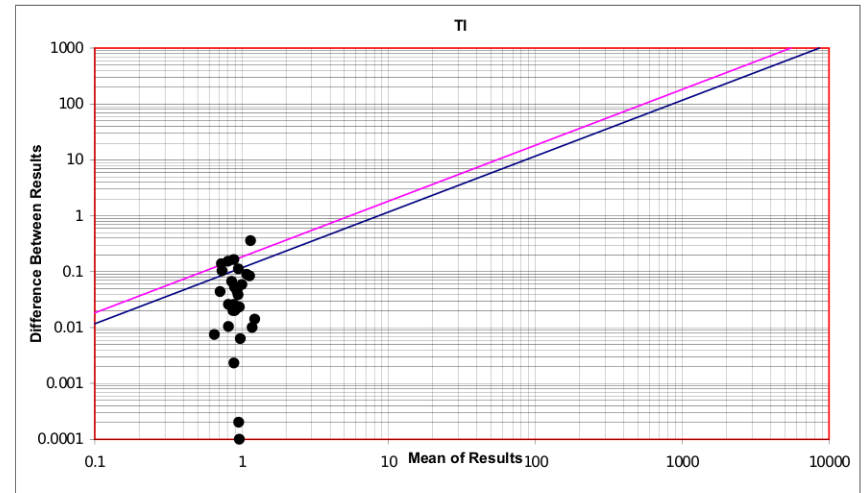
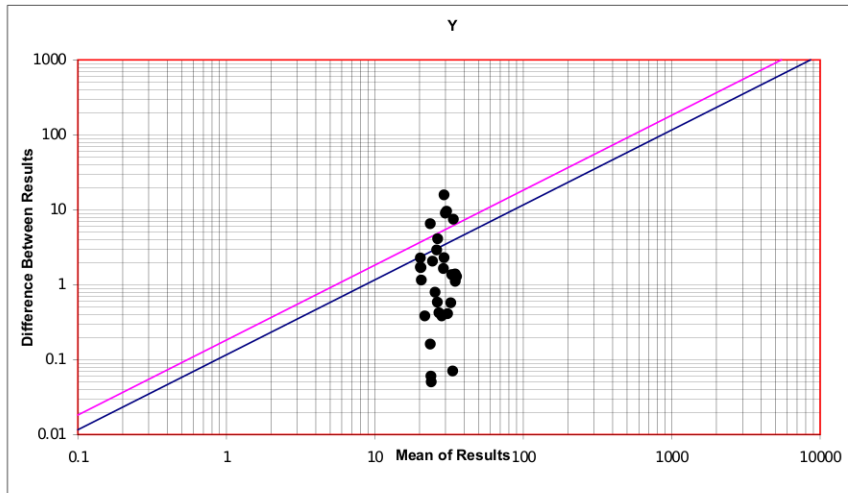
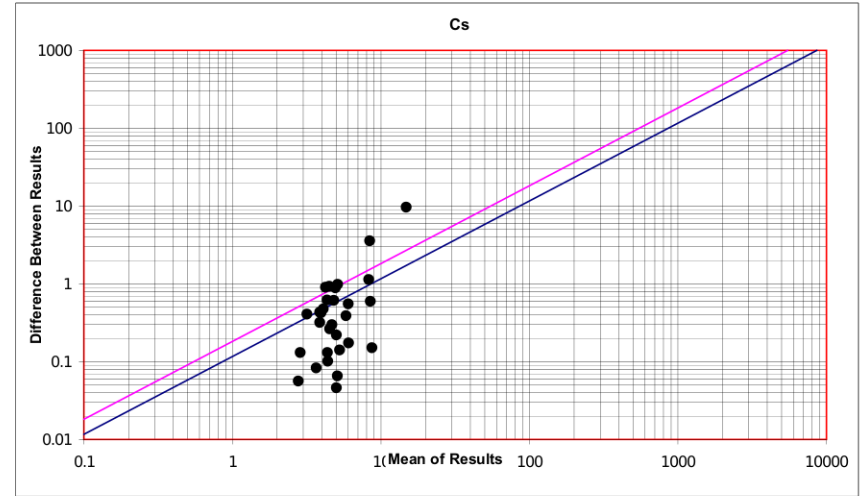
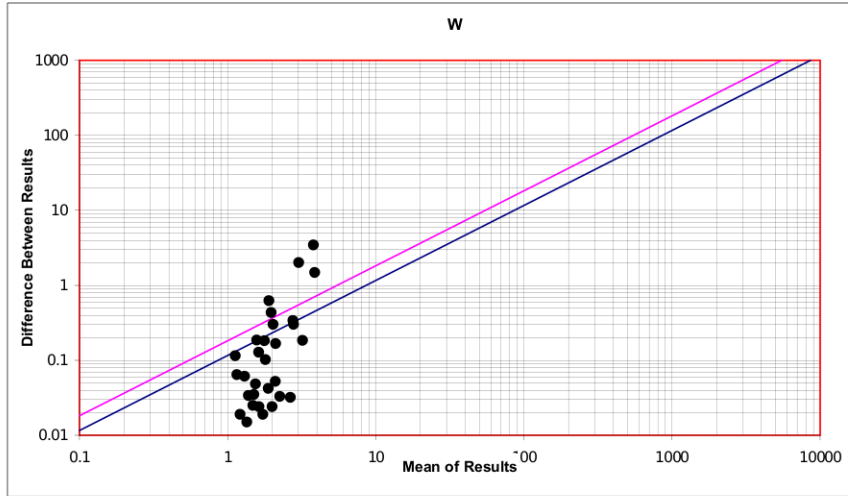
ادامه پیوست ۲ : نتایج خطگیری برای عناصر مختلف



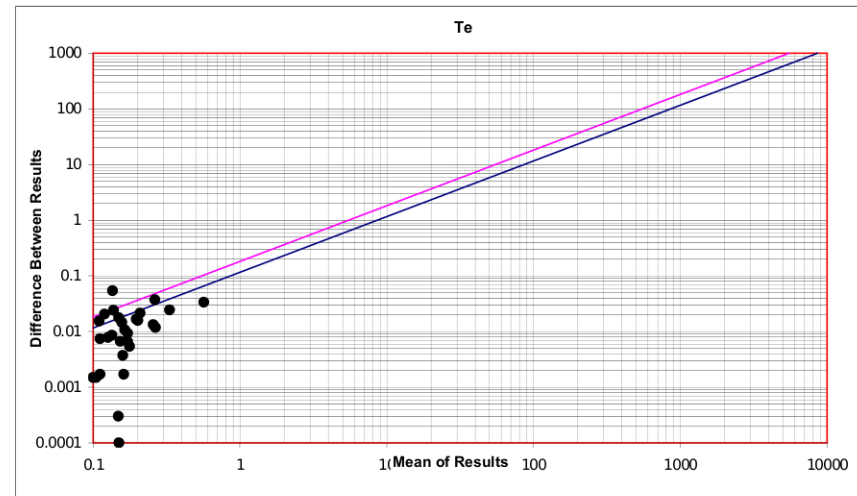
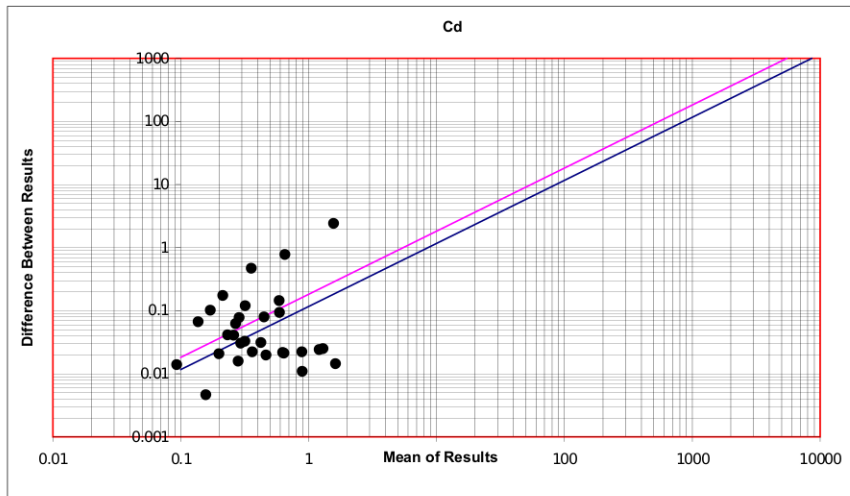
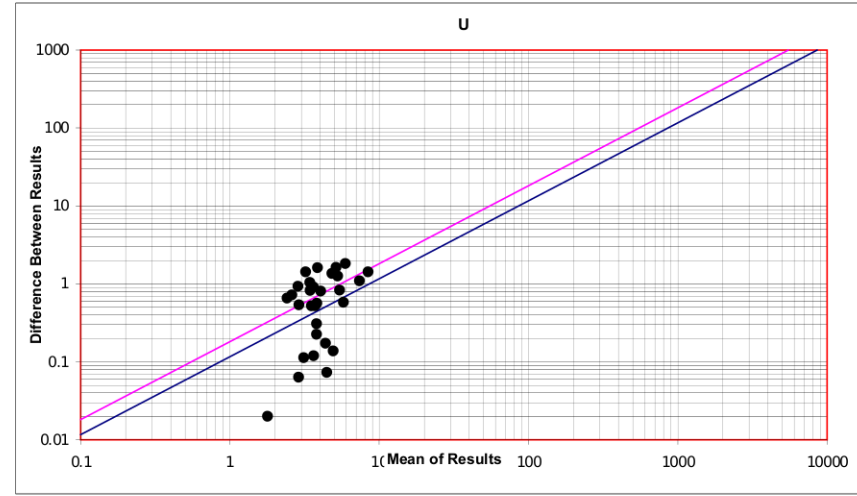
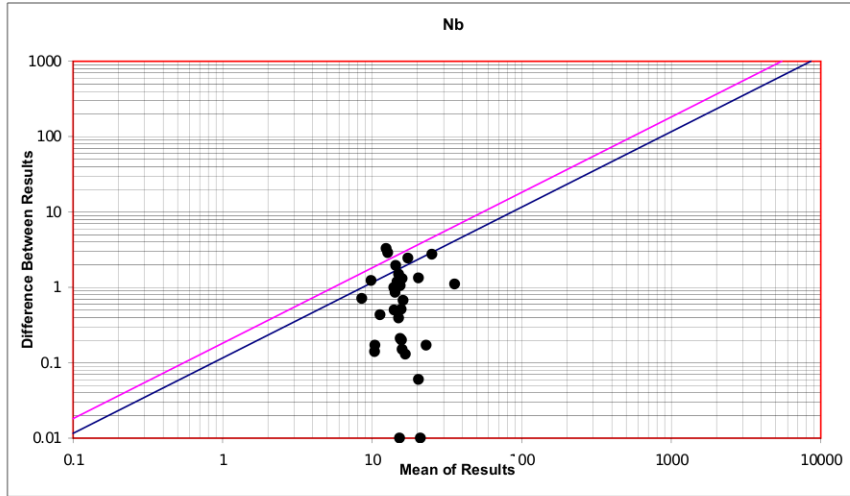
ادامه پیوست ۲ : نتایج خط‌گیری برای عناصر مختلف



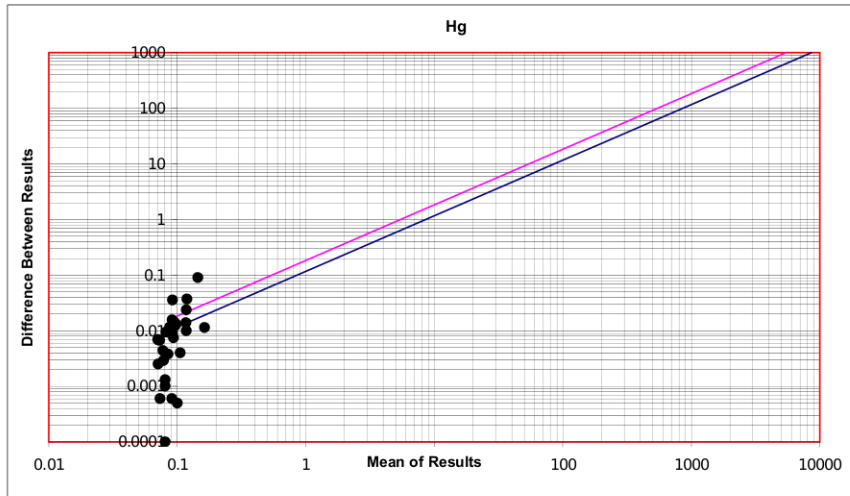
ادامه پیوست ۲ : نتایج خطگیری برای عناصر مختلف



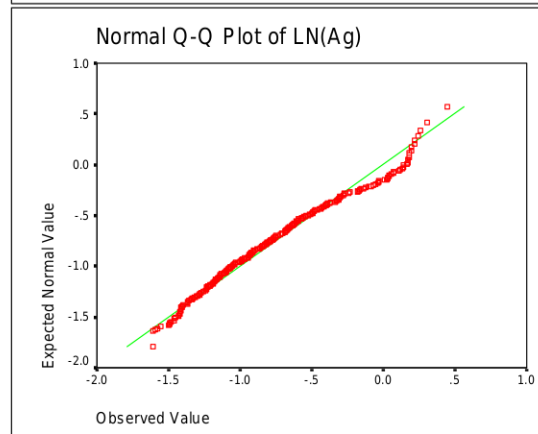
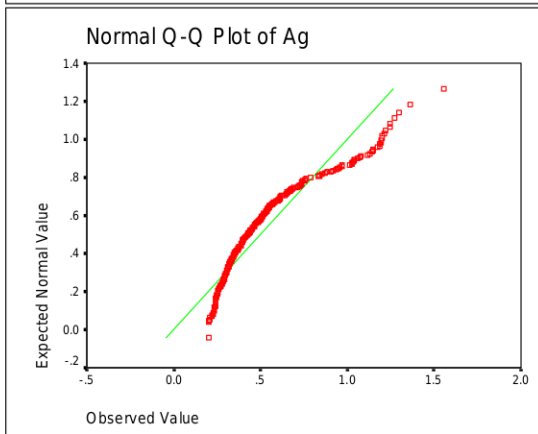
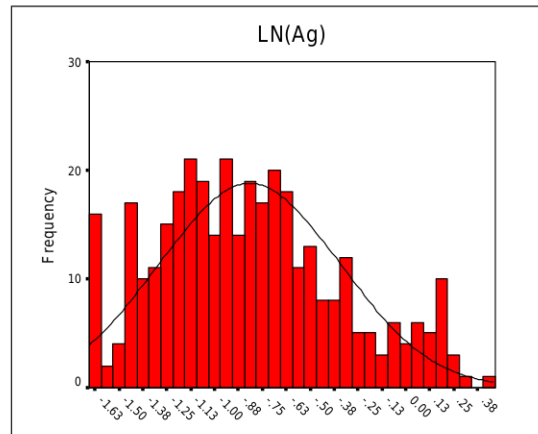
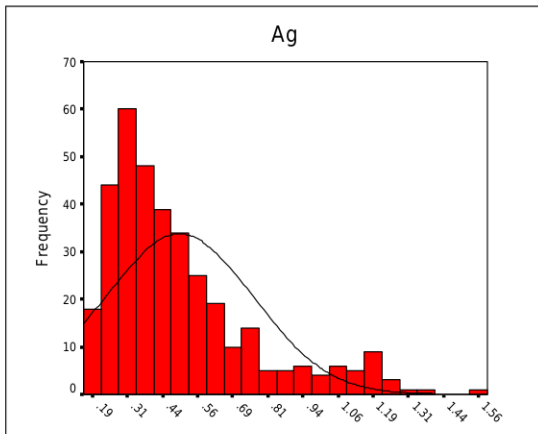
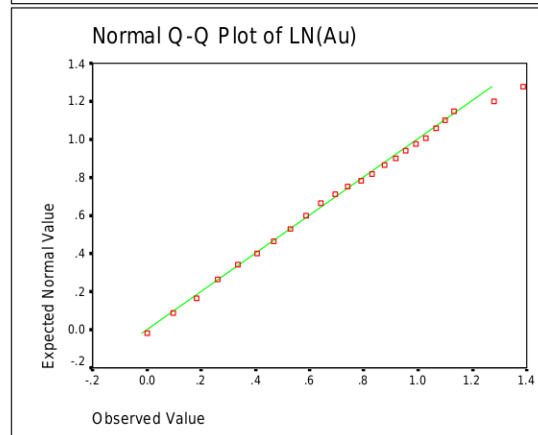
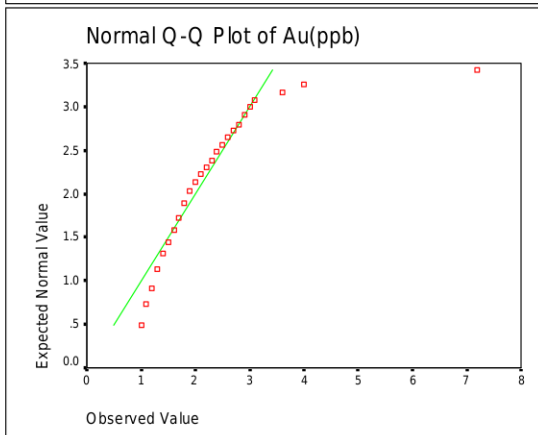
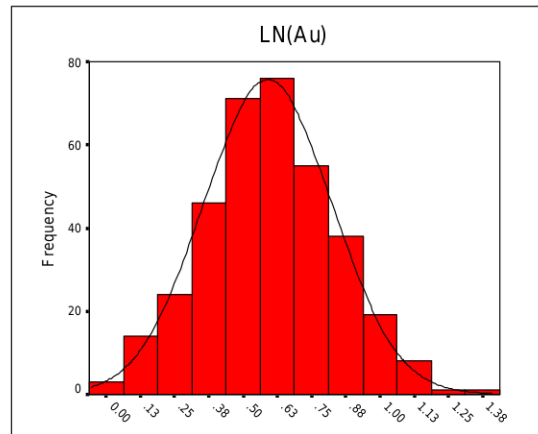
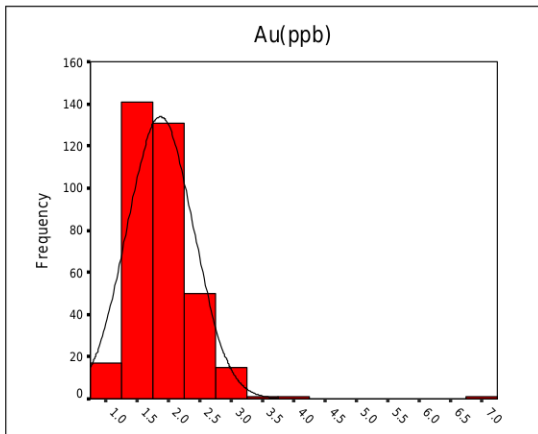
ادامه پیوست ۲ : نتایج خطگیری برای عناصر مختلف



