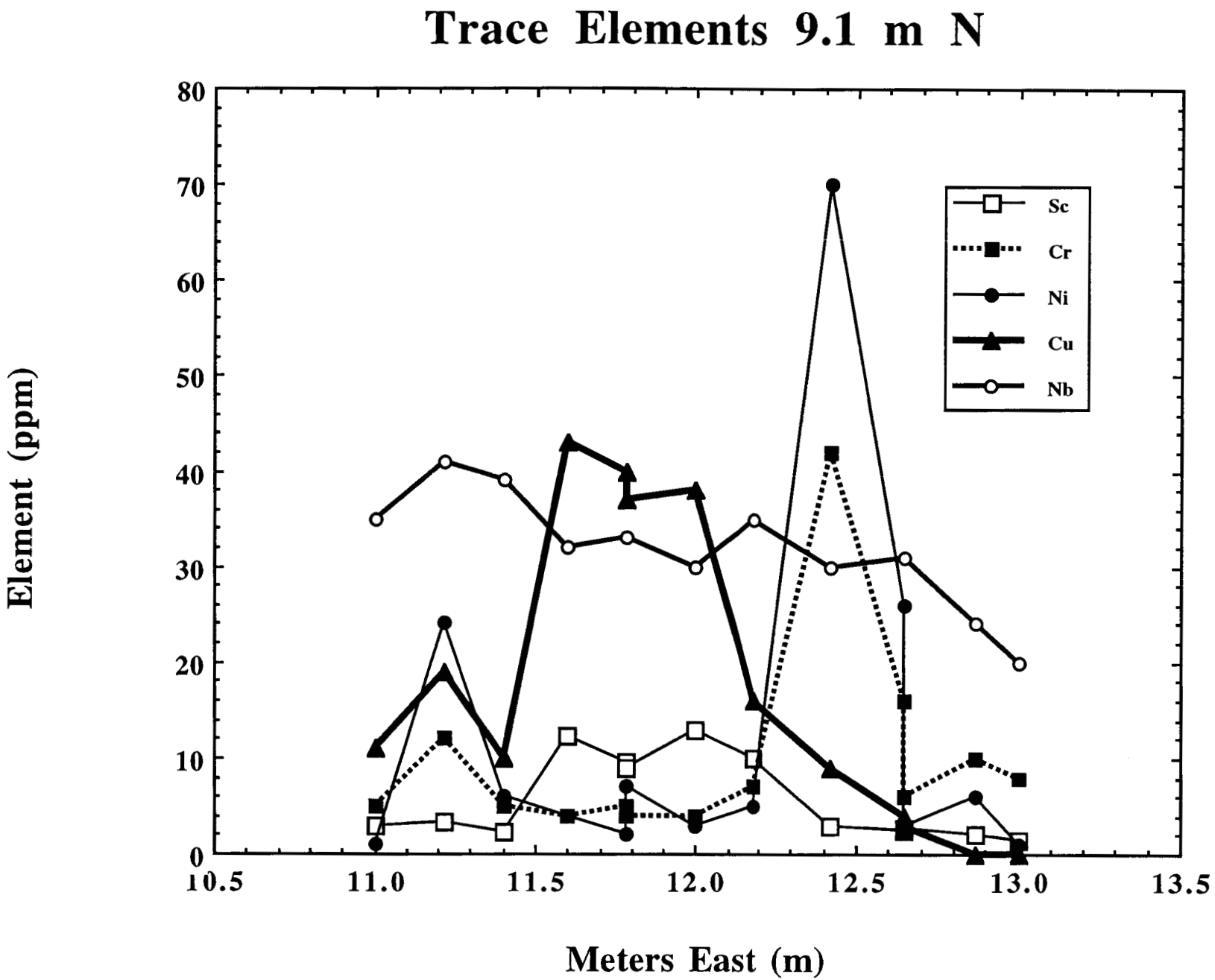
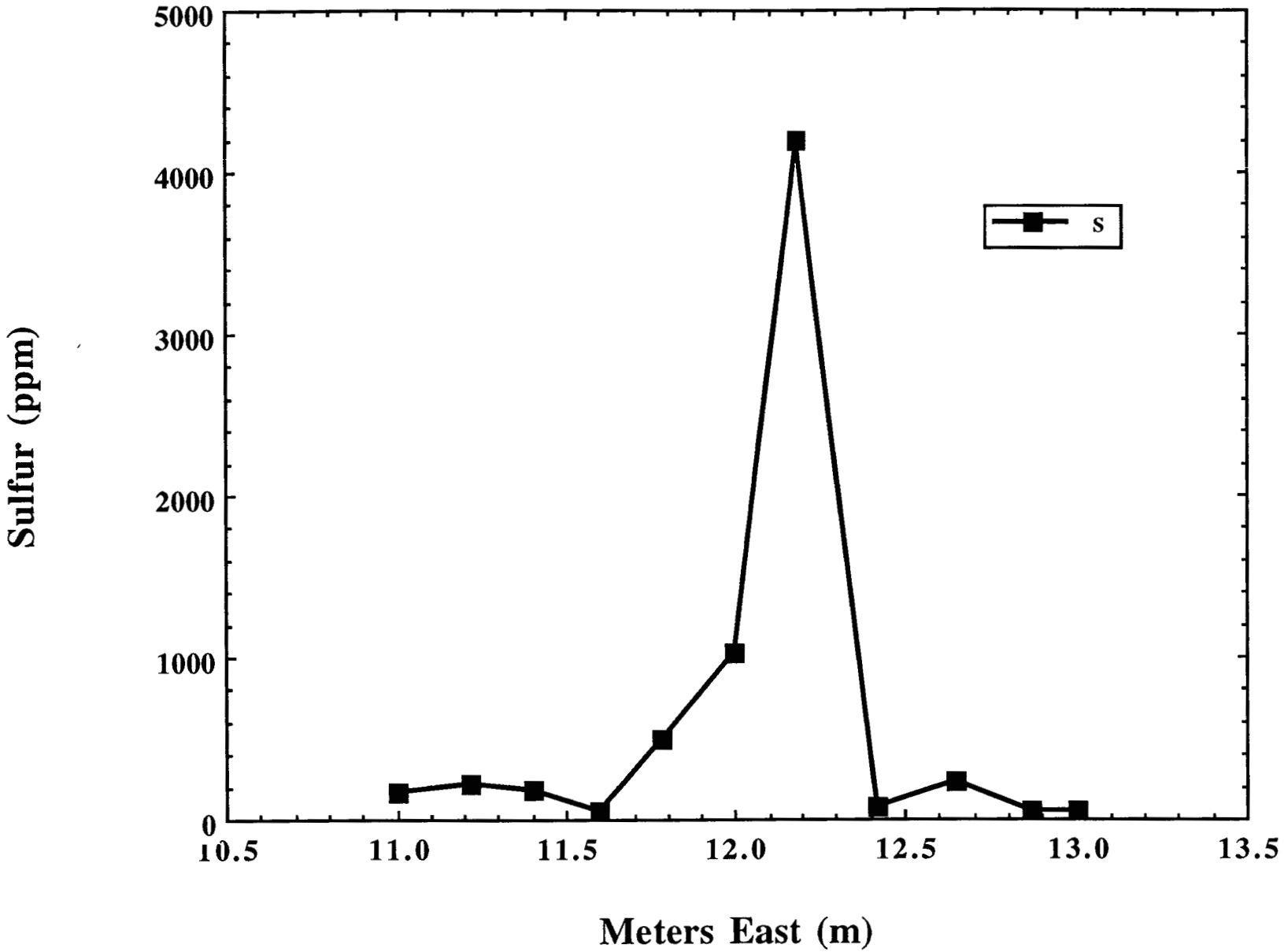
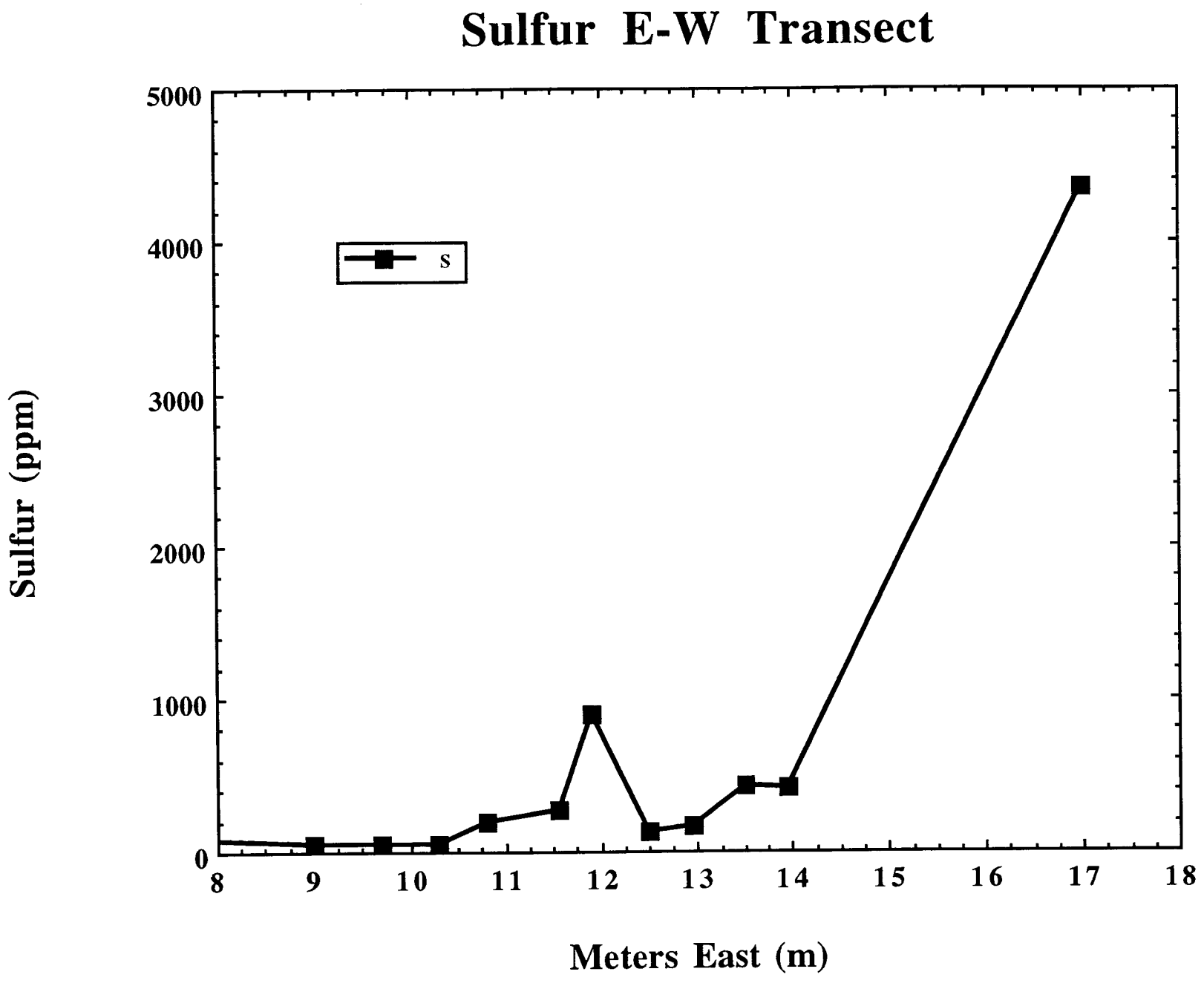
Supplemental Material for Scientific Notebook No. 080