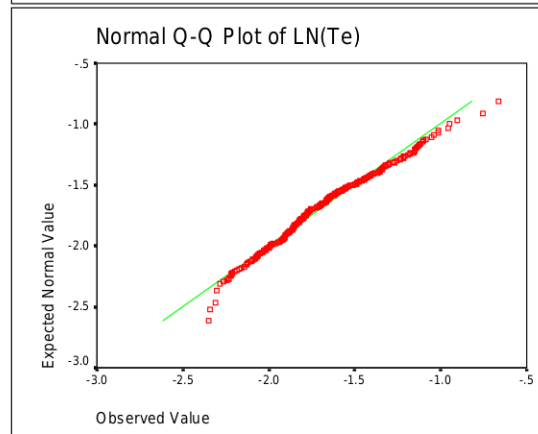
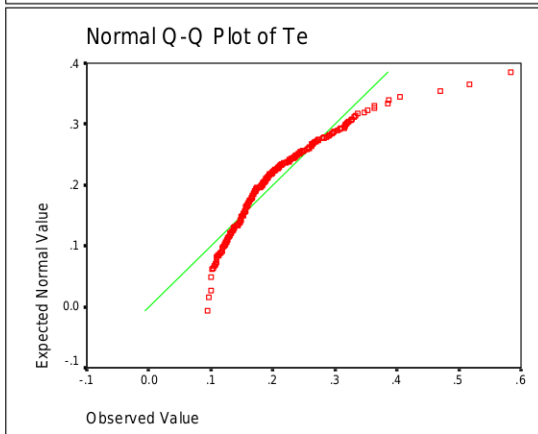
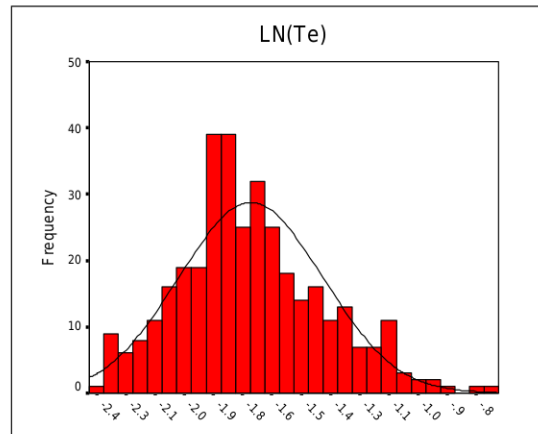
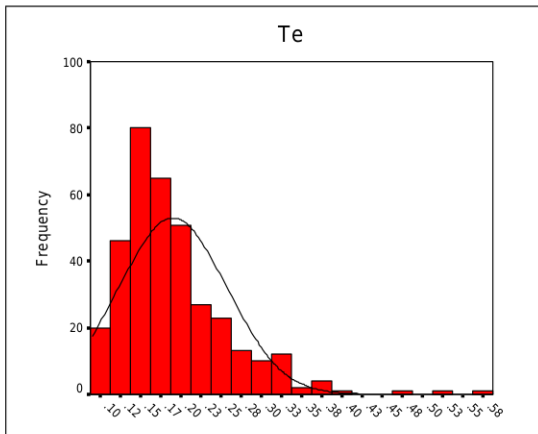
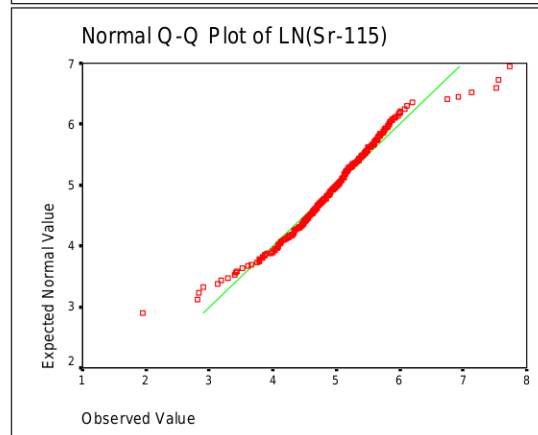
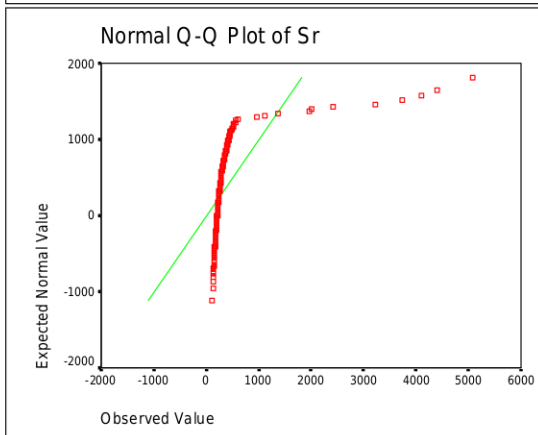
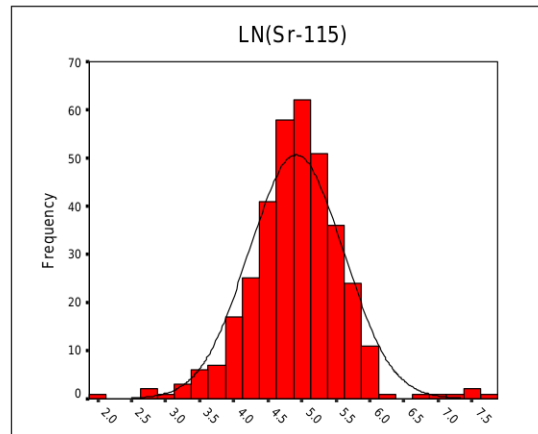
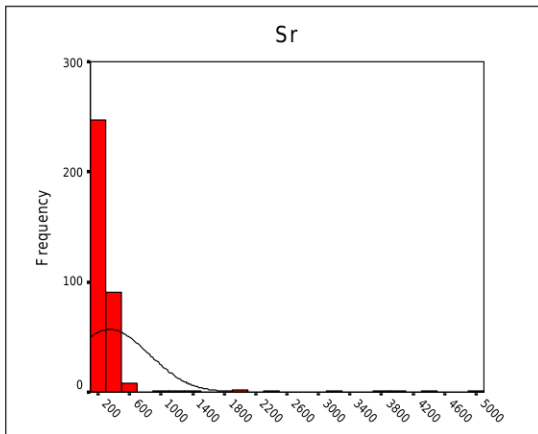
ادامه پیوست ۲ : نتایج خطگیری برای عناصر مختلف



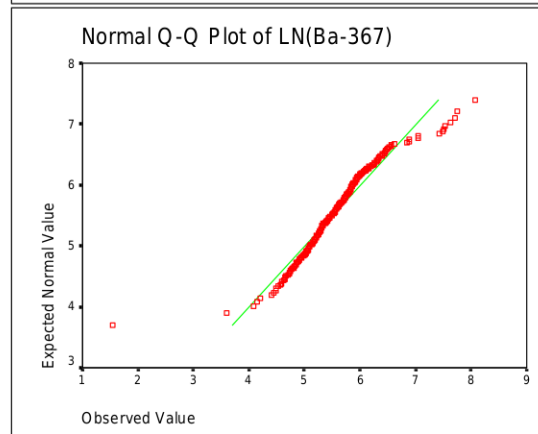
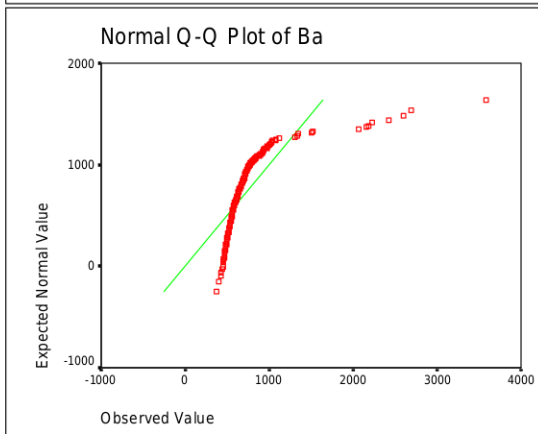
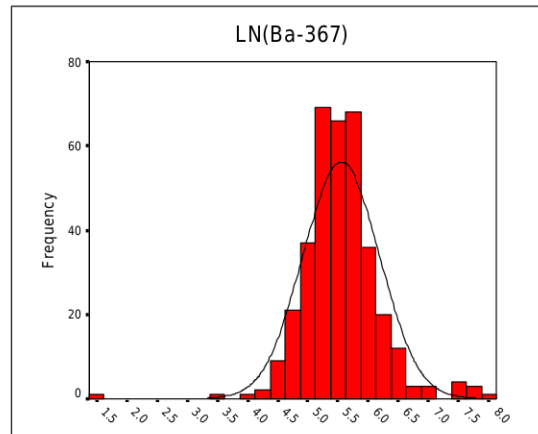
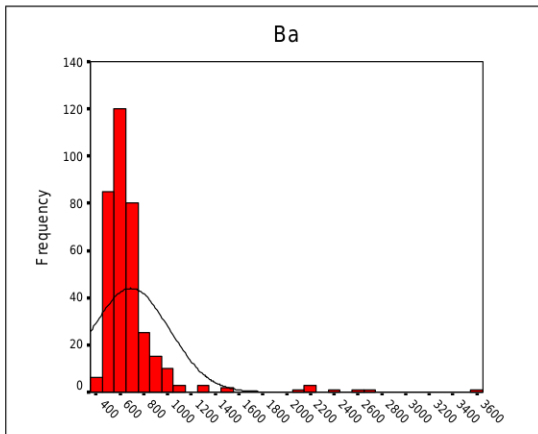
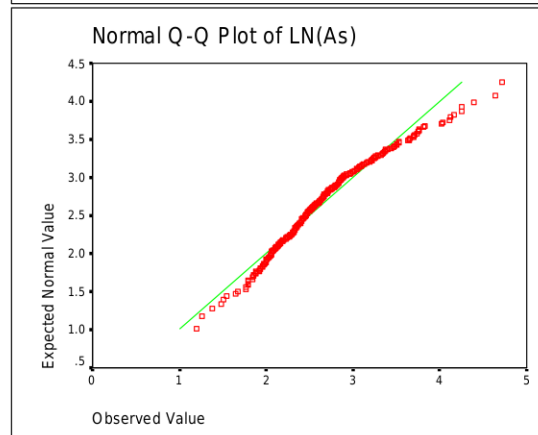
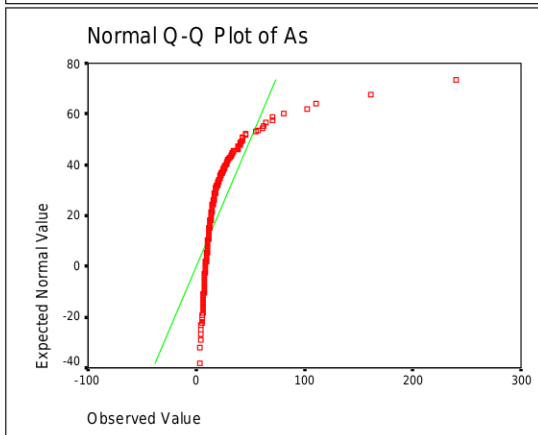
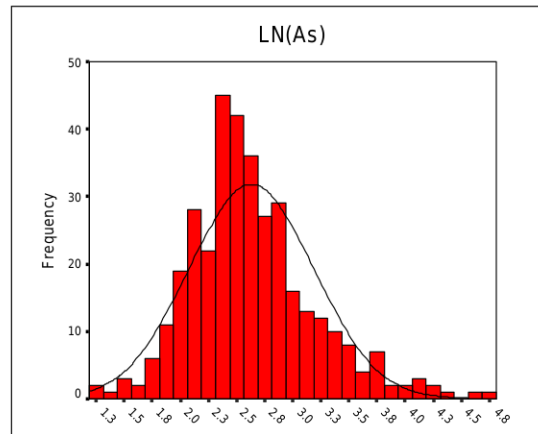
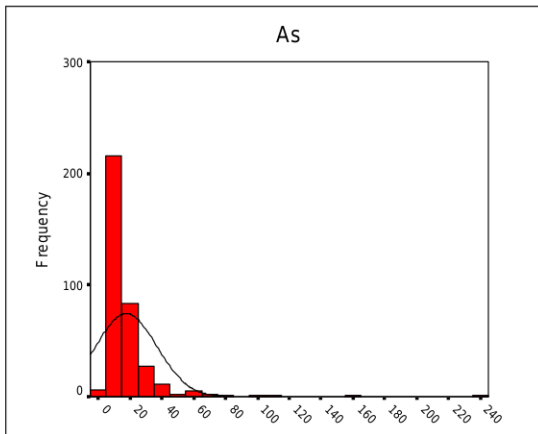
پیوست ۳: هیستوگرام و نمودار Q-Q برای عناصر مختلف در ورقه اشتهازد

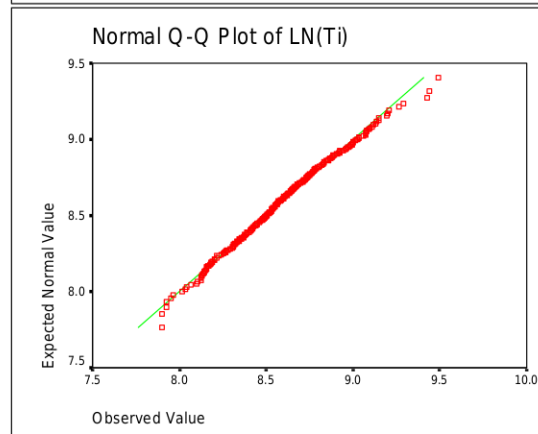
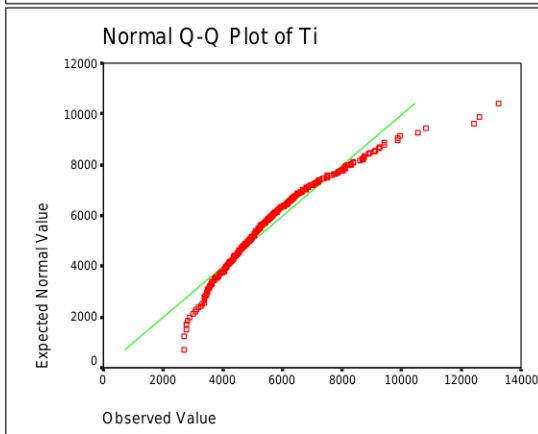
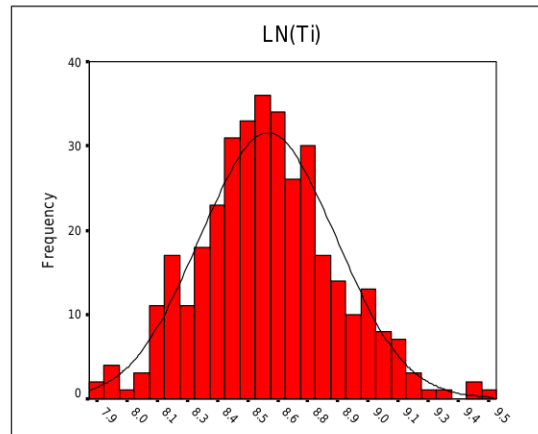
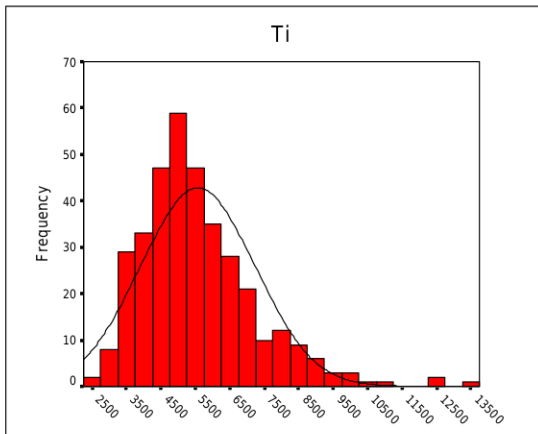
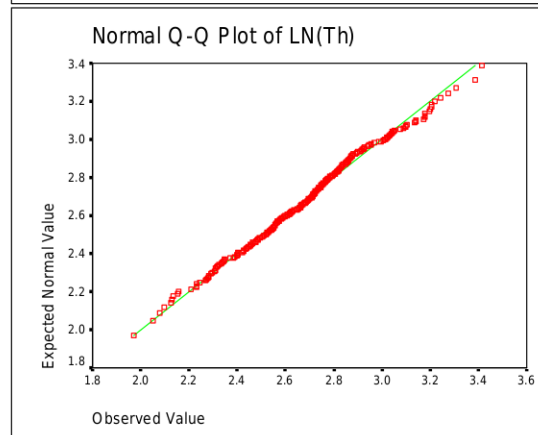
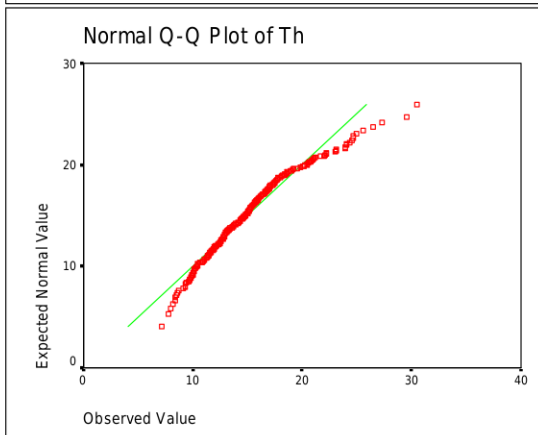
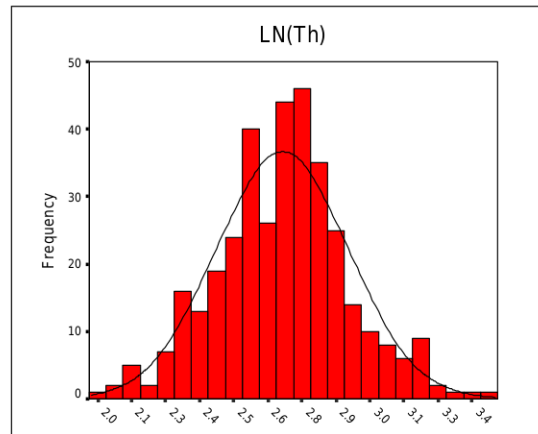
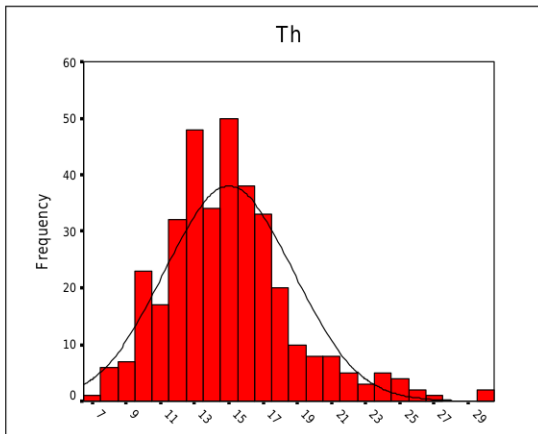


ادامه پیوست ۳: هیستوگرام و نمودار Q-Q برای عناصر مختلف در ورقه اشتها

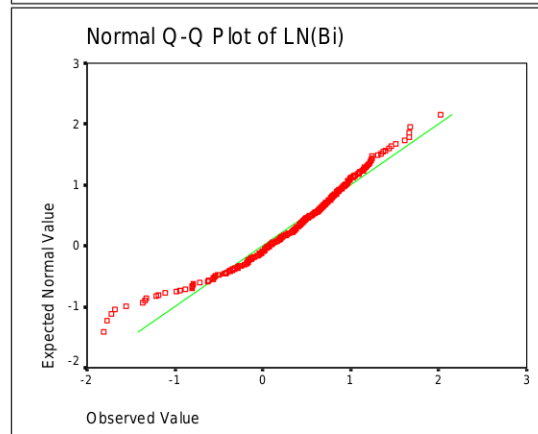
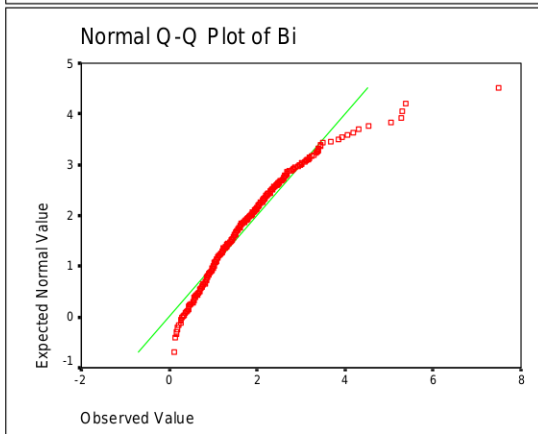
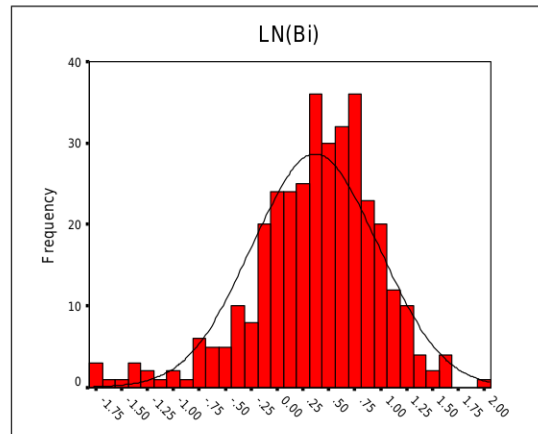
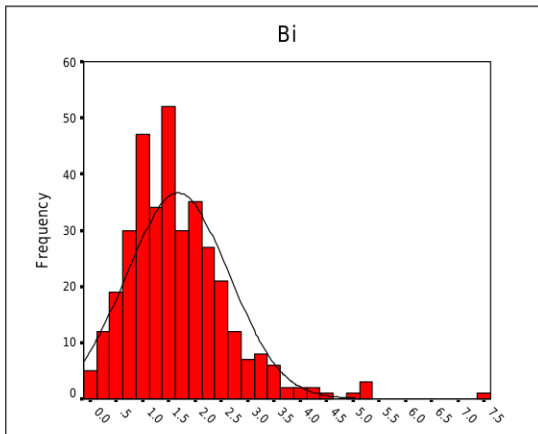
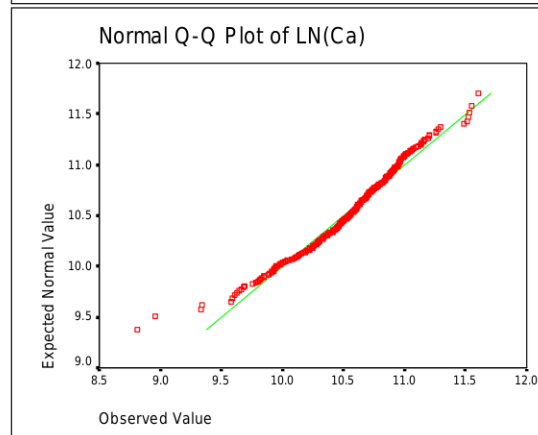
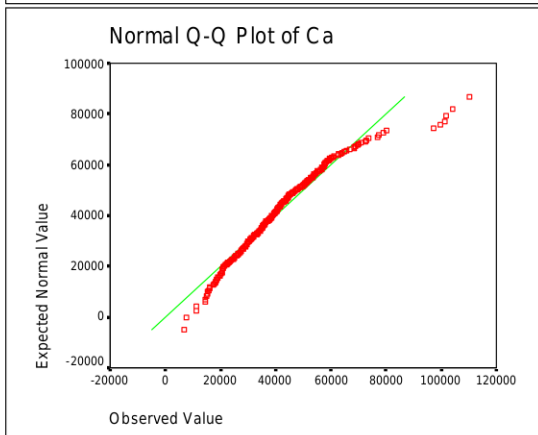
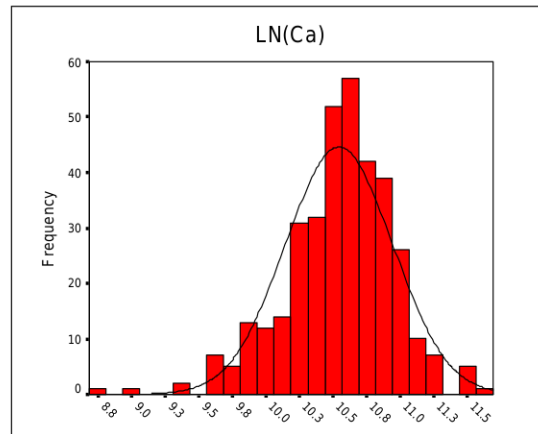
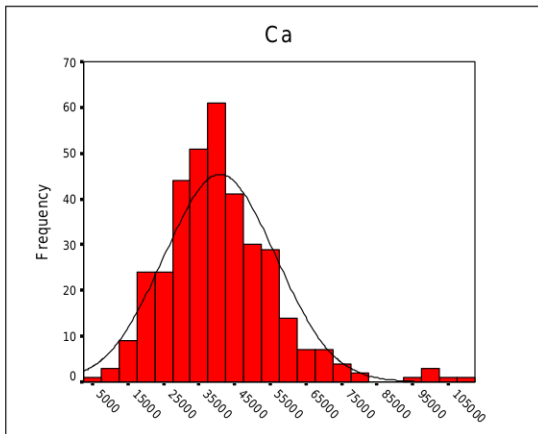


ادامه پیوست ۳: هیستوگرام و نمودار Q-Q برای عناصر مختلف در ورقه اشتها

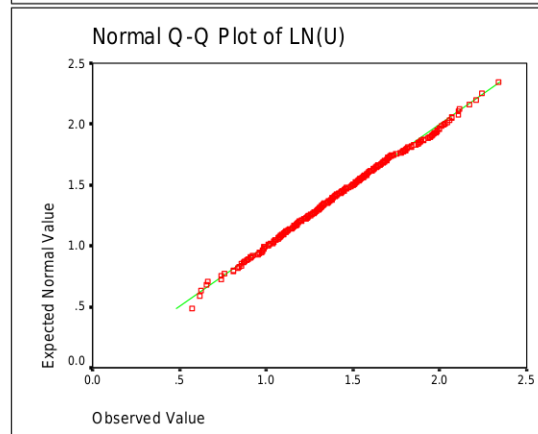
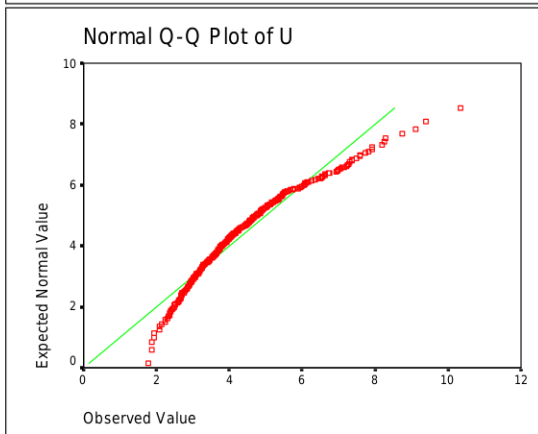
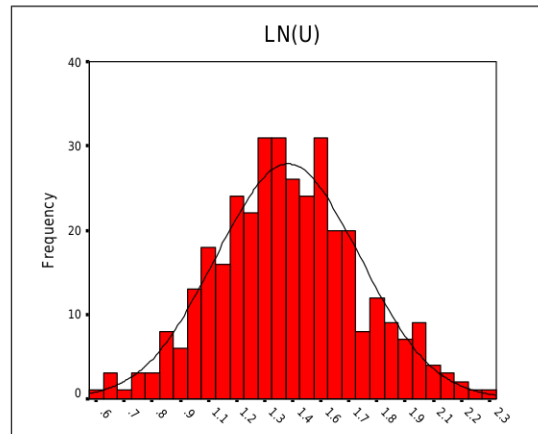
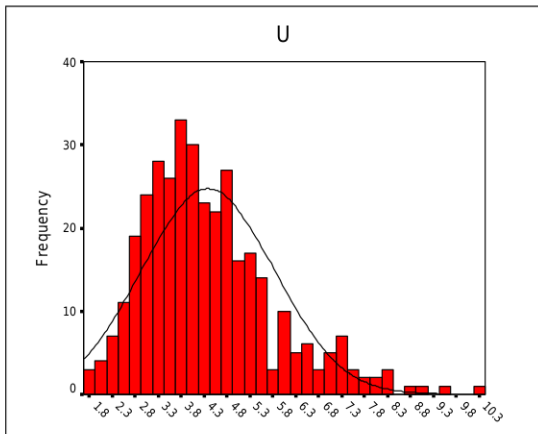
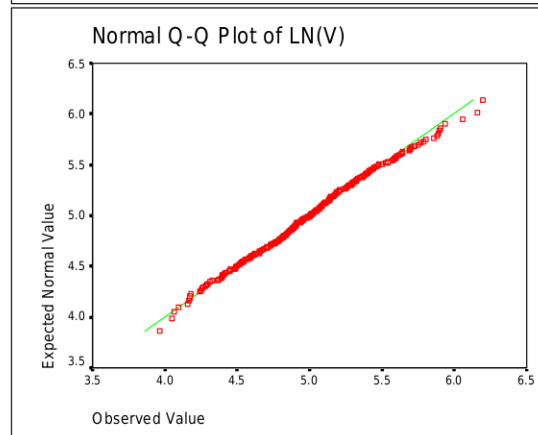
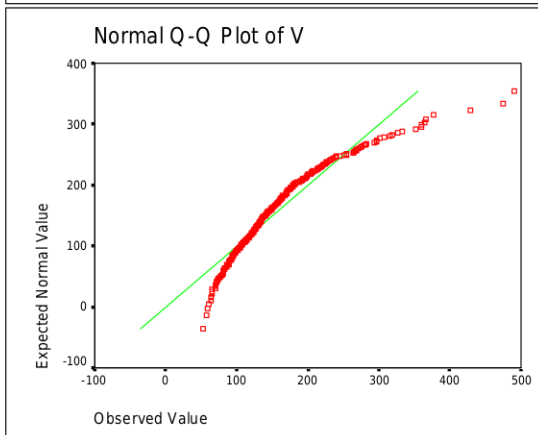
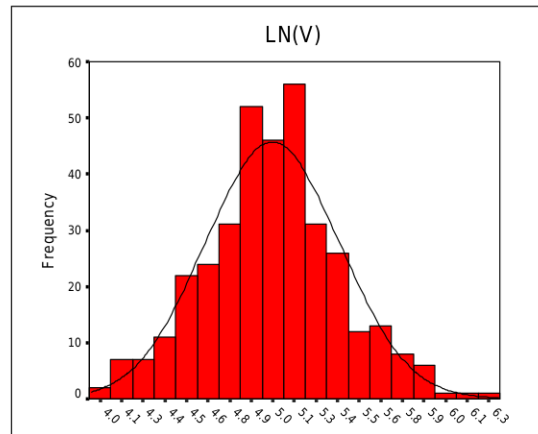
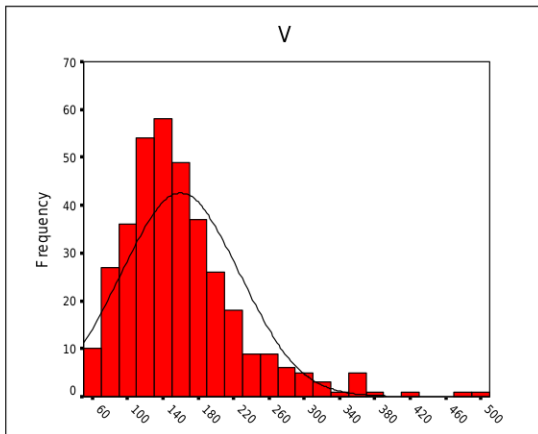


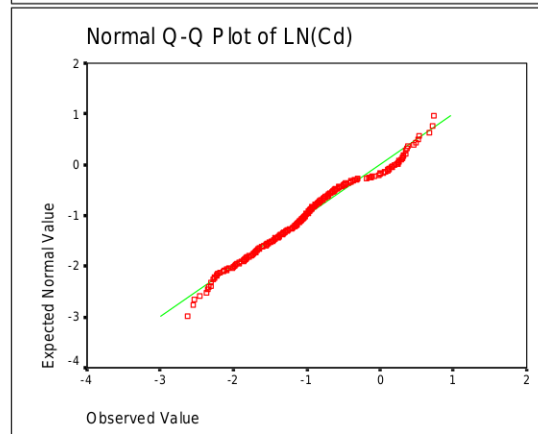
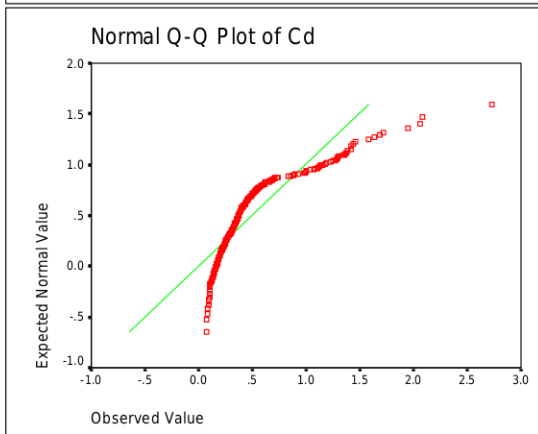
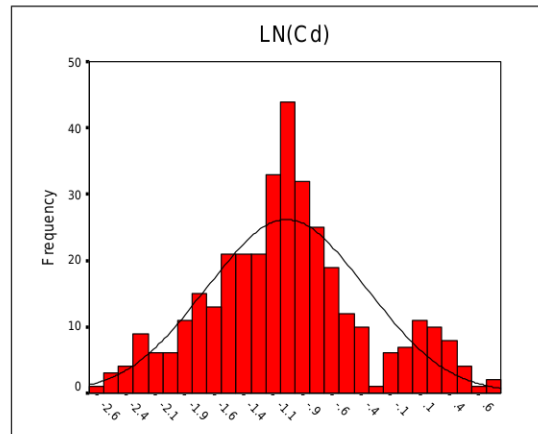
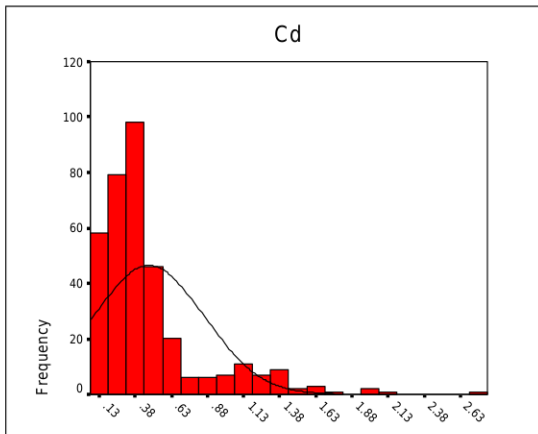
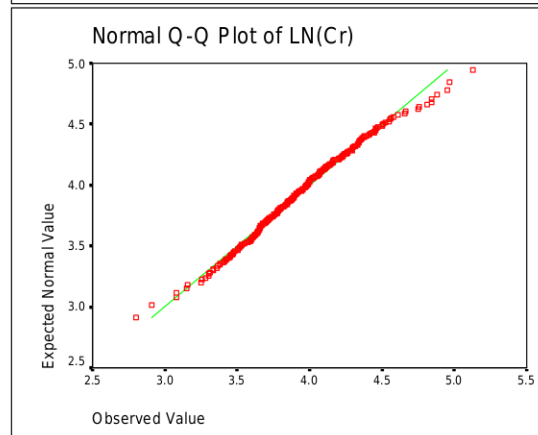
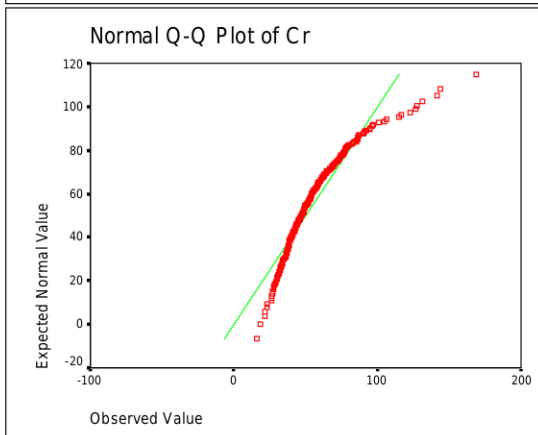
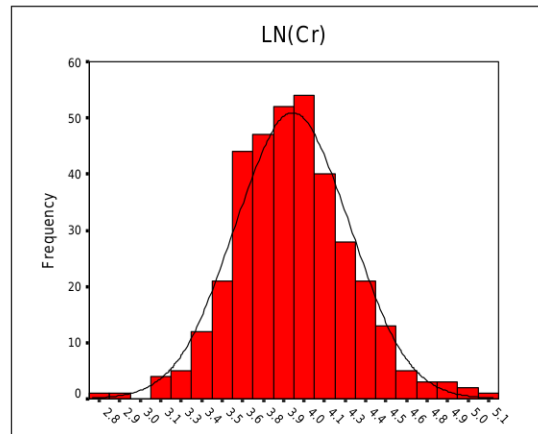
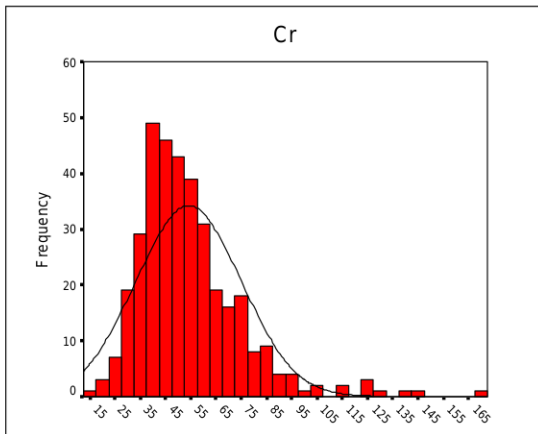


ادامه پیوست ۳: هیستوگرام و نمودار Q-Q برای عناصر مختلف در ورقه اشتها

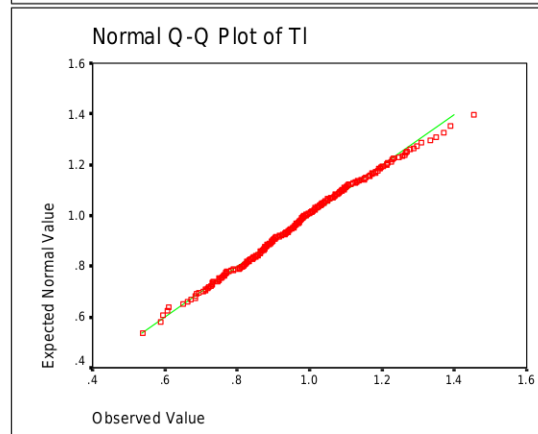
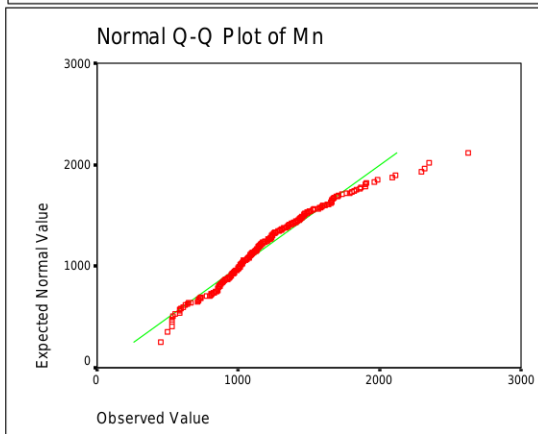
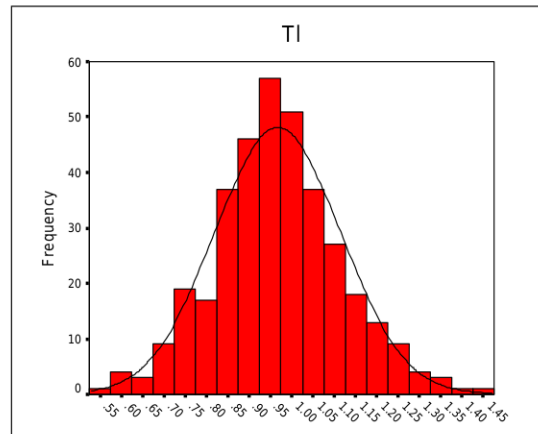
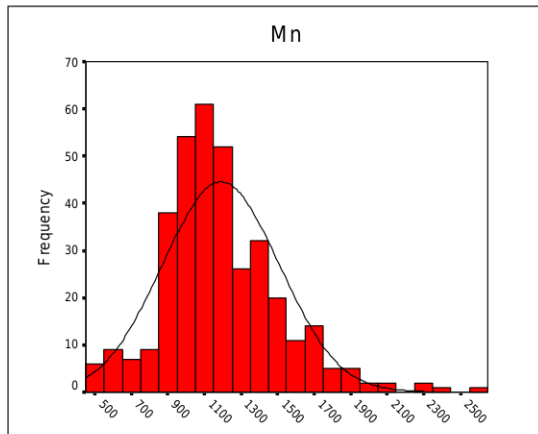
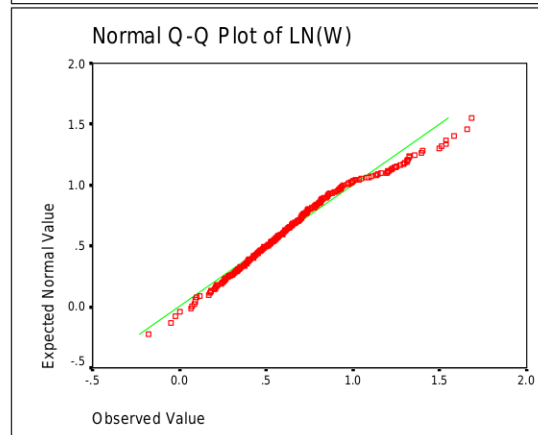
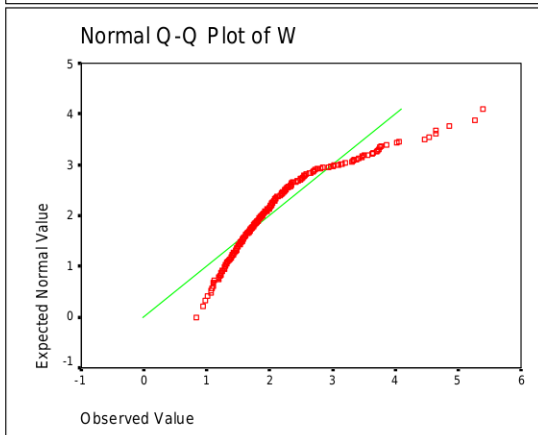
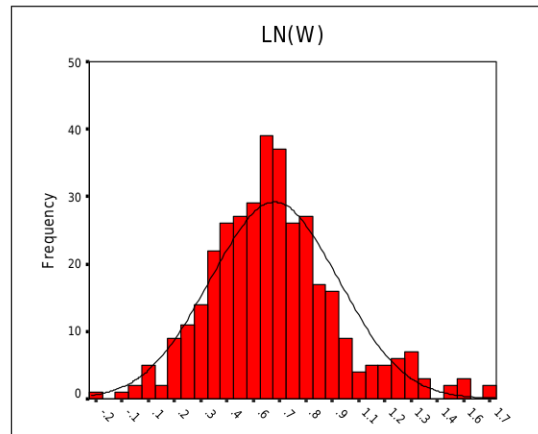
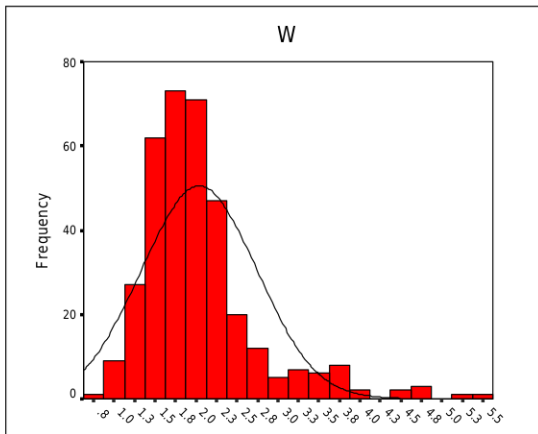