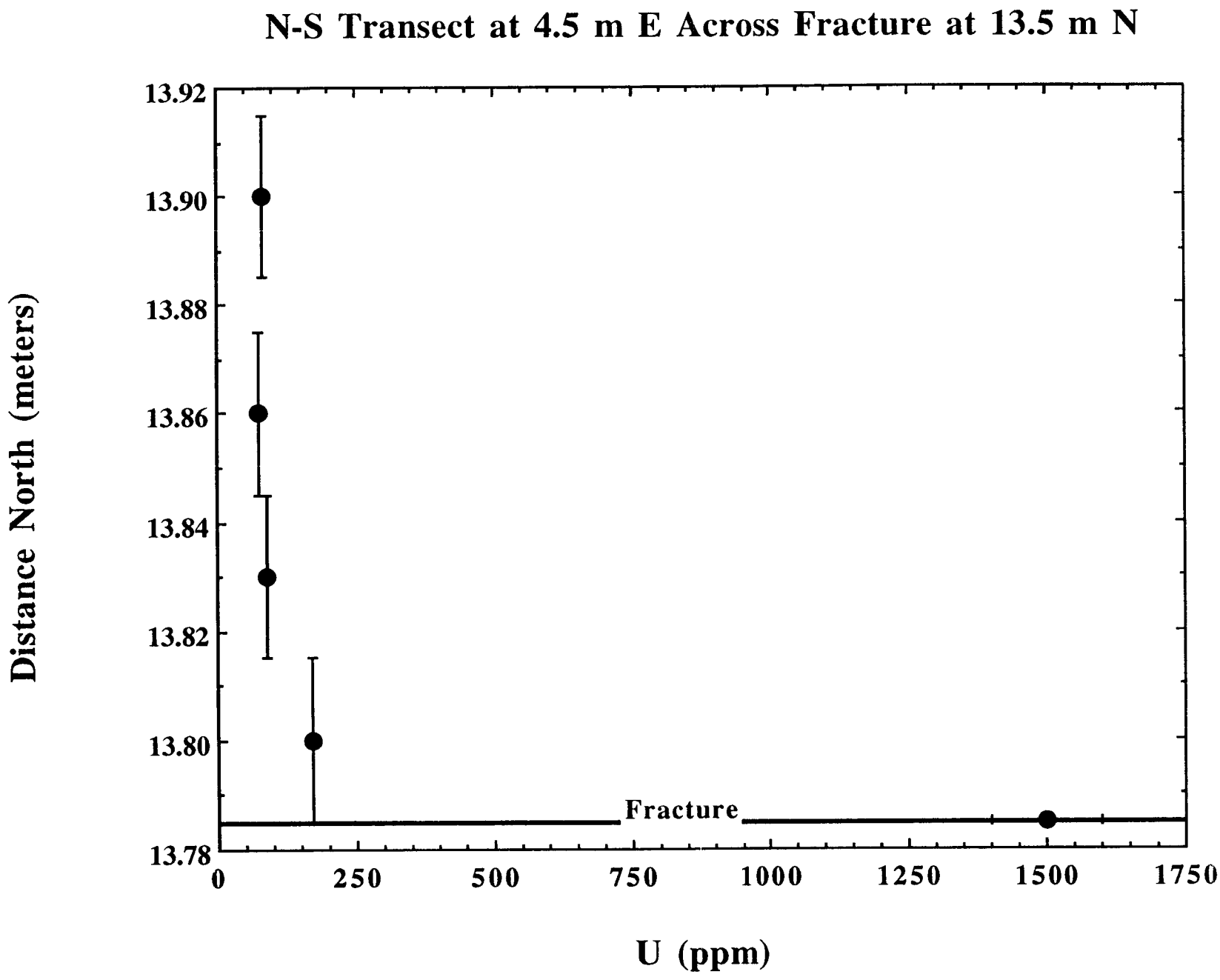
Transect

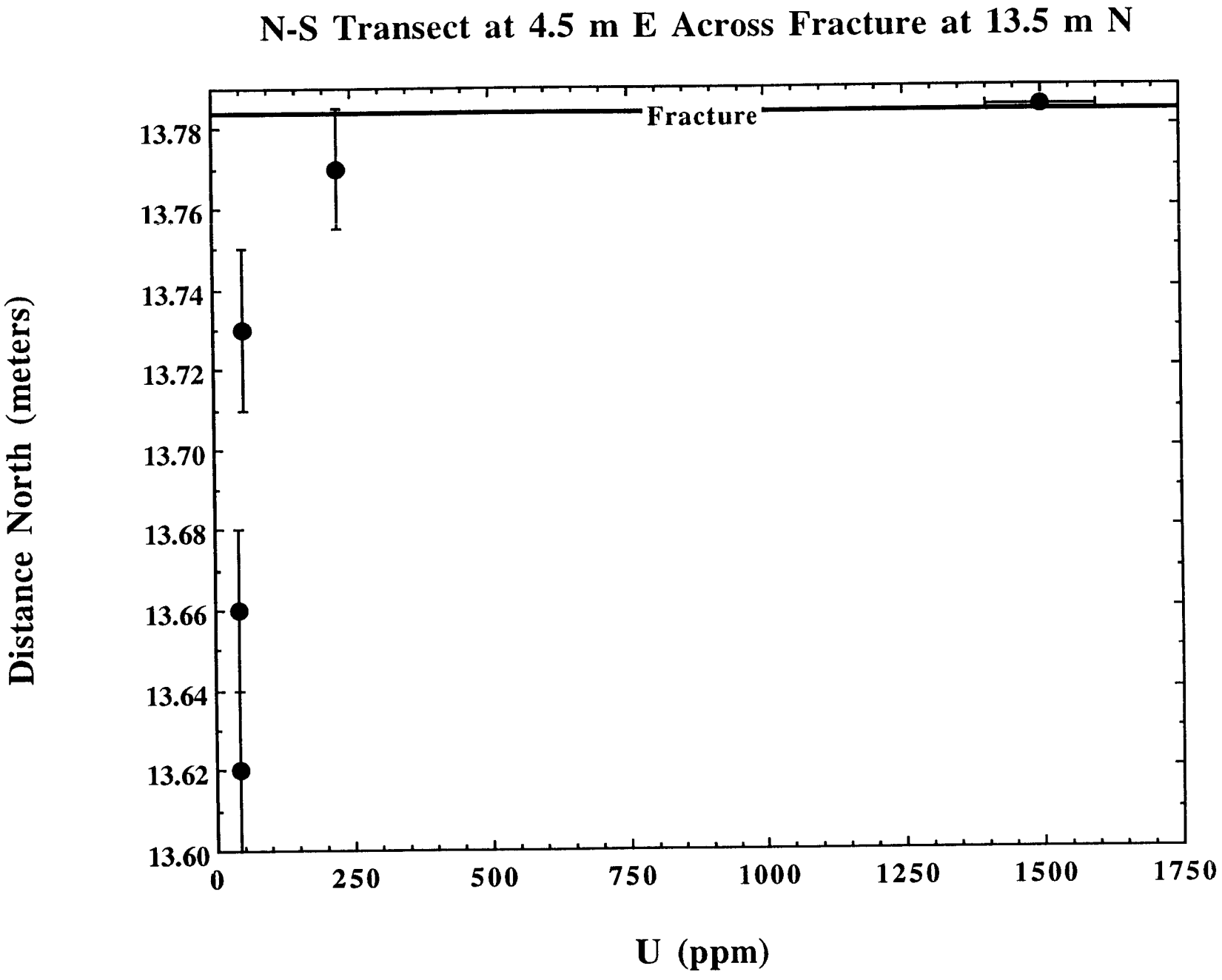

Trace Elements 9.1 m N
Element (ppm)
Meters East (m)