ادامه پیوست ۳: هیستوگرام و نمودار Q-Q برای عناصر مختلف در ورقه اشتها

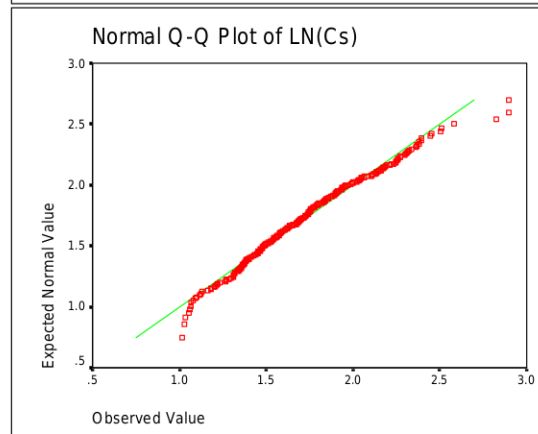
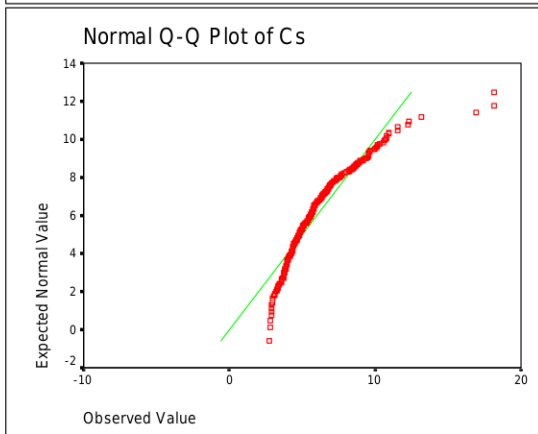
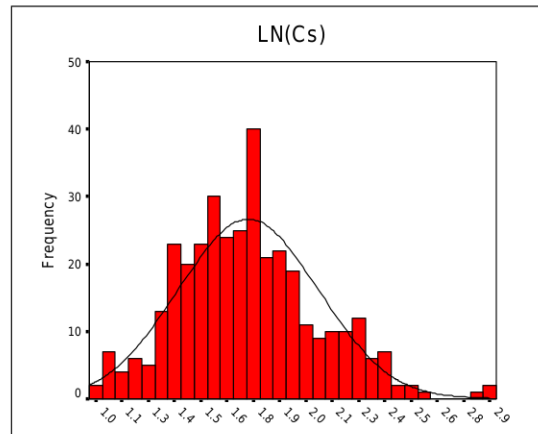
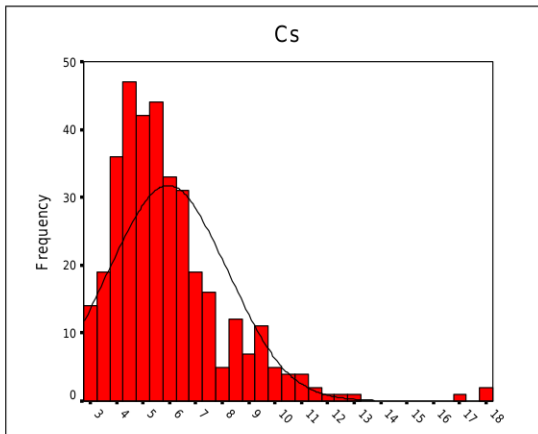
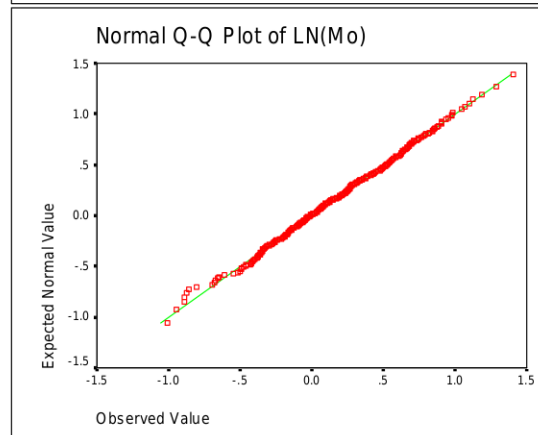
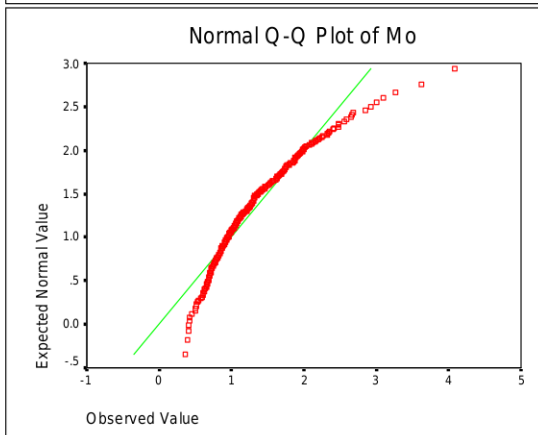
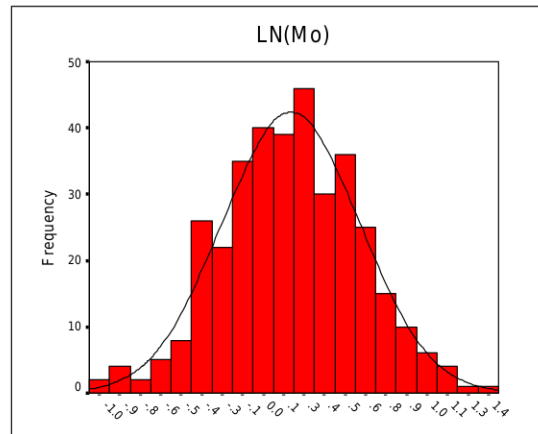
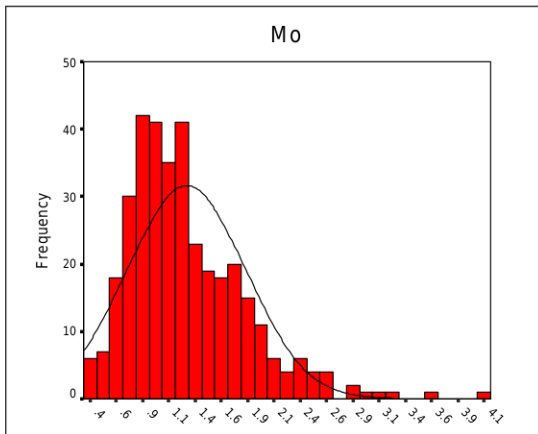


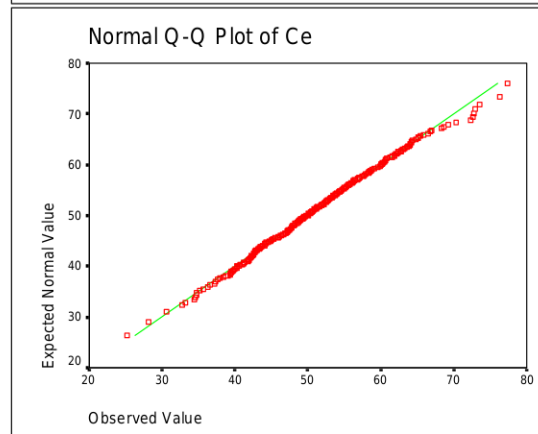
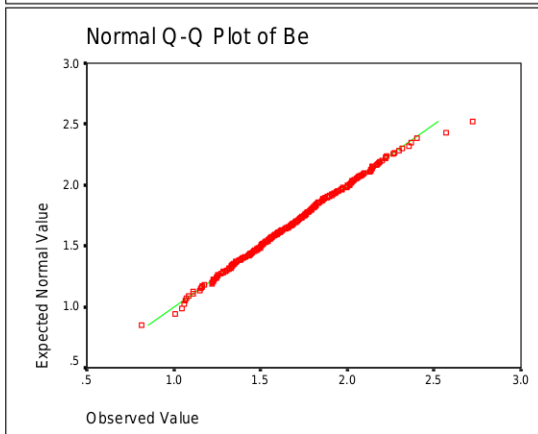
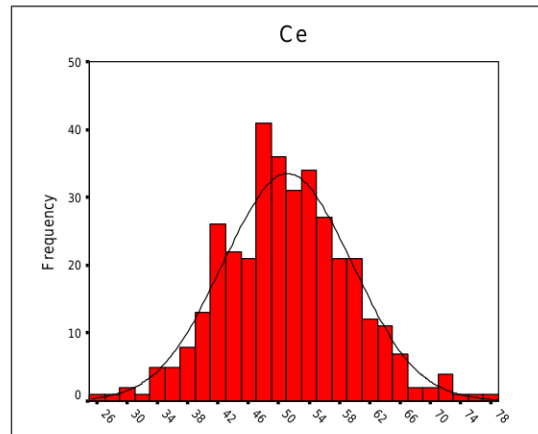
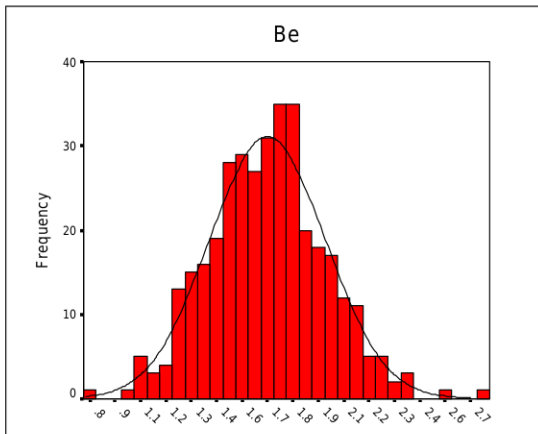
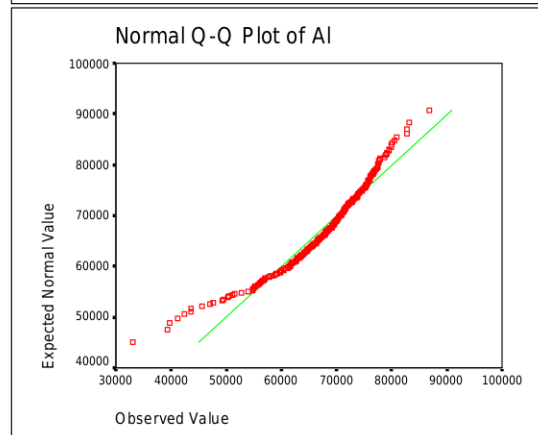
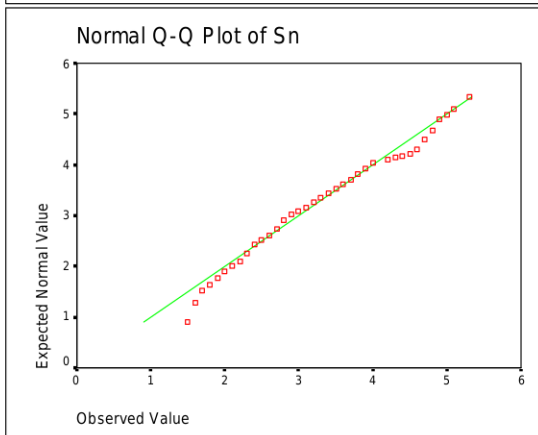
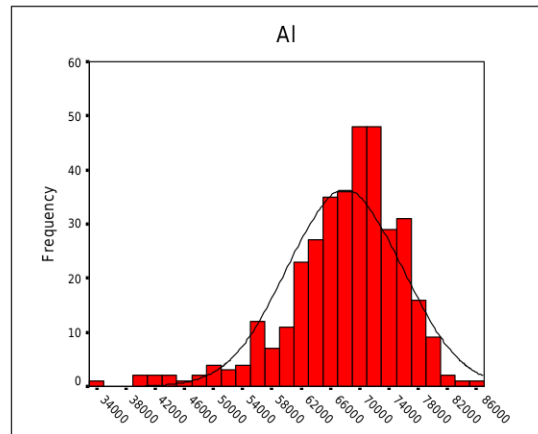
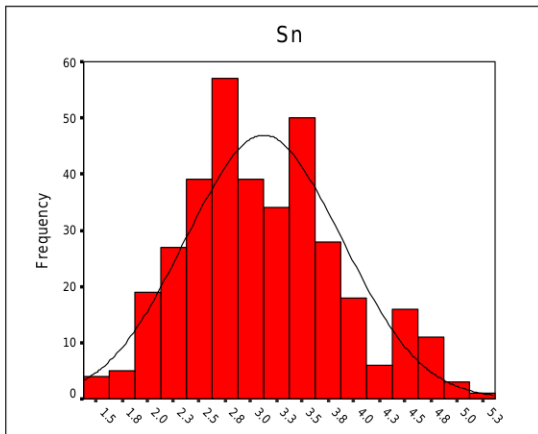


ادامه پیوست ۳: هیستوگرام و نمودار Q-Q برای عناصر مختلف در ورقه اشتها

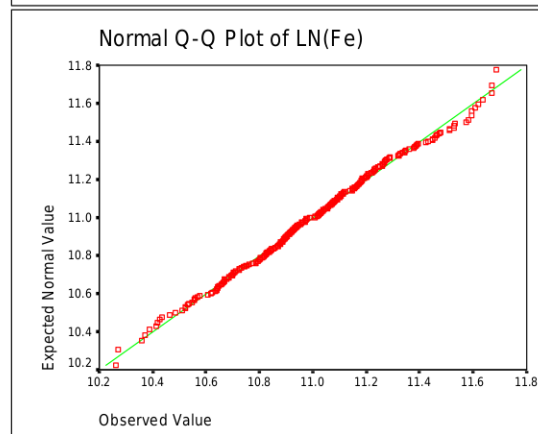
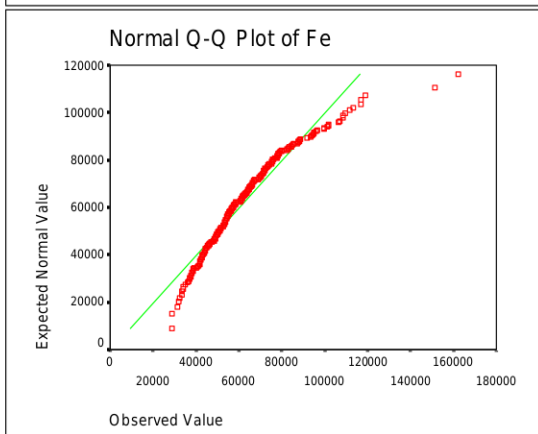
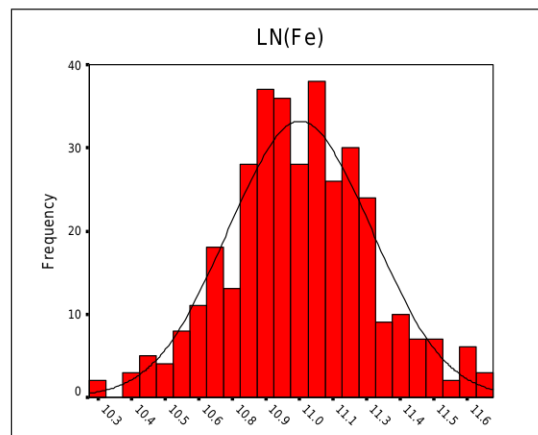
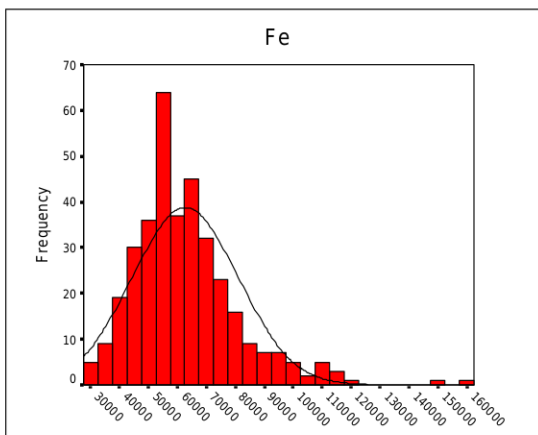
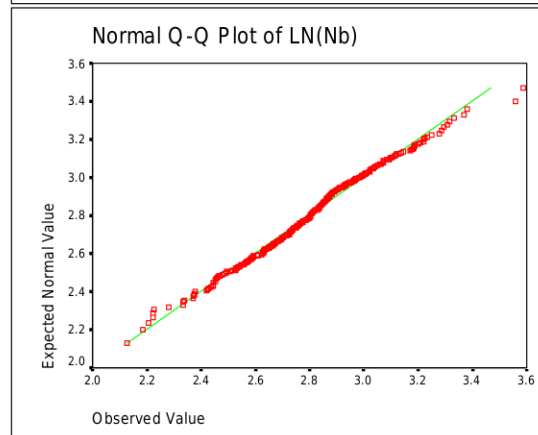
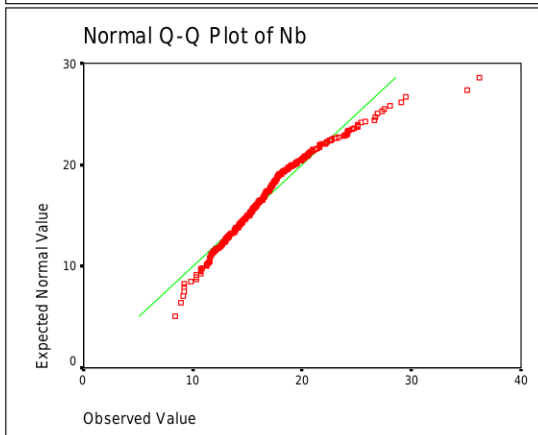
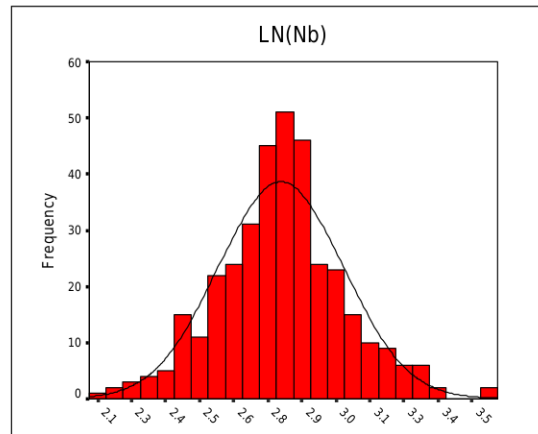
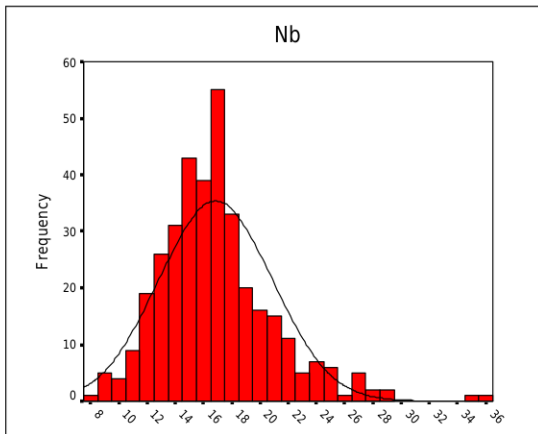


ادامه پیوست ۳: هیستوگرام و نمودار Q-Q برای عناصر مختلف در ورقه اشتها

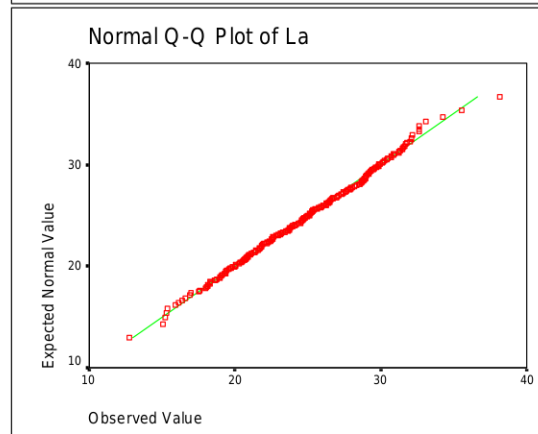
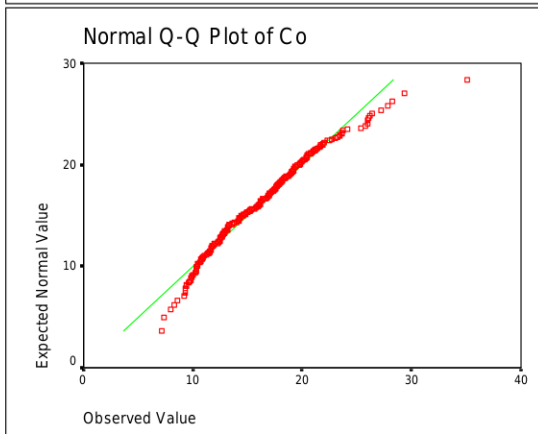
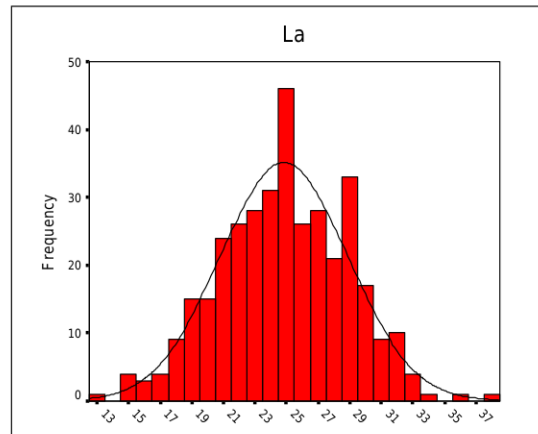
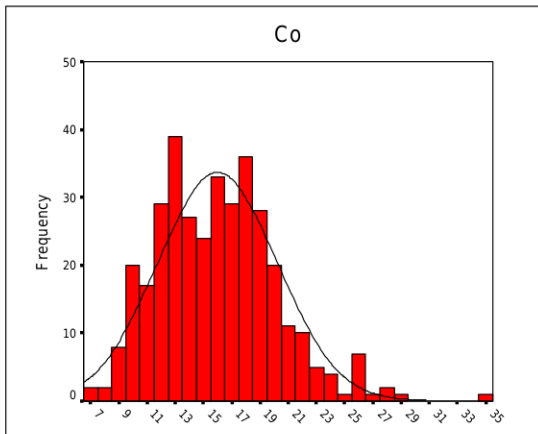
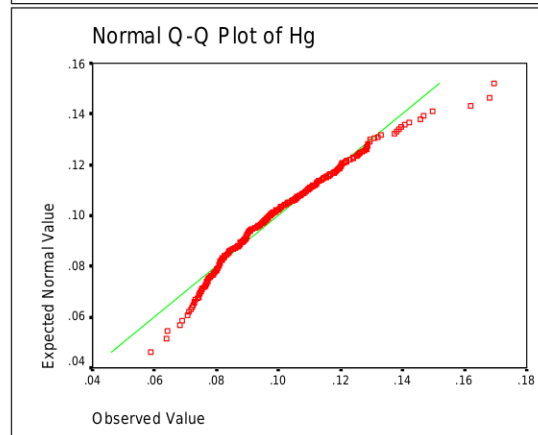
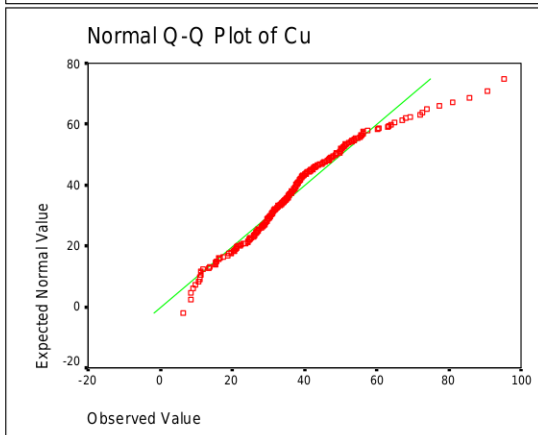
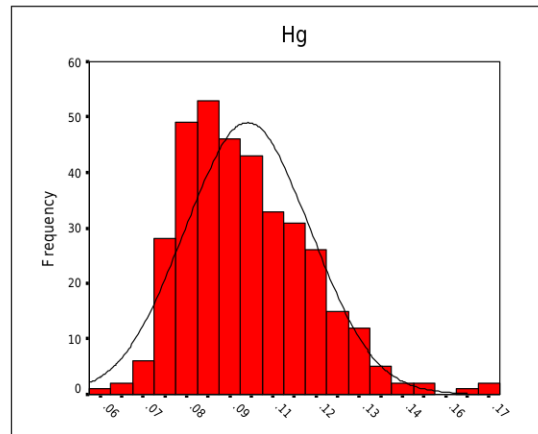
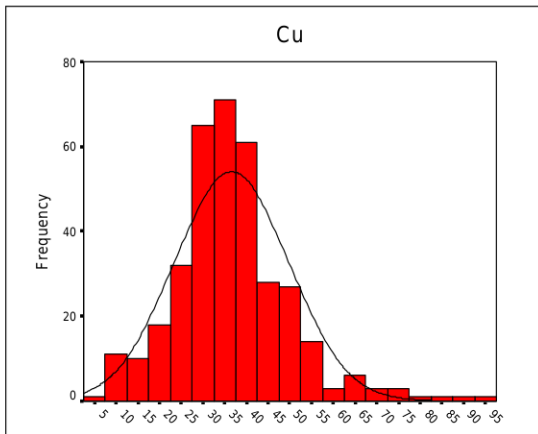


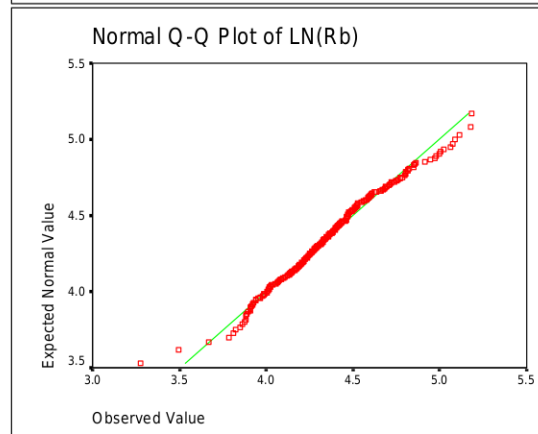
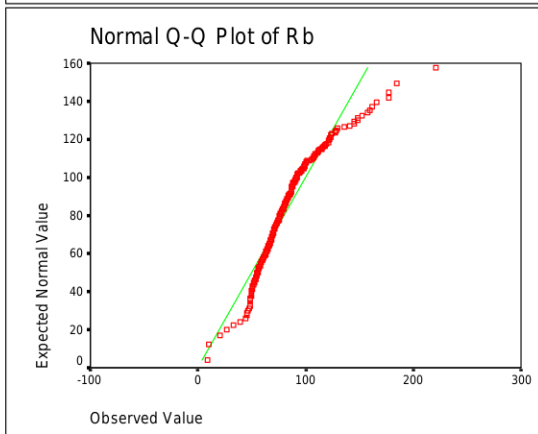
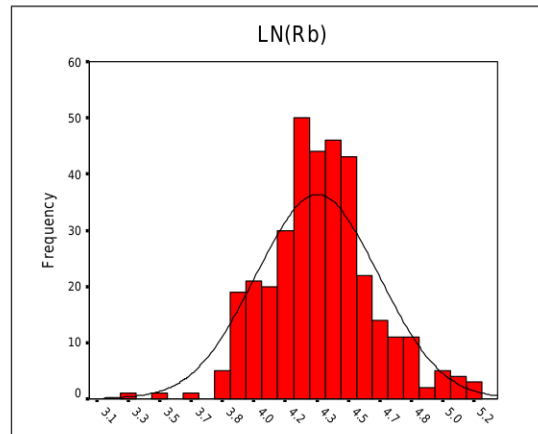
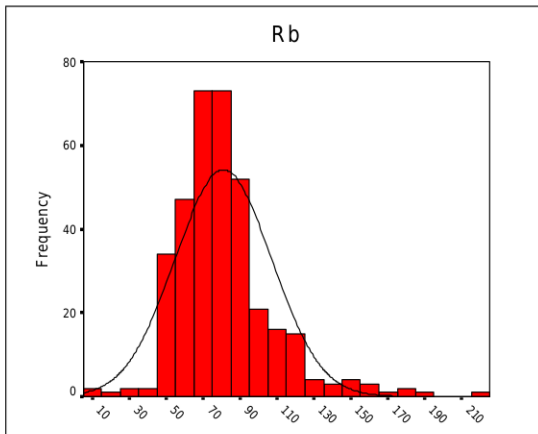
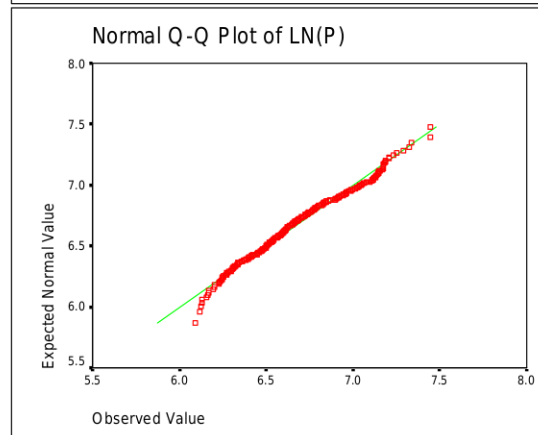
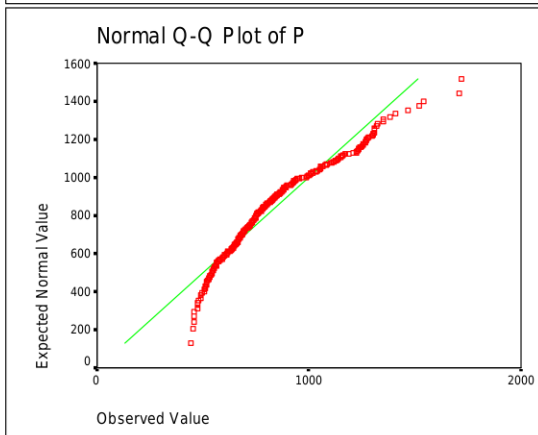
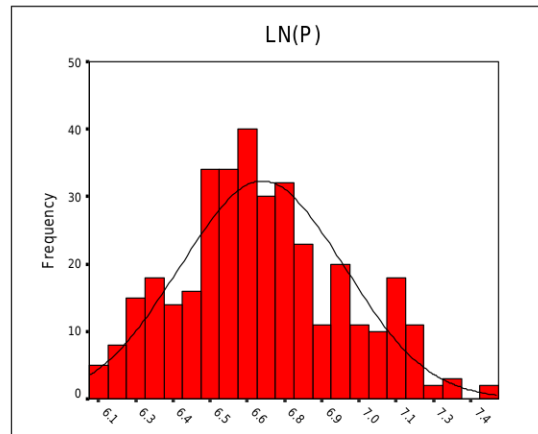
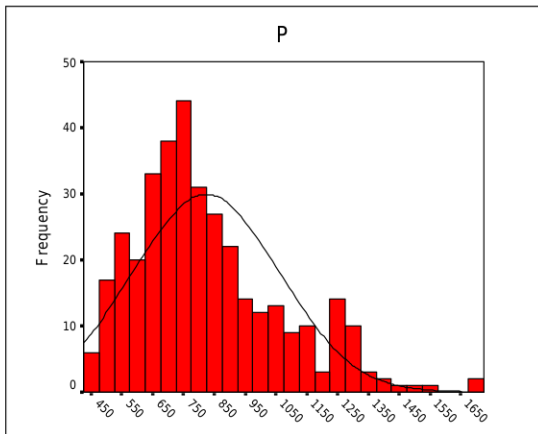


ادامه پیوست ۳: هیستوگرام و نمودار Q-Q برای عناصر مختلف در ورقه اشتها

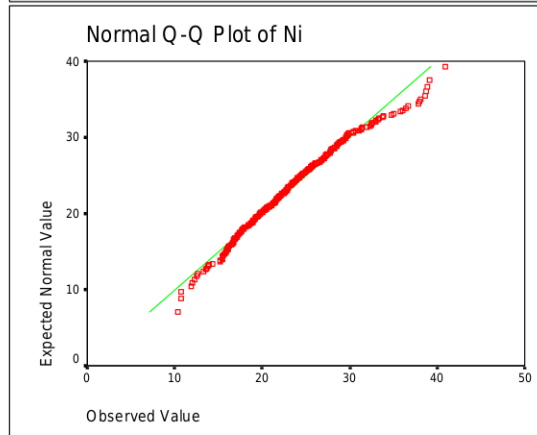
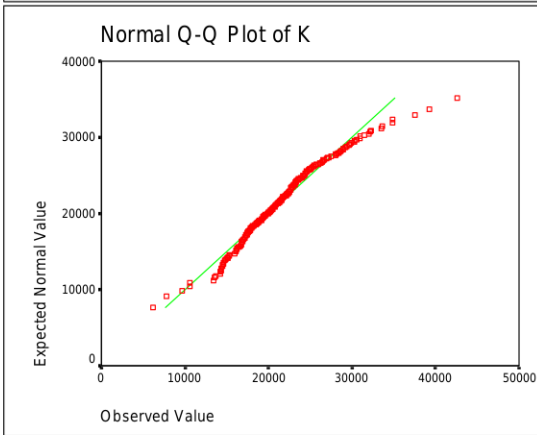
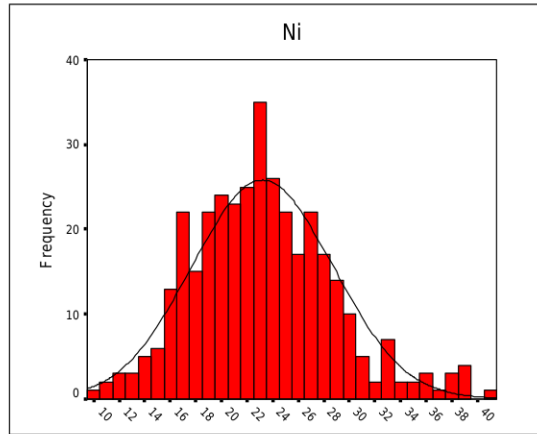
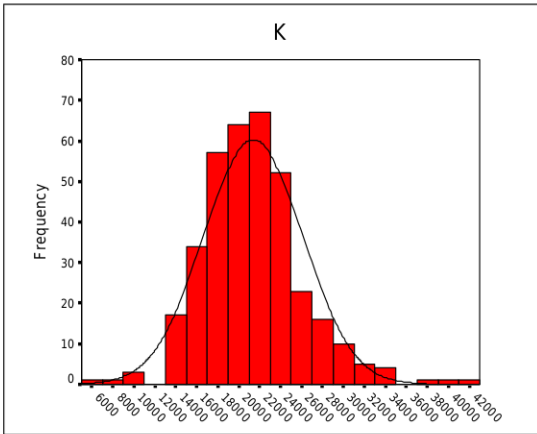
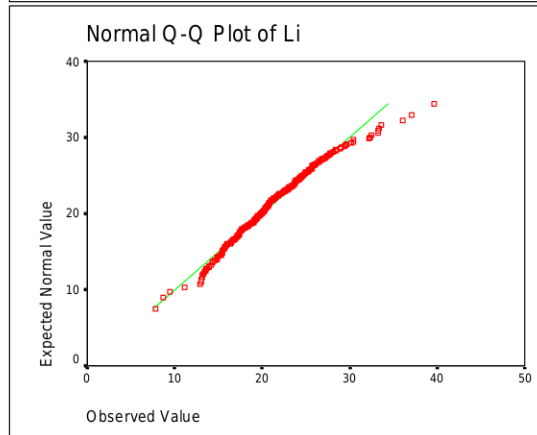
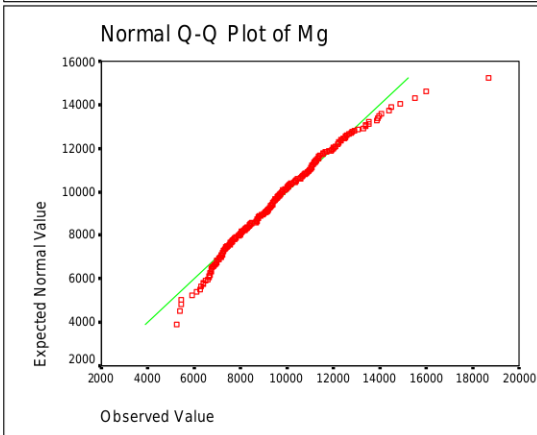
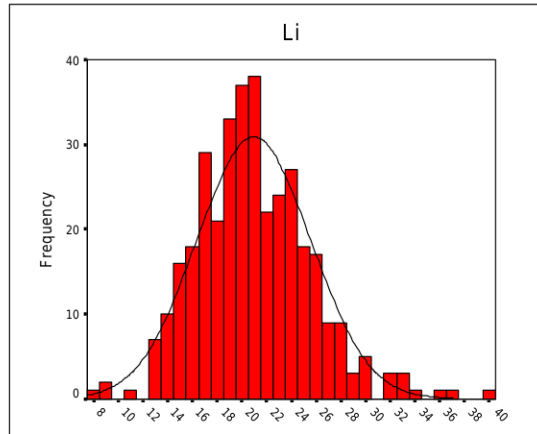
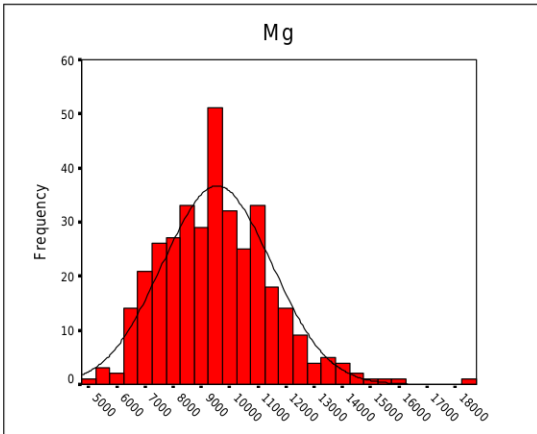


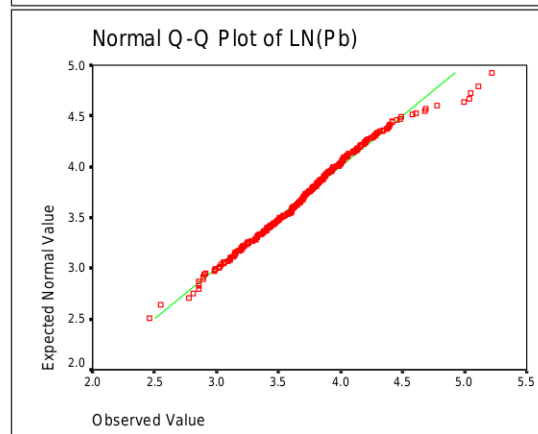
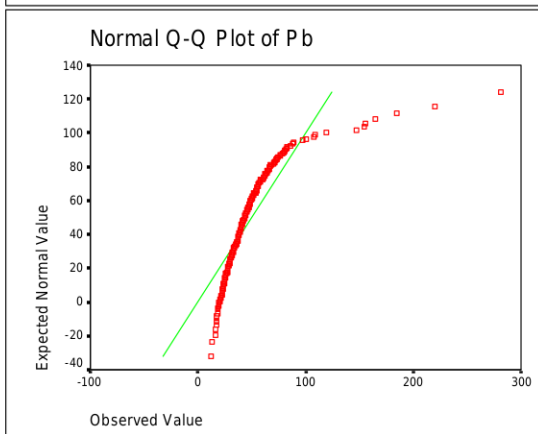
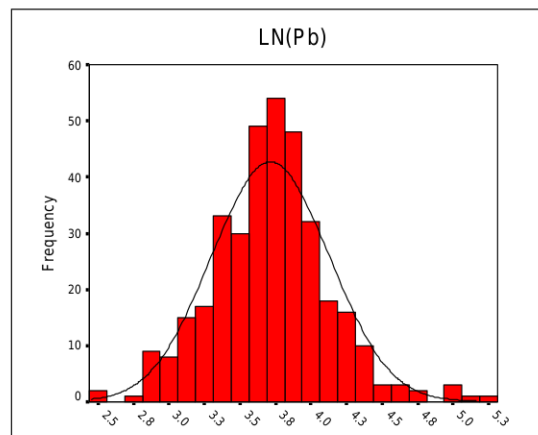
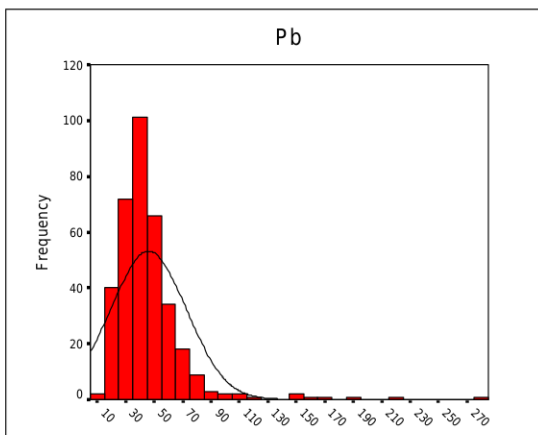
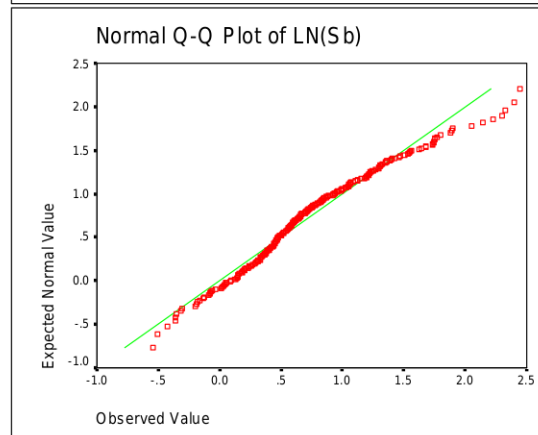
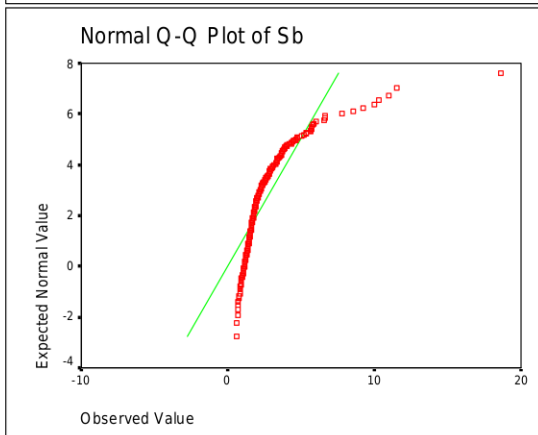
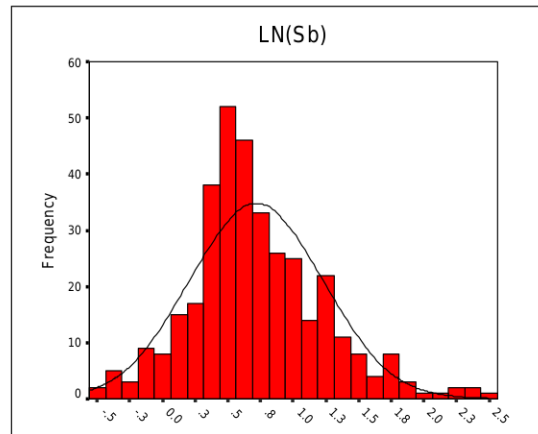
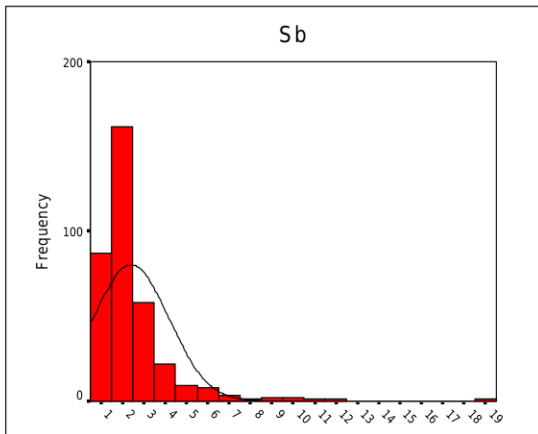
ادامه پیوست ۳: هیستوگرام و نمودار Q-Q برای عناصر مختلف در ورقه اشتهازد