0
10
20
30
40
50
60
70
80
10.5
11.0
11.5
12.0
12.5
13.0
13.5
Sc
Cr
Ni
Cu
Nb

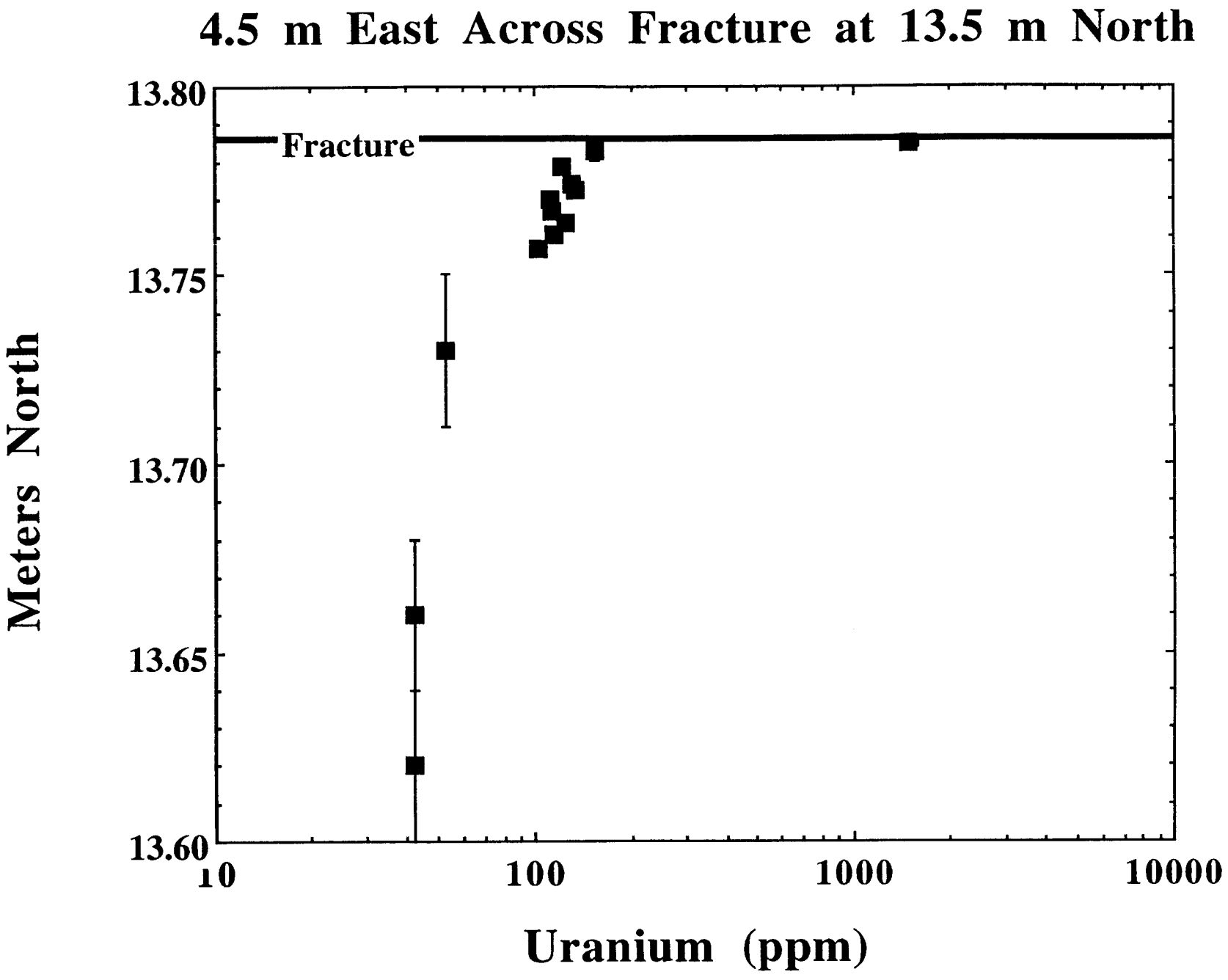
Sulfur 9.1 M North




Sulfur E-W Transect