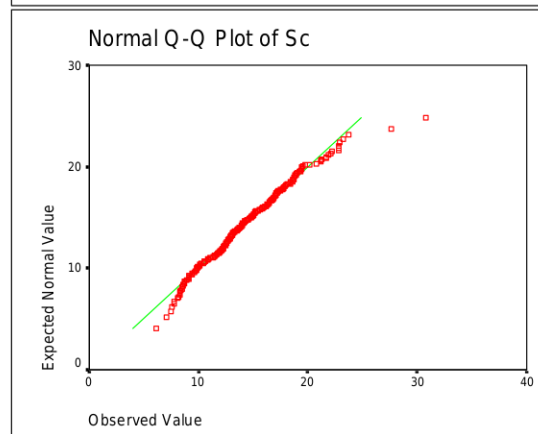
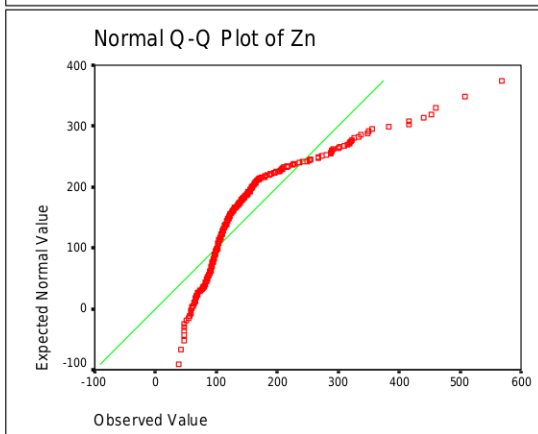
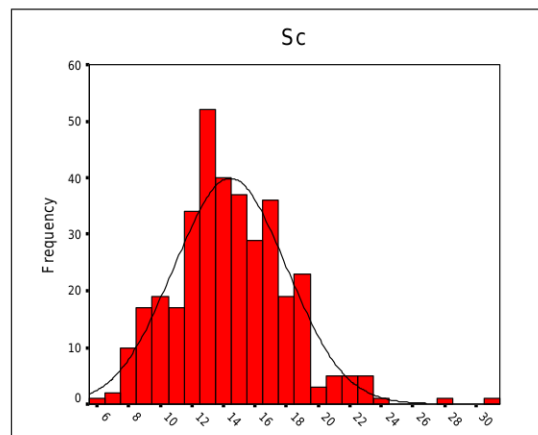
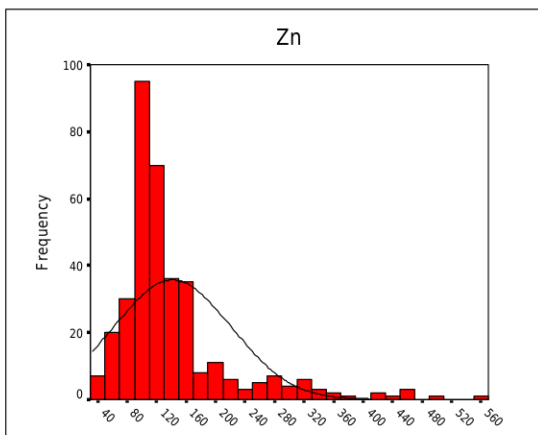
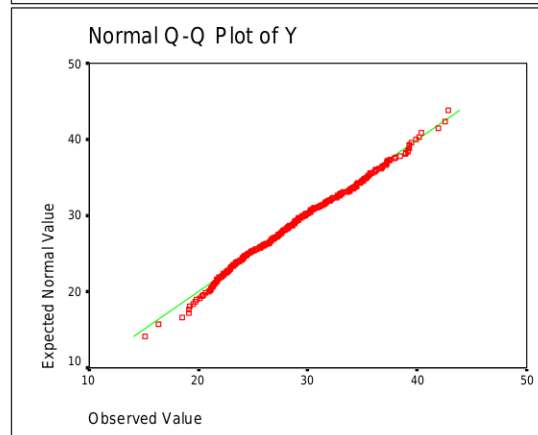
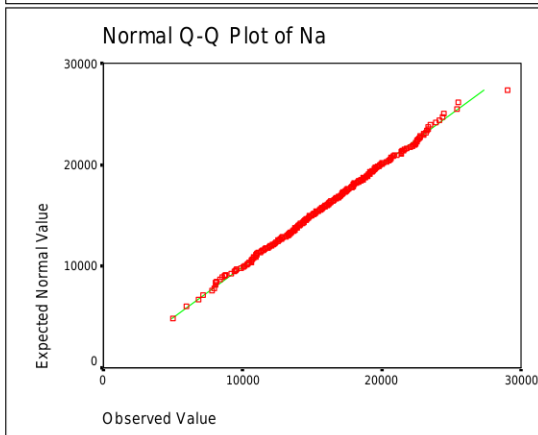
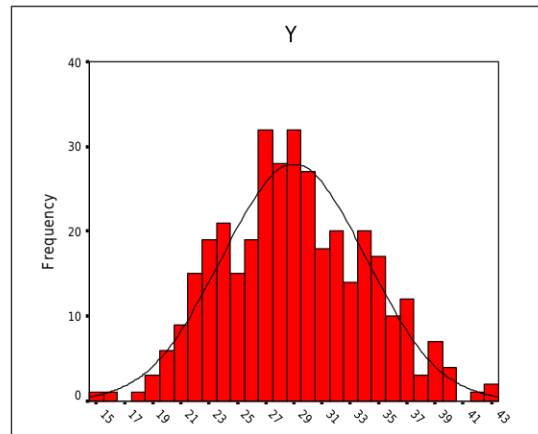
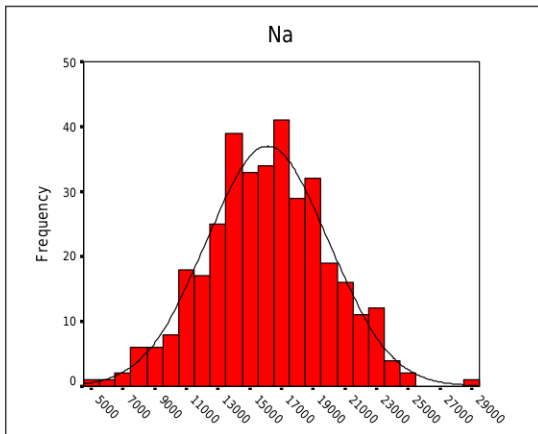


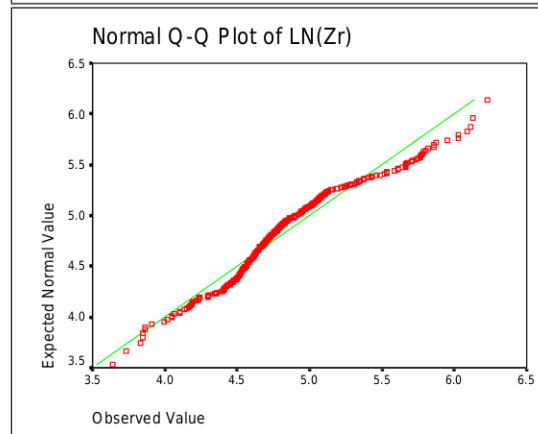
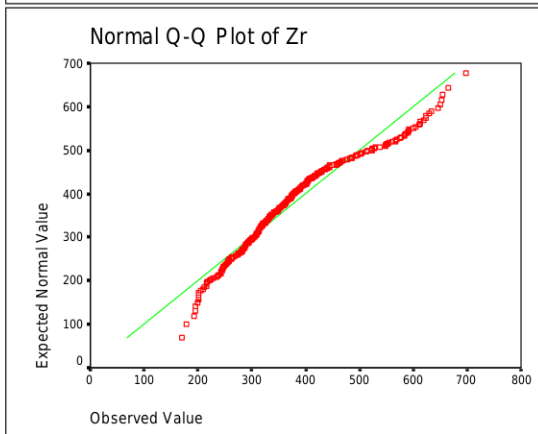
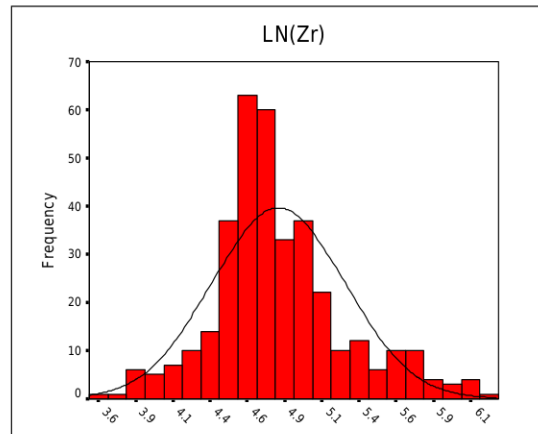
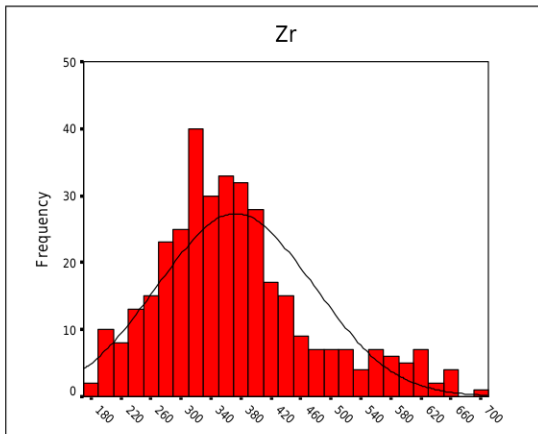
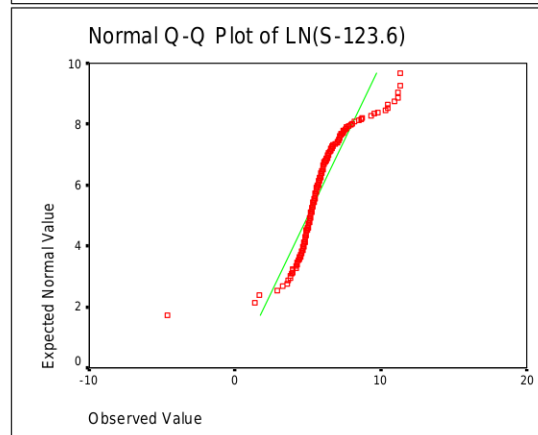
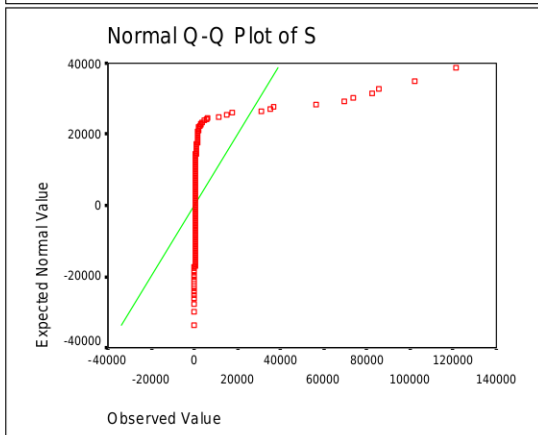
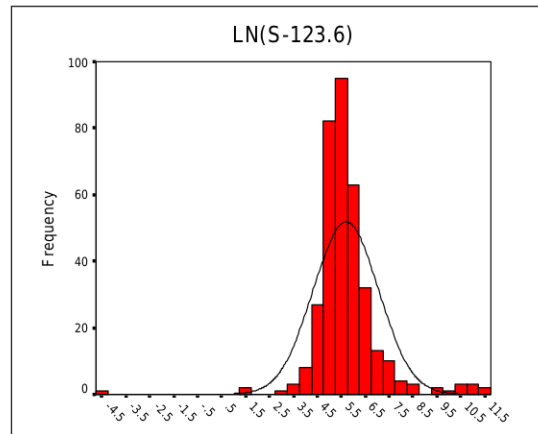
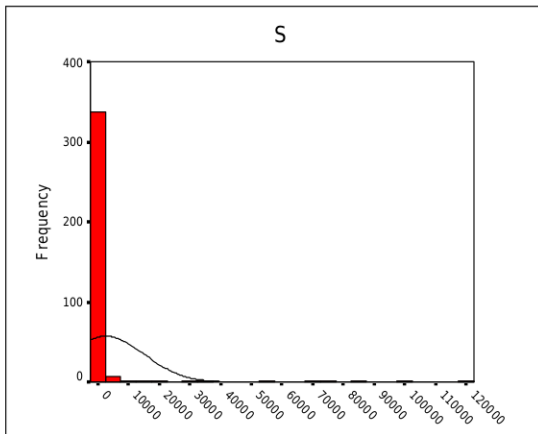
ادامه پیوست ۳: هیستوگرام و نمودار Q-Q برای عناصر مختلف در ورقه اشتهارد





ادامه پیوست ۳: هیستوگرام و نمودار Q-Q برای عناصر مختلف در ورقه اشتها





پیوست ۴: مقادیر امتیازات عاملی برای نمونه های ژنوشیمی ورقه ۱/۱۰۰۰۰۰ اشتهاورد

Sample.No.	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Sample.No.	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
84ES 1	-1.326	0.065	-0.462	1.344	-1.035	0.767	84ES 71	-1.263	0.483	0.031	-1.229	-0.478	-0.617
84ES 2	-0.660	-0.172	-0.855	0.172	0.107	0.668	84ES 72	-0.710	-0.062	0.164	-0.831	0.624	-0.223
84ES 3	-1.655	0.679	0.161	2.922	-0.189	0.084	84ES 73	-0.443	-0.053	0.101	-0.171	1.830	-0.778
84ES 4	-1.061	-0.173	-0.419	1.643	0.575	0.554	84ES 74	-0.478	-0.655	0.300	-0.700	-1.141	-0.773
84ES 5	-0.342	-0.180	-0.793	1.823	-0.277	1.094	84ES 75	-0.675	-0.630	0.158	-0.177	-0.795	0.035
84ES 6	-0.995	-0.238	-0.579	2.042	0.430	0.581	84ES 76	-1.429	-0.414	0.032	-1.262	-1.216	-0.008
84ES 7	-1.027	-0.077	0.168	1.965	0.007	0.924	84ES 77	-0.013	-0.857	1.020	1.417	2.224	-0.960
84ES 8	0.103	-0.281	-0.053	1.265	3.055	0.594	84ES 78	-0.762	0.047	0.432	-0.159	0.877	-0.654
84ES 9	-0.421	-0.308	-0.139	1.187	1.222	0.659	84ES 79	-0.356	-0.142	0.835	0.659	-1.045	-0.494
84ES 10	-0.414	-0.268	-0.062	1.027	1.324	0.965	84ES 80	-0.390	-0.470	0.607	0.015	0.187	-0.355
84ES 11	-0.415	-0.115	-0.137	1.392	1.479	0.576	84ES 81	-0.909	-0.471	0.451	0.787	0.133	0.163
84ES 12	-1.368	2.566	1.254	0.636	-0.644	0.577	84ES 82	0.097	-1.034	0.457	0.717	-0.648	-1.155
84ES 13	-0.808	0.048	-0.125	1.623	-0.371	0.877	84ES 83	-1.088	-0.502	-0.319	-0.100	-1.762	0.457
84ES 14	-1.037	0.212	-0.052	0.815	0.293	0.501	84ES 84	-1.500	-0.380	0.499	-0.391	-0.402	-0.438
84ES 15	0.055	-0.141	-0.046	1.513	-0.193	1.000	84ES 85	-1.331	-0.408	0.049	-0.348	1.728	0.934
84ES 16	-0.632	0.208	-0.275	0.218	0.987	0.949	84ES 86	-0.676	-0.446	-0.904	1.002	-0.737	1.107
84ES 17	-0.977	0.018	-0.387	0.634	-0.014	0.759	84ES 87	-0.154	-0.213	-0.752	0.247	-0.195	0.215
84ES 18	-1.137	0.066	-0.458	0.594	-0.546	0.225	84ES 88	-0.306	0.617	-1.319	-0.530	0.606	-0.524
84ES 19	-1.170	0.077	-0.410	0.797	-0.482	0.461	84ES 89	0.004	0.150	-1.038	-0.108	0.443	-0.726
84ES 20	-0.336	-0.083	-0.582	0.989	-0.538	0.882	84ES 90	-0.169	-0.068	-0.553	-0.496	-1.235	-0.723
84ES 21	-0.754	0.011	-0.584	0.487	0.263	-0.334	84ES 91	-0.083	0.697	-1.356	-1.048	-1.201	-0.543
84ES 22	-0.563	-0.280	-0.503	0.429	0.437	-0.138	84ES 92	-0.078	0.208	-0.942	-0.447	-0.283	-0.492
84ES 23	-0.713	-0.277	-0.222	0.278	0.756	-0.724	84ES 93	-0.059	0.351	-1.533	0.353	-0.377	-0.225
84ES 24	-0.338	-0.199	-0.904	1.149	-0.623	1.040	84ES 94	-0.450	0.233	-0.084	-0.707	0.887	-0.541
84ES 25	-0.983	-0.372	-0.606	1.228	-0.698	0.403	84ES 95	0.265	0.743	-1.424	0.742	0.729	-1.087
84ES 26	-1.078	-0.283	-0.073	-0.084	0.465	1.399	84ES 96	-0.905	0.479	-0.610	0.402	1.461	-1.159
84ES 27	-1.013	0.015	0.025	-0.443	0.027	1.483	84ES 97	-0.583	0.982	0.705	3.172	-1.122	-1.671
84ES 28	-0.589	-0.391	0.031	0.035	-0.320	0.587	84ES 98	-0.465	-0.126	-0.691	1.795	0.370	-0.665
84ES 29	-1.005	-0.349	0.115	0.627	0.656	1.187	84ES 99	1.358	0.556	-0.957	-0.204	-0.390	-0.239
84ES 30	-1.329	-0.782	0.191	0.892	-0.861	2.973	84ES 100	-0.117	0.499	-1.128	0.107	0.894	-0.133
84ES 31	-1.543	-0.785	-0.518	2.250	-0.850	3.051	84ES 101	-0.460	0.877	0.306	2.994	-0.738	-1.452
84ES 32	-1.471	-0.954	-0.392	1.942	1.217	0.986	84ES 102	0.226	0.227	0.484	3.051	-1.060	-2.540
84ES 33	-1.096	-1.172	-0.315	2.442	0.049	1.510	84ES 103	-0.264	0.912	2.558	4.081	-0.925	-1.937
84ES 34	-1.236	-0.777	-0.212	0.427	-0.500	1.264	84ES 104	1.549	-0.536	-0.027	1.424	0.243	-2.679
84ES 35	-1.255	-0.884	0.704	2.858	0.408	0.863	84ES 105	-0.516	0.124	-0.779	0.613	-1.326	-1.251
84ES 36	-0.830	-0.716	-0.258	1.151	0.304	0.573	84ES 106	-0.811	-0.247	-0.493	-0.367	-0.375	-0.801
84ES 37	-0.377	-0.498	0.234	-0.426	1.069	0.074	84ES 107	-1.044	0.086	0.094	-0.120	-1.466	-1.221
84ES 38	-0.624	-0.781	0.109	0.220	0.800	-0.220	84ES 108	-1.191	0.227	0.571	0.258	-0.971	-1.007
84ES 39	-0.806	-0.581	0.494	-0.529	1.182	-0.003	84ES 109	-0.345	-0.377	-0.723	0.543	0.255	-0.709
84ES 40	-0.225	-0.646	0.139	-0.626	1.731	0.048	84ES 110	-0.429	-0.698	-0.738	0.152	-0.868	-0.923
84ES 41	-0.383	-0.633	0.404	-0.467	2.475	-0.067	84ES 111	-0.006	-0.288	-0.974	-0.262	-1.120	-0.400
84ES 42	0.117	0.347	-0.149	0.475	1.734	1.064	84ES 112	-0.217	0.004	-0.862	-1.126	-1.046	-0.456
84ES 43	-0.450	0.147	0.639	-0.853	1.255	0.508	84ES 113	-0.397	-0.365	-0.580	0.047	0.482	-0.885
84ES 44	-0.168	-0.873	0.388	0.874	2.249	0.969	84ES 114	0.645	0.238	-0.831	-0.403	-1.014	-0.881
84ES 45	-0.720	-0.479	0.794	0.265	2.533	0.095	84ES 115	-0.115	-0.245	-0.995	-0.042	-0.818	2.018
84ES 46	-0.528	-0.351	0.549	-0.022	2.482	0.690	84ES 116	-0.224	0.270	-0.520	-0.648	-0.147	-1.472
84ES 47	0.594	-0.835	0.631	0.420	3.576	-0.223	84ES 117	1.060	-0.319	-0.823	0.308	-0.788	-1.783
84ES 48	-0.166	-0.477	0.572	0.263	2.256	-0.467	84ES 118	-0.500	-0.273	-0.970	-0.195	-0.053	-0.226
84ES 49	-0.648	-0.606	0.050	-0.375	1.249	0.492	84ES 119	-0.824	-0.226	-0.957	-1.112	-1.095	0.584
84ES 50	-0.483	-0.574	0.206	-0.509	1.745	0.397	84ES 120	-0.250	-0.053	-0.493	-0.175	-0.355	-1.701
84ES 51	-0.456	-0.733	0.288	-0.495	1.389	0.351	84ES 121	1.201	-0.712	-0.938	1.059	-0.352	-2.431
84ES 52	-0.411	-0.566	0.175	-0.233	1.064	0.413	84ES 122	0.230	-0.025	-0.347	-0.306	-0.235	-1.057
84ES 53	-0.391	-1.086	0.242	0.768	0.997	-0.141	84ES 123	0.638	-0.118	-0.498	0.395	3.192	-1.395
84ES 54	0.010	-0.442	0.046	-0.531	0.470	0.556	84ES 124	1.321	-0.700	-0.403	0.108	0.388	-0.765
84ES 55	-1.159	-0.433	1.052	-0.615	0.654	-1.063	84ES 125	0.507	-0.151	-0.599	-0.270	-0.723	-2.101
84ES 56	0.815	-0.007	0.342	-0.072	2.972	0.353	84ES 126	-0.361	0.400	-0.405	0.956	0.005	-1.978
84ES 57	-1.093	-0.711	0.141	-0.178	-0.023	-0.314	84ES 127	0.642	-0.536	-0.407	0.455	-0.634	-1.042
84ES 58	-1.318	-0.573	-0.023	0.166	-0.625	0.247	84ES 128	0.253	0.017	-0.142	0.060	-0.578	-1.310
84ES 59	-0.659	-0.752	0.060	0.038	0.909	-0.242	84ES 129	0.023	-0.049	0.085	-0.430	0.958	-1.826
84ES 60	-1.204	-0.556	0.369	-0.229	-0.057	-0.031	84ES 130	1.564	-0.177	-0.216	-0.020	0.217	-1.596
84ES 61	-1.350	0.395	1.798	0.966	-0.390	0.129	84ES 131	0.248	-0.789	-0.086	-0.474	-1.012	-1.431
84ES 62	0.475	-0.303	0.530	0.322	2.456	-0.489	84ES 132	1.316	2.168	-0.238	-0.927	-0.469	-1.127
84ES 63	-0.650	-0.612	0.312	-0.297	0.876	0.002	84ES 133	-0.488	0.610	-0.104	-0.519	-0.746	-1.387
84ES 64	0.944	-0.713	0.826	0.113	2.219	-0.912	84ES 134	0.721	0.578	-0.200	0.174	-0.320	-1.653
84ES 65	-0.347	-0.379	0.310	-0.021	1.124	-0.312	84ES 135	0.207	-0.031	-0.194	-0.124	0.701	-1.649
84ES 66	-1.161	-0.509	0.524	-0.597	0.552	-0.717	84ES 136	3.062	1.160	-0.315	0.533	1.142	-1.482
84ES 67	-1.014	-0.611	0.308	-0.411	-0.069	-0.625	84ES 137	-0.536	0.085	-0.324	-0.798	-0.048	-1.480
84ES 68	-0.543	-0.324	0.451	-0.821	-0.680	-0.543	84ES 138	0.748	0.440	-1.156	-0.113	-0.085	1.059
84ES 69	-0.836	-0.865	0.188	0.311	0.113	-0.485	84ES 139	-0.699	0.859	-0.516	0.421	-0.031	-1.839
84ES 70	-0.144	-0.919	0.044	1.060	0.377	0.766	84ES 140	1.563	2.069	-1.070	1.266	-1.190	1.444

ادامه پیوست ۴ : مقادیر امتیازات عاملی برای نمونه های ژنوشیمی ورقه ۱/۱۰۰۰۰۰۰۰ اشتهازد

Sample.No.	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Sample.No.	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
84ES 141	1.868	0.188	-1.110	-0.899	-0.222	0.313	84Es 211	-1.053	-0.619	0.551	0.025	-1.902	2.076
84ES 142	-0.586	0.947	-0.938	-1.119	-0.849	-1.673	84Es 212	-0.864	-1.230	0.859	1.929	0.170	0.206
84ES 143	-0.529	0.697	-0.535	0.211	-0.572	-1.515	84Es 213	0.308	-1.088	1.133	0.919	-1.169	-0.054
84ES 144	1.182	2.123	-0.829	-0.713	-1.050	-0.591	84Es 214	0.695	-0.971	2.452	1.665	0.634	-0.843
84ES 145	-1.003	3.916	-1.464	-2.223	-0.486	-0.803	84Es 215	-1.351	-0.210	0.651	-0.446	-1.326	0.977
84Es 146	-0.918	3.772	-1.679	-0.260	2.556	-0.469	84Es 216	-1.382	0.220	0.624	-1.147	-0.277	1.312
84Es 147	-0.001	4.822	-1.637	-0.662	2.074	-0.766	84Es 217	-1.575	-0.271	0.608	-0.352	-1.192	0.810
84Es 148	-0.670	2.887	-1.085	-0.573	1.690	-1.316	84Es 218	-1.710	-0.248	0.625	-0.409	-1.864	-0.495
84Es 149	-0.454	1.489	0.668	-0.322	-1.137	-0.876	84Es 219	-1.443	0.383	0.840	0.945	-0.354	1.657
84Es 150	-0.411	0.867	0.793	-0.125	0.155	-1.068	84Es 220	-1.051	-0.045	0.902	-0.750	-0.244	1.060
84Es 151	-0.633	0.200	-0.114	-0.560	-0.071	-1.028	84Es 221	-0.191	-0.555	1.319	-1.143	-1.235	-0.409
84Es 152	-0.819	3.115	-1.618	-0.813	1.653	-0.451	84Es 222	-0.615	-0.081	1.148	-0.072	-1.319	0.264
84Es 153	0.225	0.778	-0.753	0.154	0.377	-0.332	84Es 223	0.458	-0.424	1.872	-1.155	-0.473	-0.814
84Es 154	-0.248	-0.305	-0.396	-1.380	0.131	-1.068	84Es 224	0.460	0.197	1.942	-0.510	-0.512	-0.808
84Es 155	-0.844	-0.272	-0.415	-1.528	-0.429	-1.034	84Es 225	0.071	1.348	1.381	0.616	0.709	-0.989
84Es 156	-1.723	-0.627	0.497	-0.595	0.396	-1.176	84Es 226	-0.068	1.381	2.273	-0.100	-0.307	-0.871
84Es 157	-1.769	-0.622	0.334	-0.103	0.799	-0.965	84Es 227	0.202	2.904	2.274	-0.051	0.351	-0.873
84Es 158	-1.942	-0.509	0.661	-0.392	0.837	-1.160	84Es 228	-0.003	-0.181	2.169	0.031	-0.744	-1.436
84Es 159	-0.921	-0.138	0.777	-0.691	0.266	-1.280	84Es 229	1.864	-0.618	2.707	0.359	-0.283	-0.229
84Es 160	-1.215	0.066	-0.350	-1.307	-0.497	-1.202	84Es 230	1.387	-0.366	2.547	0.059	-0.432	-0.280
84Es 161	-1.510	-0.925	0.299	-0.506	0.210	-0.978	84Es 231	-0.062	-0.569	2.315	-0.528	2.176	0.051
84Es 162	-1.751	-0.834	0.271	-0.354	-0.362	-1.283	84Es 232	1.240	-0.871	2.420	-0.966	0.050	-1.408
84Es 163	-1.706	-0.205	0.393	-0.391	1.601	-0.481	84Es 233	1.078	-0.698	2.646	-1.528	0.965	-0.748
84Es 164	-1.600	-0.086	0.438	-0.516	1.194	-0.946	84Es 234	0.838	-0.674	1.932	-0.234	-0.356	-0.290
84Es 165	-0.590	-0.310	-0.736	-1.861	-0.438	-0.850	84Es 235	0.621	-0.623	2.321	-1.170	0.542	-0.878
84Es 166	-1.282	-0.248	-0.402	-2.094	-0.996	-1.287	84Es 236	0.553	-0.261	2.132	-1.049	0.682	-0.332
84Es 167	-0.889	-0.523	-0.810	-1.303	-0.087	-0.805	84Es 237	-0.672	-0.337	1.943	-0.902	1.730	0.392
84Es 168	-0.560	-0.181	-0.434	-1.700	-0.684	-1.339	84Es 238	0.455	0.904	2.208	-2.110	2.329	1.712
84Es 169	-0.823	0.020	-0.557	-0.478	0.473	1.092	84Es 239	0.318	2.295	1.836	-1.747	3.698	0.539
84Es 170	-0.738	0.141	-0.548	-0.408	0.118	1.201	84Es 240	0.314	0.687	1.931	-1.488	1.617	0.162
84Es 171	0.039	0.050	-0.910	-0.175	2.426	1.753	84Es 241	3.302	-0.081	3.345	0.668	-0.339	-0.305
84Es 172	0.031	0.238	-1.001	-0.530	2.127	2.058	84Es 242	0.611	0.135	2.955	-0.515	-0.678	1.337
84Es 173	-0.503	1.331	-1.551	-0.465	0.537	1.731	84Es 243	2.723	-0.092	4.142	0.087	-0.201	0.526
84Es 174	-0.396	-0.003	-0.711	-0.586	-0.188	1.706	84Es 244	0.384	-0.173	2.869	-0.360	-0.090	0.475
84Es 175	0.017	0.491	-1.071	-0.367	1.071	1.315	84Es 245	0.796	0.144	2.876	-0.514	-0.462	1.598
84Es 176	-0.750	-0.020	-0.161	-0.448	0.462	1.164	84Es 246	-0.717	0.820	2.070	0.614	-1.142	1.301
84Es 177	-0.204	0.042	-0.110	0.146	0.204	1.560	84Es 247	-0.688	0.235	2.231	0.883	0.270	0.800
84Es 178	-0.049	-0.064	-0.741	-0.361	0.048	1.407	84Es 248	-0.605	0.802	2.520	-0.347	-1.841	1.229
84Es 179	0.223	0.144	-0.607	-0.578	0.594	1.039	84Es 249	0.015	-0.070	2.144	0.016	-0.642	0.697
84Es 180	0.810	0.157	-0.769	-0.414	0.102	1.473	84Es 250	-0.178	0.224	3.032	0.312	-2.282	1.425
84Es 181	0.898	-0.323	-0.805	-0.445	-0.030	0.431	84Es 251	-0.027	1.305	2.040	-0.784	-0.957	1.127
84Es 182	0.101	-0.282	-0.818	-0.118	0.421	0.414	84Es 252	2.052	4.609	2.529	-0.884	-0.680	-0.794
84Es 183	0.861	0.317	-0.791	-0.249	-0.293	0.774	84Es 253	-0.213	1.236	2.374	-0.702	-2.376	2.097
84Es 184	0.421	-0.371	-0.700	-0.014	-0.874	0.135	84Es 254	2.553	-0.135	4.058	-0.250	-0.331	1.059
84Es 185	-0.572	0.065	-0.607	-0.016	-0.993	0.077	84Es 255	0.369	0.017	2.991	-0.443	-0.872	0.398
84Es 186	0.026	0.014	-0.901	0.219	0.546	1.121	84Es 256	2.086	-0.160	-0.492	-0.162	1.508	1.423
84Es 187	-0.204	0.007	-0.784	0.385	0.823	1.357	84Es 257	3.307	-0.678	-0.621	0.203	2.268	1.024
84Es 188	-0.044	0.009	-0.971	-0.386	0.481	1.006	84Es 258	2.007	-0.034	0.100	-0.752	1.299	0.878
84Es 189	0.083	0.076	-0.513	-0.324	0.835	0.633	84Es 259	0.987	0.687	0.422	-0.112	-0.968	1.880
84Es 190	0.229	-0.176	-0.767	-0.132	0.671	0.537	84Es 260	1.791	-0.007	-0.098	-0.083	0.364	0.841
84Es 191	-0.204	-0.179	-0.997	0.941	0.668	1.060	84Es 261	0.758	0.952	-0.289	-0.913	-0.750	0.854
84Es 192	-0.288	-0.116	-0.296	1.184	0.053	-0.047	84Es 262	0.296	1.386	-0.267	-1.150	-1.002	0.875
84Es 193	0.610	-0.388	-0.823	1.153	-0.038	0.485	84Es 263	2.121	-0.177	-0.384	0.090	-0.434	0.726
84Es 194	-0.388	-0.351	-0.307	0.265	0.277	0.679	84Es 264	0.241	0.164	-0.431	-0.830	-0.848	0.803
84Es 195	0.739	-0.193	-0.611	0.016	-0.679	1.159	84Es 265	1.146	-0.184	-0.416	0.034	-0.197	0.848
84Es 196	-0.019	0.113	-0.368	-0.609	-0.702	1.121	84Es 266	2.091	0.340	-0.438	-0.483	-0.132	1.095
84Es 197	0.326	0.229	-0.602	0.456	-0.178	1.377	84Es 267	0.213	0.081	-0.599	-0.729	-0.671	0.812
84Es 198	1.024	-0.198	-0.906	0.329	-1.413	0.647	84Es 268	2.801	-0.059	-0.605	0.188	-0.752	0.733
84Es 199	-0.474	-0.315	-0.408	-1.896	-0.322	-1.054	84Es 269	2.697	-0.510	-0.429	-0.262	-0.425	1.078
84Es 200	-0.589	-0.438	-0.312	-1.835	-0.200	-1.360	84Es 270	0.943	3.464	-0.149	-1.232	-0.613	2.723
84Es 201	-0.603	-0.388	-0.680	-1.834	-0.844	-0.937	84Es 271	0.501	1.149	-0.091	-0.466	-0.589	1.577
84Es 202	-0.621	-0.140	-0.192	-1.517	1.216	-0.725	84Es 272	0.138	0.342	-0.307	-0.421	-0.481	0.089
84Es 203	-0.248	-0.406	-0.362	-1.941	-0.073	-1.133	84Es 273	2.805	-0.832	-0.871	0.370	0.318	0.027
84Es 204	0.696	-0.671	-0.468	-1.675	-0.442	-0.544	84Es 274	2.368	-0.731	-0.730	-0.120	-0.236	-0.321
84Es 205	-0.836	-0.376	-0.538	-1.855	-0.701	-1.084	84Es 275	2.142	-0.783	-0.706	-0.184	-0.224	-0.184
84Es 206	-0.950	-0.496	0.400	-1.425	0.302	-0.495	84Es 276	0.881	-0.753	-0.759	-0.403	0.035	0.007
84Es 207	-0.858	-0.484	0.319	-1.449	0.212	-0.773	84Es 277	0.437	-0.448	-0.759	-0.178	0.358	0.277
84Es 208	-0.585	-0.569	0.959	-2.089	0.361	-0.572	84Es 278	0.315	-0.569	-0.553	-0.484	0.716	0.556
84Es 209	-1.027	-0.421	0.043	-1.118	-0.842	1.484	84Es 279	0.040	-0.542	-0.589	-0.623	0.471	0.514
84Es 210	-1.468	-0.561	0.316	0.122	-1.087	2.513	84Es 280	3.194	-0.993	-0.988	0.201	-0.223	0.912

ادامه پیوست ۴ : مقادیر امتیازات عاملی برای نمونه های ژنوشیمی ورقه ۱/۱۰۰۰۰۰۰۰ اشتهارد

Sample.No.	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
84Es 281	0.755	-0.746	-0.502	-0.657	-0.392	0.504
84Es 282	0.184	-0.578	-0.374	-0.854	-0.063	0.240
84Es 283	0.003	-0.262	-0.378	-1.098	-0.199	0.272
84Es 284	1.052	-0.520	-0.765	-0.834	0.180	0.388
84Es 285	0.031	-0.330	-0.492	-0.518	0.200	0.496
84Es 286	0.423	-0.595	-0.595	-0.577	0.812	0.330
84Es 287	1.298	-0.395	-0.380	-0.290	0.335	0.491
84Es 288	-0.342	-0.482	-0.388	-0.918	-1.096	0.003
84Es 289	0.023	-0.308	-0.606	-1.031	-0.833	0.019
84Es 290	0.943	-0.578	-0.421	-0.571	0.737	-0.046
84Es 291	-0.361	-0.272	-0.386	-1.280	-1.591	-0.084
84Es 292	-0.965	-0.256	-0.620	-1.182	-0.862	-0.016
84Es 293	-0.289	-0.327	-0.677	-0.563	0.055	0.312
84Es 294	-0.141	-0.336	-0.464	-0.847	-0.171	-0.372
84Es 295	2.111	-0.940	-0.641	-0.160	0.013	-0.624
84Es 296	0.075	-0.654	-0.773	-0.885	-1.319	-0.426
84Es 297	0.337	-0.690	-0.656	-0.858	0.145	-0.027
84Es 298	0.009	-0.404	-0.313	-1.414	-1.835	-0.016
84Es 299	-0.587	-0.275	-0.369	-1.050	-0.848	0.149
84Es 300	0.968	-0.113	-0.597	-0.502	-0.769	0.340
84Es 301	0.865	-0.933	-0.563	-1.306	-1.033	0.278
84Es 302	0.259	-0.944	-0.492	-0.333	-0.076	0.465
84Es 303	1.102	-1.221	-0.810	0.310	-0.402	1.308
84Es 304	0.908	-0.394	-0.474	-0.850	-1.445	0.459
84Es 305	0.866	-0.726	-0.532	-0.814	-1.109	0.403
84Es 306	1.571	-0.691	-0.785	-1.064	-1.767	0.847
84Es 307	-0.192	-0.031	-0.804	-0.958	-0.330	1.786
84Es 308	0.587	-0.756	-0.683	-1.223	-0.786	0.539
84Es 309	0.932	-0.670	-0.951	-0.162	-0.774	0.970
84Es 310	1.209	-0.287	-0.587	-0.796	0.586	1.128
84Es 311	1.945	-0.775	-0.368	-0.219	0.266	0.213
84Es 312	0.577	-0.489	-0.436	-0.943	0.528	0.362
84Es 313	1.154	-0.766	-1.129	-0.512	-0.040	0.670
84Es 314	2.744	-0.946	-1.168	0.286	0.994	0.404
84Es 315	1.099	-0.306	-1.118	-0.147	0.282	0.563
84Es 316	-0.116	0.195	0.979	0.972	-0.730	-0.721
84Es 317	-0.564	-0.236	-0.004	-0.338	0.039	-0.716
84Es 318	0.119	-0.569	-0.302	-0.259	-0.786	-0.229
84Es 319	0.207	-0.501	-0.679	-0.262	-1.226	-0.322
84Es 320	-0.327	-0.332	-0.155	-0.348	-0.496	-0.603
84Es 321	0.548	-1.349	-0.507	0.714	-0.434	0.201
84Es 322	0.077	-1.164	-0.624	0.888	-0.817	-0.920
84Es 323	2.791	-1.290	-0.837	-0.170	-1.413	-1.228
84Es 324	-0.179	-0.494	-0.225	-0.002	-0.573	-0.849
84Es 325	0.114	-0.622	-0.159	0.399	-0.461	-1.439
84Es 326	-0.351	0.168	-0.150	-0.023	-0.167	-0.338
84Es 327	0.025	0.347	-1.048	-0.029	-0.504	-0.588
84Es 328	0.412	-0.552	-0.482	0.817	-0.343	-0.571
84Es 329	0.062	-0.506	-0.375	0.628	0.147	-0.477
84Es 330	0.444	0.521	-0.155	-0.338	-0.668	-0.909
84Es 331	0.727	-0.407	-0.417	1.495	-1.031	-0.924
84Es 332	0.830	-0.374	-0.564	1.607	-1.084	0.181
84Es 333	-0.168	-0.170	-0.011	1.040	-0.774	0.150
84Es 334	-0.338	-0.477	-0.561	1.260	0.111	-0.275
84Es 335	-0.191	-0.464	-0.248	0.728	-0.492	0.010
84Es 336	2.077	-0.397	-0.677	0.817	0.191	-1.333
84Es 337	0.002	-0.697	-0.588	2.105	-0.207	-0.261
84Es 338	0.013	-0.182	0.072	1.424	-0.165	-1.014
84Es 339	0.233	-0.161	0.431	1.135	-0.651	-1.719
84Es 340	0.134	0.219	0.299	2.209	-0.280	-1.875
84Es 341	0.109	-0.571	-0.491	1.582	-0.540	0.067
84Es 342	-0.015	-1.234	-0.646	3.099	0.291	-0.993
84Es 343	0.426	-0.698	-0.768	1.431	-0.877	-0.827
84Es 344	1.004	-0.848	-0.752	2.816	-0.460	-0.137
84Es 345	0.641	-0.684	-0.642	1.331	0.016	0.018
84Es 346	0.000	-0.442	0.205	1.550	0.048	-1.727
84Es 347	-0.874	6.400	-1.192	1.131	0.458	-0.476
84Es 348	-0.191	2.057	-0.015	0.635	-0.278	0.387
84Es 349	0.222	1.448	-0.110	0.959	-0.452	1.173
84Es 350	0.504	1.068	-0.271	-0.413	-0.968	0.236