5000
4000
3000
2000
1000
0
Sulfur (ppm)
S
8
9
10
11
12
13
14
15
16
17
18
Meters East (m)


N-S Transect at 4.5 m E Across Fracture at 13.5 m N
Distance North (meters)
13.92
13.90
13.88
13.86
13.84
13.82
13.80
13.78
Fracture
0
250
500
750
1000
1250
1500
1750
U (ppm)

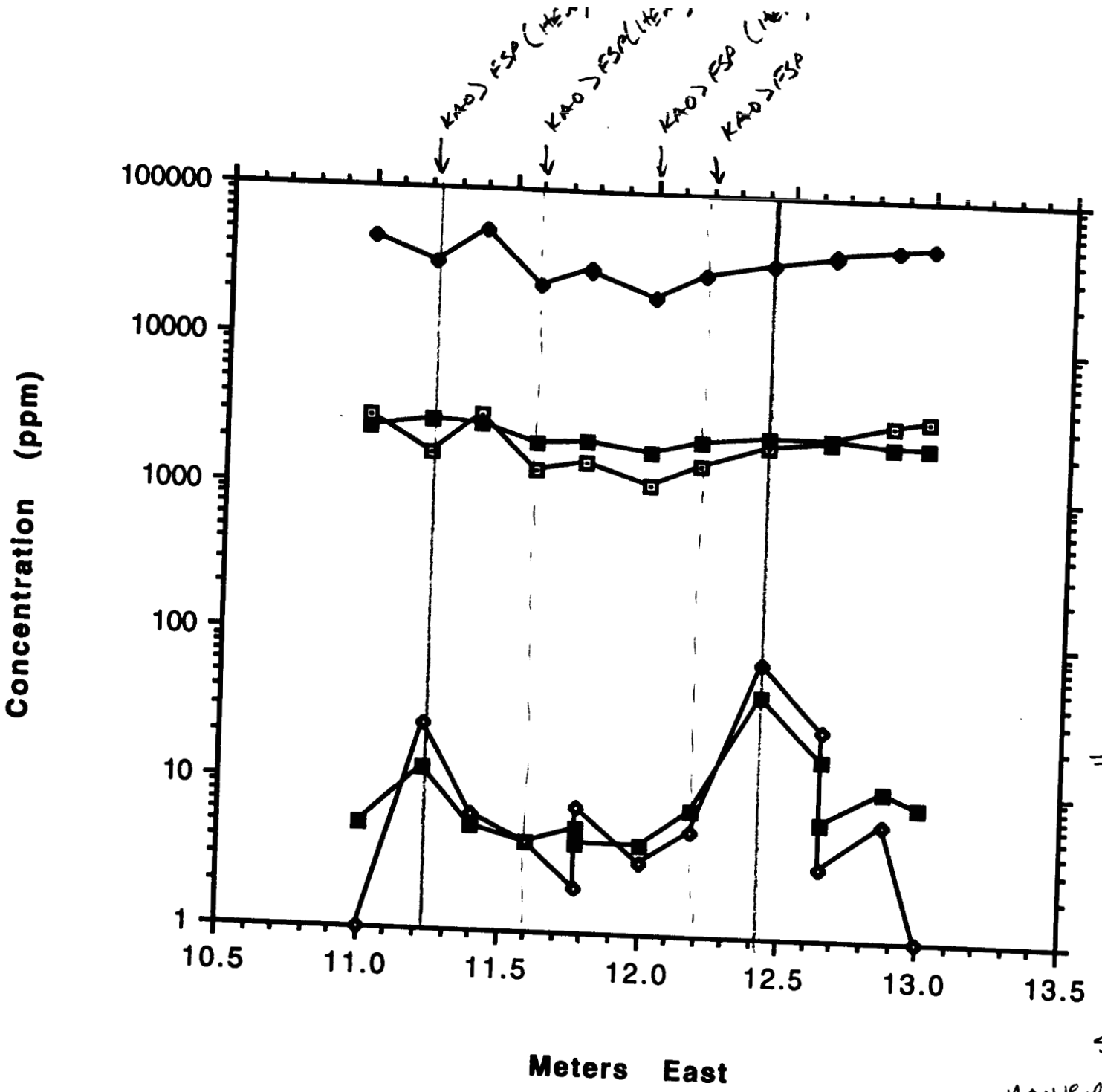