Sample.No.	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
84Es 351	-1.045	1.411	0.538	-0.366	-0.882	0.232
84Es 352	2.599	1.518	-0.154	0.798	-1.111	-0.136
84Es 353	-0.274	2.131	0.473	0.672	-0.674	1.498
84Es 354	0.322	2.098	1.081	1.379	-1.819	1.484
84Es 355	-0.097	2.824	-0.107	1.080	-0.471	0.367
84Es 356	2.471	0.501	-0.279	2.071	0.391	-1.530
84Es 357	0.960	6.732	-0.551	2.571	0.181	-0.109



پیوست ۶ : نتایج مطالعات کانیهای سنگین در ورقه اشنهارد

Sample No.	1	8	11	15	13	21	22	25	28	36	37	38	39	41	43	48
Lab.No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Total Volume cc A	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Panned Volume cc B	34	34	52	32	44	40	30	50	40	40	38	40	40	38	44	40
Study Volume cc C	18	18	19	20	20	20	15	25	20	20	20	20	20	20	20	20
Heavy Volume cc y	0.5	3	2.5	1	1	4.5	3	3	0.6	2.5	0.5	0.2	1	1	2.5	3

MAGNETITE	48	26	16	36	40	27	18	27	35	20	33	0.025	24	6	28	18
HEMATITE	48	23	26	53	25	31	34	36.5	30	44	46	90	65.5	28	17	44
IIMENITE	0.2			2.75		0.01	0.2	0.35	20		0.01	0.5				
CHROMITE																
GARNET		0.01												0.01		
PYROXENES	2	52.5	51	2.7	25	38.5	44	0.35	2.5	0.3	16	5	0.35		9	0.01
AMPHIBL																
BIOTITE																
LIMONITE		0.01	0.01	2.75	2.5	0.35	0.4	3.5	0.35	21	0.2		3.05	0.35		12
PYRITE(OXIDE)	0.01	0.01	0.01	0.02	0.01	0.01	0.01	28	0.01	12	0.2	0.5	3.5	3.5	9	3
EPIDOTS	0.01	0.01	0.01	0.01	0.01				0.01	0.01	0.01	0.01	0.01	28	0.3	18
OLIGISITE	0.01								0.01		0.01		0.01	0.01	0.3	
GOLD																
SCHEELITE																
CINNABAR																
ZIRCON	0.01	0.025	0.01	0.01	0.01	0.01	0.025		0.01	0.01	0.01	0.01	0.01	0.01	0.025	0.01
APATITE		0.01	0.01	0.01	0.01	0.01		0.01							0.01	
RUTILE	0.01		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.025			0.01		0.01	
GALENA																
PYRITE											0.01					
BARITE											0.01	0.01	0.025	0.01	0.025	0.025
ANATASE									0.01							
SPHENE	0.01				0.01			0.01	0.01	0.01					0.01	0.01
ANDALUSITE																
MALACHITE																
LEUCOXENE	0.01	0.01	0.01	0.01		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		0.01
ARAGONITE																
NATIVE LEAD																
COPRITE																
SILVER																
NATIVE COPPER																
JARUSITE																
NIGRINE																
SILLIMANITE																
MUSCOVITE																
DOLOMITE																
DEBRY ROCK																
PYRITE LIMONITE					0.01			0.35		0.3						
GOETHITE															0.01	
PYROLUSITE																
STIBNITE																
MOLYBDENITE																
LIGHT MIN.	0.32	0.025	4.02	0.025	5.02	0.025	0.025	1.5	7.5	0.027	0.025	0.025	0.025	0.025	4	0.025
ALTERED MIN.											3	0.025	0.15	31		2
SUM	98.59	101.61	97.09	97.30	97.59	96.94	96.68	97.59	95.43	97.69	98.50	96.12	96.65	96.95	67.68	97.08

ادامه بیوست ۶ : نتایج مطالعات کانیهای سنگین در ورقه اشنهارد

Sample No.	49	59	57	58	64	67	68	69	84	85	86	87	88	89	90	94
Lab.No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Total Volume cc A	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Panned Volume cc B	40	50	45	43	55	35	40	40	50	50	35	32	50	53	50	55
Study Volume cc C	20	20	15	20	20	17	20	20	20	25	17.5	16	25	18	25	25
Heavy Volume cc y	0.2	9	12	0.6	10	4	0.5	2	5.5	0.3	2.2	5	5	12	2.2	1.5

MAGNETITE	40	30	80	28.5	60	47	57	50	60	27	20	50	30	20	40	36
HEMATITE	36	48	6	22.5	4	12.5	8	22.5	6	14	16	27.5	52.5	56	30	33
IIMENITE					0.01	0.01	0.01		0.2	3.5		0.01	7	12		0.01
CHROMITE									0.01							
GARNET																
PYROXENES	6	20	0.1	7	30	27.5	16	22.5	22	10.5	4	12.5	0.35	0.4	18	6
AMPHIBL						0.01										
BIOTITE																
LIMONITE	0.01	0.01	2	21	0.2	5	14	2.5	6	14	16	2.5	0.35	0.4	3	6
PYRITE(OXIDE)	15	0.2	6	14	0.01	2.5		0.01	0.01	28	36	5	0.01	0.4	0.01	0.01
EPIDOTS			0.1		0.01	0.01	0.01	0.01	2		0.4	0.01		0.01	0.01	0.01
OLIGISITE	0.01				4	0.025	0.2		2		4		7	8	3	6
GOLD																
SCHEELITE																
CINNABAR																
ZIRCON	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		0.01	0.01	
APATITE					0.01		0.01			0.01	0.01	0.01	0.01		0.01	
RUTILE		0.01	0.025	0.025	0.025	0.025	0.01	0.01	0.025		0.01	0.01	0.01		0.01	
GALENA					0.01											
PYRITE																
BARITE	0.01	0.025	0.025	0.025	0.025	0.025	0.01	0.025	0.01	0.01	0.01	0.025	0.01	0.01	0.01	0.025
ANATASE			0.01	0.01					0.01							
SPHENE		0.01	0.025	0.025							0.01	0.01				
ANDALUSITE																
MALACHITE			0.01		0.01				0.01							
LEUCOXENE	0.01		0.01	0.025	0.01	0.01	0.01		0.01		0.01	0.01	0.01			
ARAGONITE																
NATIVE LEAD																
COPRITE																
SILVER																
NATIVE COPPER									0.01							
JARUSITE																
NIGRINE					0.01	0.01			0.01			0.01				
SILLIMANITE																
MUSCOVITE																
DOLOMITE																
DEBRY ROCK																
PYRITE LIMONITE			5	3.5												
GOETHITE																
PYROLUSITE																
STIBNITE																
MOLYBDENITE																
LIGHT MIN.	0.025	0.025		0.15		2.5	3.02	0.025		0.025	0.42	0.025	0.025	0.025	3.02	10.02
ALTERED MIN.		0.3					0.01	0.01			0.37	0.4				0.01
SUM	97.08	98.59	99.32	96.77	98.34	97.14	98.30	97.60	98.32	97.06	97.25	98.03	97.28	97.26	97.08	97.09

ادامه بیوست ۶ : نتایج مطالعات کانیهای سنگین در ورقه اشنهارد

Sample No.	107	108	113	114	97	120	123	125	129	130	133	134	135	142	148	171
Lab.No.	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Total Volume cc A	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Panned Volume cc B	60	60	42	30	45	32	65	50	40	42	40	40	40	30	50	40
Study Volume cc C	20	20	22	15	22.5	17.5	17	20	20	26	20	20	20	15	25	20
Heavy Volume cc y	1.5	0.5	3	3	5	6	6	5	2.5	3	4	4	4	4	3	3.5

MAGNETITE	60	27	60	50	50	49.5	18	45.5	21	36	32	27	22.5	36	16	35
HEMATITE	14	21	20	20.2	15	8	14	8.7	16	19	26	24	24	34	50	40
IIMENITE		0.01	0.01	0.01	0.01	0.01					0.01		0.01			
CHROMITE																
GARNET																
PYROXENES	0.2	3.5	0.2	18	17.5	20	33	17.5	35	6	15	21	20.5	3	0.4	12.5
AMPHIBL										0.01						
BIOTITE													0.01			
LIMONITE	12	14	2		12.5	2	7	3.5	0.01	18	3	3.5	0.01	3	0.4	5
PYRITE(OXIDE)	10	14	4	0.01				0.01	0.01	12	0.01			0.01		
EPIDOTS	2	14	6		0.01			0.01	0.01	0.01	0.01			0.01	0.01	0.01
OLIGISITE			6	4.5	2.5	8	0.35		24.5	6	21	21	28	15	28	5
GOLD																
SCHEELITE																
CINNABAR		0.01														
ZIRCON	0.01			0.01	0.01		0.01	0.01	0.01	0.01	0.01	0.01	0.01			0.01
APATITE	0.01		0.01			0.01		0.01	0.01	0.01	0.01	0.01	0.01		0.01	0.01
RUTILE	0.01		0.01	0.01	0.01	0.01		0.01		0.01				0.01		
GALENA	0.01				0.01											
PYRITE																
BARITE	0.025	0.01	0.025	3	0.01	4	0.01	0.025	0.01	0.025	0.01	0.025	0.025	0.025	0.025	
ANATASE					0.01											
SPHENE										0.01						
ANDALUSITE																
MALACHITE				0.01	0.01	0.01										
LEUCOXENE									0.01	0.01						
ARAGONITE																
NATIVE LEAD	0.01			0.01												
COPRITE				0.01												
SILVER																
NATIVE COPPER		0.01														
JARUSITE																
NIGRINE																
SILLIMANITE																
MUSCOVITE																
DOLOMITE																
DEBRY ROCK																
PYRITE LIMONITE																
GOETHITE																
PYROLUSITE																
STIBNITE																
MOLYBDENITE																
LIGHT MIN.	0.2	3.3	0.025	1.75	0.025	3.5	3.5	6.5	0.025	0.025	0.025	0.025	1.7	6.02	2.02	0.025
ALTERED MIN.						4.7	21	13		3						
SUM	98.48	96.84	98.28	97.52	97.60	99.75	96.87	94.78	96.60	100.12	97.09	96.57	96.78	97.08	96.87	97.56

ادامه بیوست ۶ : نتایج مطالعات کانیهای سنگین در ورقه اشنهارد

Sample No.	150	151	153	157	176	180	183	188	190	191	193	197	198	205	213	215
Lab.No.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Total Volume cc A	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Panned Volume cc B	30	35	32	45	50	45	40	60	45	56	40	45	45	40	80	45
Study Volume cc C	20	22	17.5	32.5	25	20	15	15	16	18	20	15	14	20	15	22
Heavy Volume cc y	3	5	5	3	3	3	4	4	0.5	0.8	5	4	3	0.5	12	0.5

MAGNETITE	16	16	60	24	32	27	30	40	21	45	40	40	21	0.025	8	0.025
HEMATITE	42	44	22	37.5	47	27.5	38.5	21	27	20	33	51	61.5	50	87.5	35
IIMENITE			0.01		6		0.01	0.3	0.01		0.3	0.3				
CHROMITE													0.01			
GARNET																
PYROXENES	30	4	2	7	3	14		3	21		6	0.3	14	0.5		0.5
AMPHIBL																
BIOTITE														0.01		
LIMONITE	3	0.01	2	7	3	3.5	0.01	0.3	0.35	2.5	0.01	0.3	0.01	15	0.45	30
PYRITE(OXIDE)		0.01	0.01	0.01	0.01	0.01		9	7	5	6	0.3	0.01	0.5	0.45	30
EPIDOTS	0.01	0.01	0.01	0.01	3	0.01	3.5	18	7	15	0.3	0.01	0.01	30		0.01
OLIGISITE	6	32	12	21	0.3	14	17.5	6		2.5	3	3			0.01	
GOLD																
SCHEELITE																
CINNABAR							0.01									
ZIRCON	0.01	0.01		0.01	0.01	0.01	0.01	0.01		0.01	0.01	0.01	0.01	0.025	0.01	0.01
APATITE	0.01	0.01	0.01					0.01	0.01		0.01		0.01	0.01	0.025	
RUTILE		0.01	0.01		0.01					0.01	0.01		0.01	0.01	0.01	0.01
GALENA																
PYRITE															0.01	0.01
BARITE	0.025		0.2	0.01	0.01	0.025	0.01	0.025	0.01	0.01	0.01	0.01	0.025	0.01	0.025	0.025
ANATASE										0.01	0.01					0.01
SPHENE							0.01	0.01			0.01	0.01	0.01	0.01	0.01	
ANDALUSITE																
MALACHITE						0.01				0.01	0.01		0.01		0.01	
LEUCOXENE										0.01				0.025	0.01	0.01
ARAGONITE																
NATIVE LEAD																
COPRITE																
SILVER																
NATIVE COPPER					0.01											
JARUSITE																
NIGRINE																
SILLIMANITE																
MUSCOVITE																
DOLOMITE																
DEBRY ROCK																
PYRITE LIMONITE																
GOETHITE																
PYROLUSITE																
STIBNITE																
MOLYBDENITE																
LIGHT MIN.	0.025	0.025		0.025	3.02	3.5	3.5		3.5	7.5	6	3.02	0.025	0.025	0.025	0.025
ALTERED MIN.	0.01					7	3.5		10	0.01	3					
SUM	97.09	96.09	98.25	96.57	97.37	96.57	96.56	97.66	96.88	97.57	97.68	98.26	96.64	96.15	96.56	95.63

ادامه بیوست ۶ : نتایج مطالعات کانیهای سنگین در ورقه اشنهارد

Sample No.	226	227	228	235	237	238	237	238	230	244	256	258	259	259b	261	262
Lab.No.	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
Total Volume cc A	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Panned Volume cc B	60	40	30	60	30	60	80	40	30	30	85	45	43	45	25	40
Study Volume cc C	15	20	15	20	15	20	12	20	15	15	16	15	13	15	25	20
Heavy Volume cc y	1	0.6	6	3	4	4	10	2.5	7	7	13	8	3.2	8	0.5	5

MAGNETITE	0.025	0.025	40	21	27	20	56	38.5	49	49	72	40	42	48	31.5	31.5
HEMATITE	45	40	20	30.5	45	55	39.5	19	28.5	24	27	30	32	20	20	42
IIMENITE					0.01											
CHROMITE																
GARNET					0.01											
PYROXENES	10	55	27.5	42	24.7	17.7	3	29.2	21	25.5	0.1	27.5	24.02	30	24.7	8.2
AMPHIBL		0.01														
BIOTITE																
LIMONITE	0.01	0.01		0.35	0.01	7.5		0.22		0.01	0.01	0.025	0.01	0.01	16.5	11
PYRITE(OXIDE)		0.02	0.01	0.01	0.35	0.25	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
EPIDOTS	0.01		0.01		0.01											0.01
OLIGISITE		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01			0.01	0.01		0.01
GOLD																
SCHEELITE																
CINNABAR																
ZIRCON	0.01	0.01	0.01	0.025	0.01	0.01	0.025		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.025
APATITE	0.01	0.01	0.01	0.01	0.01	0.01		0.01	0.025	0.01	0.01	0.01	0.025	0.025	0.01	0.01
RUTILE	0.01		0.01	0.01	0.01	0.01	0.01			0.01	0.01	0.01	0.01	0.01		0.01
GALENA			0.01													
PYRITE							0.01									
BARITE	0.025	0.025	0.025	0.01	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.01	0.01	0.01	0.025	0.025
ANATASE																
SPHENE		0.01			0.01			0.01				0.01	0.01		0.01	0.01
ANDALUSITE																
MALACHITE																
LEUCOXENE					0.01		0.01						0.01	0.01	0.01	
ARAGONITE																
NATIVE LEAD									0.01							
COPRITE																
SILVER																
NATIVE COPPER																
JARUSITE																
NIGRINE																
SILLIMANITE																
MUSCOVITE																
DOLOMITE																
DEBRY ROCK																
PYRITE LIMONITE																
GOETHITE																
PYROLUSITE						0.01										
STIBNITE						0.01										
MOLYBDENITE																
LIGHT MIN.	0.025	0.025	0.025		0.025	0.025	0.01	0.01	0.025		0.01	0.01	0.01	0.01	0.025	0.01
ALTERED MIN.	40		10	3.03				11							4.5	4.7
SUM	95.13	95.16	97.62	96.96	97.20	100.56	98.61	98.00	98.62	98.59	99.19	97.60	98.14	98.11	97.31	97.52

ادامه بیوست ۶ : نتایج مطالعات کانیهای سنگین در ورقه اشنهارد

Sample No.	264	272	277	279	281	285	291	292	310	311	316	317	324	330	331	332
Lab.No.	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
Total Volume cc A	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
Panned Volume cc B	50	60	40	40	45	45	40	25	40	40	50	45	60	45	25	53
Study Volume cc C	15	15	10	20	15	15	20	25	20	20	15	15	15	15	12	17
Heavy Volume cc y	0.3	8	8	5	5	4.5	3	0.2	3.5	6	2.5	3	0.3	4	5	0.5

MAGNETITE	36	54	57	42.5	40	60	57	20	56	70	40	57	30	40	56	30
HEMATITE	28	40	35	30	27.5	36	33	27	25	27	5	18	27.5	20	15	14
IIMENITE						0.01						0.01				0.01
CHROMITE																
GARNET																
PYROXENES	16	4	6	10	15	2	4.2	0.3	10.5	1.5	47.5	6	0.25	12.5	11.5	0.2
AMPHIBL												0.01		0.01		0.01
BIOTITE	0.01	0.01		0.01			0.01		0.01							
LIMONITE	6		0.01					12	0.15		0.01	2	2.5	0.025	3	4
PYRITE(OXIDE)	0.01	0.2	0.2	0.01		0.2	0.2	0.3	0.01	0.15	0.01	8	0.01	0.25	1.5	0.01
EPIDOTS	0.02	0.01	0.2	10	15	0.2	4	3	0.01	0.01	5	0.01	5	5	1.5	12
OLIGISITE			0.01	0.01	0.01			0.01	0.01		0.25	2			3	
GOLD																
SCHEELITE																
CINNABAR																
ZIRCON	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.01	0.01	0.01	0.01	0.01		
APATITE	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
RUTILE	0.01	0.01	0.01	0.01	0.025	0.01	0.01	0.01	0.01	0.01						
GALENA																
PYRITE																
BARITE	0.01	0.025	0.025	0.025	0.025	0.025	0.025	0.01	0.025	0.025		0.01		0.025	0.01	0.01
ANATASE																
SPHENE	0.01	0.01	0.01	0.01	0.01	0.025	0.025	0.01	0.025	0.01	0.01		0.01			
ANDALUSITE											0.01					
MALACHITE														0.01		
LEUCOXENE	0.01	0.01		0.01	0.01	0.01	0.01	0.01		0.01						
ARAGONITE																
NATIVE LEAD																
COPRITE																
SILVER																
NATIVE COPPER																
JARUSITE																
NIGRINE																
SILLIMANITE																
MUSCOVITE																
DOLOMITE																
DEBRY ROCK																
PYRITE LIMONITE																
GOETHITE																
PYROLUSITE																
STIBNITE																
MOLYBDENITE				0.01												
LIGHT MIN.	0.025	0.025	0.025	0.025	0.025	0.01	0.025	0.025	0.025	0.025	0.025	5	32.7	15.02	7.02	28.2
ALTERED MIN.	12			5.5				35	7					5		10
SUM	98.14	98.34	98.53	98.16	97.64	98.53	98.54	97.71	98.81	98.76	97.84	98.06	97.99	97.86	98.54	98.45

ادامه پیوست ۶ : نتایج مطالعات کانیهای سنگین در ورقه اشهرارد

Sample No.	335	338	343	348	349
Lab.No.	97	98	99	100	101
Total Volume cc A	10000	10000	10000	10000	10000
Panned Volume cc B	40	44	60	30	40
Study Volume cc C	20	12	15	15	10
Heavy Volume cc y	1.5	6.5	12	2	4.5

MAGNETITE	50	54	90	54	70
HEMATITE	30	18	4	6	22.5
IIMENITE		0.01	0.01		
CHROMITE			0.01		
GARNET					
PYROXENES	2.5	10	0.05	36	3
AMPHIBL	0.01		0.01		
BIOTITE					
LIMONITE	5	4	1.5		
PYRITE(OXIDE)	5	8	2		
EPIDOTS	2.5	0.2	0.5	0.01	
OLIGISITE		4	1.5	2	3
GOLD					
SCHEELITE					
CINNABAR					
ZIRCON	0.01		0.01	0.01	0.01
APATITE	0.01	0.01	0.025	0.01	0.01
RUTILE		0.01			0.01
GALENA					
PYRITE					
BARITE	0.01	0.025	0.025	0.025	0.025
ANATASE					
SPHENE	0.01				
ANDALUSITE			0.01		
MALACHITE			0.01	0.01	
LEUCOXENE					
ARAGONITE					
NATIVE LEAD		0.01			
COPRITE					
SILVER					
NATIVE COPPER					
JARUSITE					
NIGRINE					
SILLIMANITE					
MUSCOVITE					
DOLOMITE					
DEBRY ROCK					
PYRITE LIMONITE					
GOETHITE					
PYROLUSITE					
STIBNITE					
MOLYBDENITE					
LIGHT MIN.	2.7			0.025	0.15
ALTERED MIN.					
SUM	97.75	98.27	99.66	98.09	98.71



Ministry of Industries and Mines
Geological Survey of Iran

Geochemical Exploration Department

Basic Information Layer's Combining Plan & Introduction of
Promising Mineral Area

Geochemical Exploration in E SHTEHARD 1:100000 Sheet

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May: 2009