N-S Transect at 4.5 m E Across Fracture at 13.5 m N
Fracture
Distance North (meters)
13.78
13.76
13.74
13.72
13.70
13.68
13.66
13.64
13.62
13.60
0
250
500
750
1000
1250
1500
1750
U (ppm)


4.5 m East Across Fracture at 13.5 m North
Fracture
13.80
13.75
13.70
13.65
13.60
Meters North
10
100
1000
10000
Uranium (ppm)

PB Trace Element Traverses

9.1 N

M. Wiura



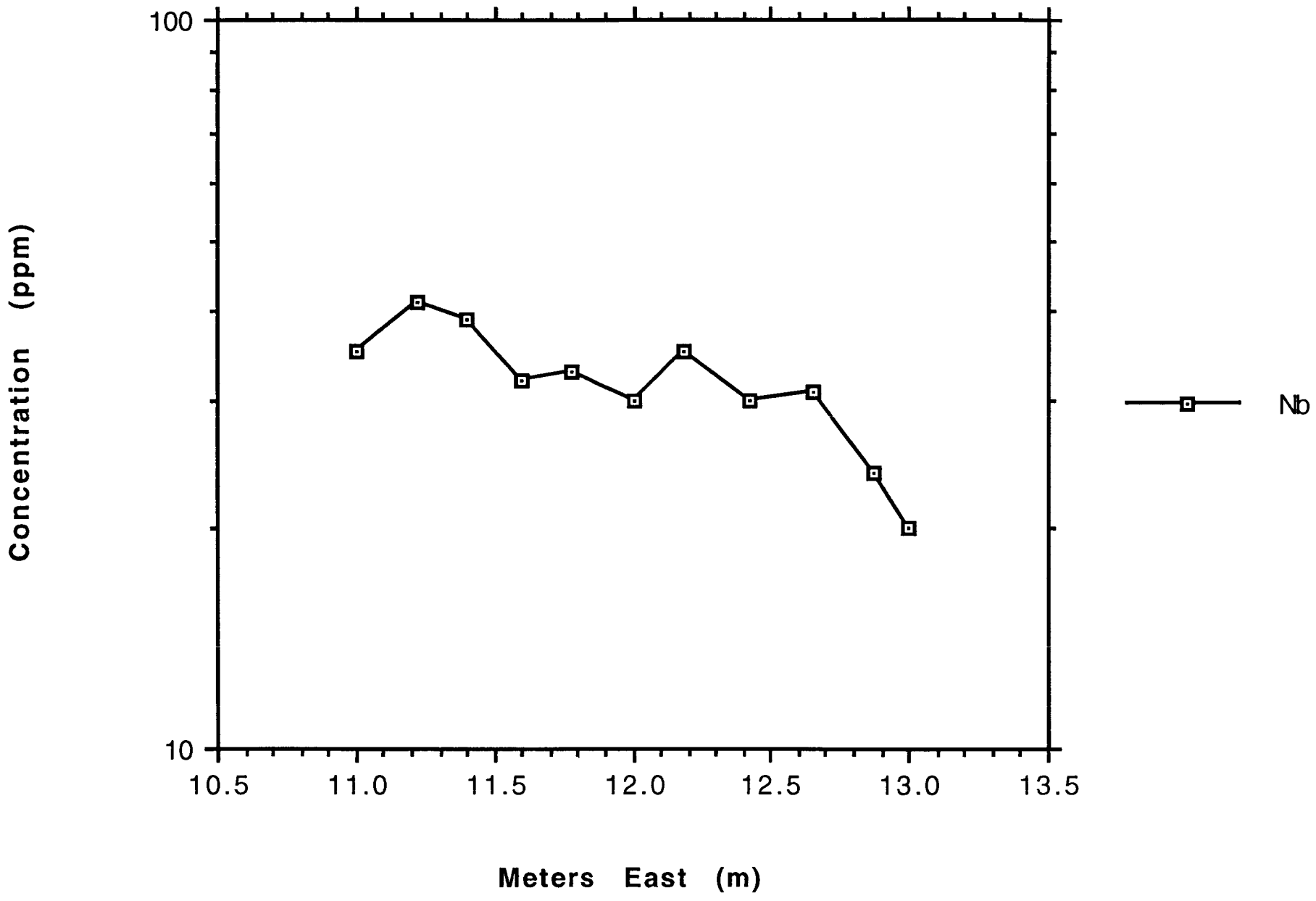
→ zone of increased KAO + Hem

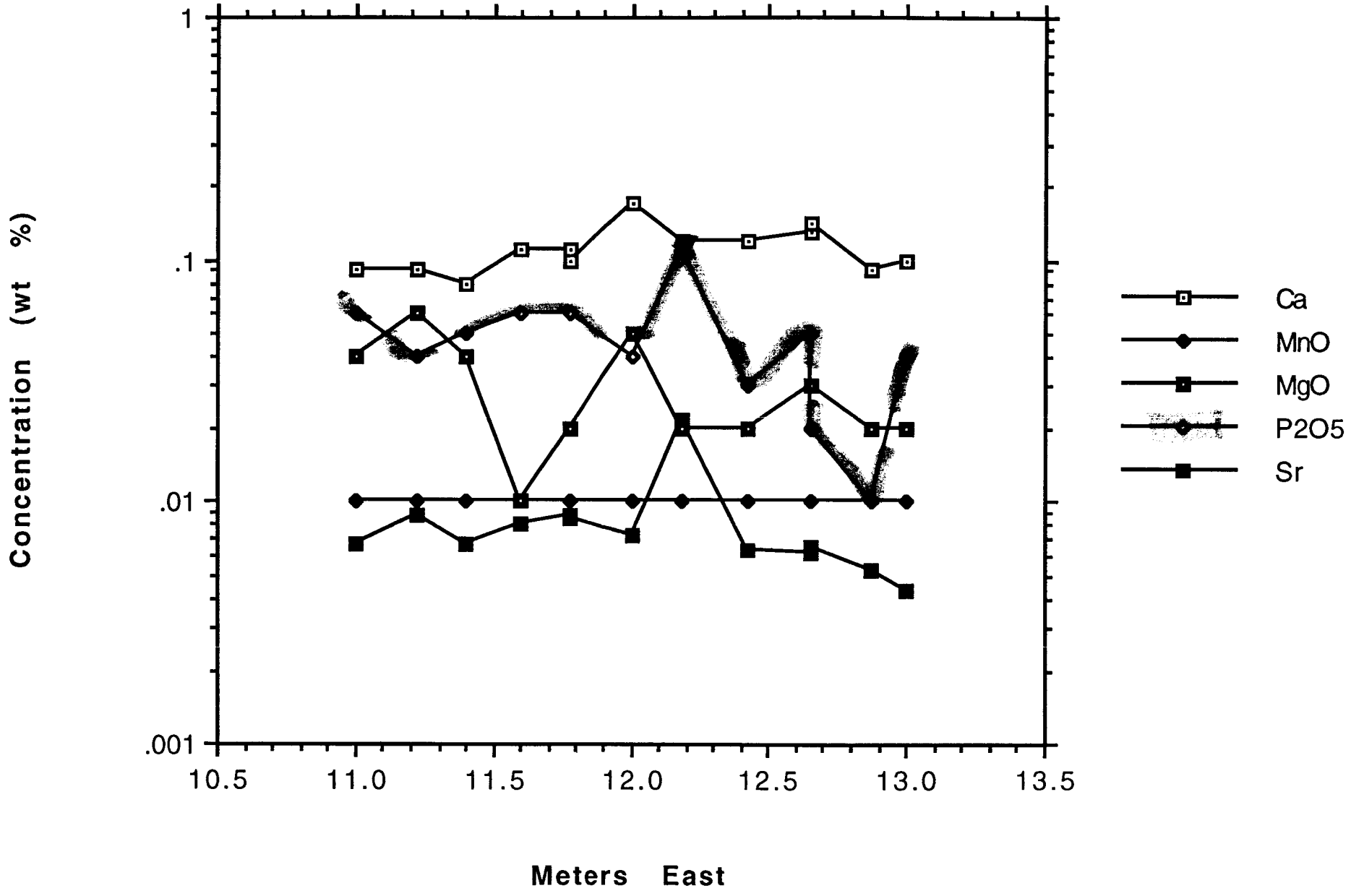
→ decrease in them

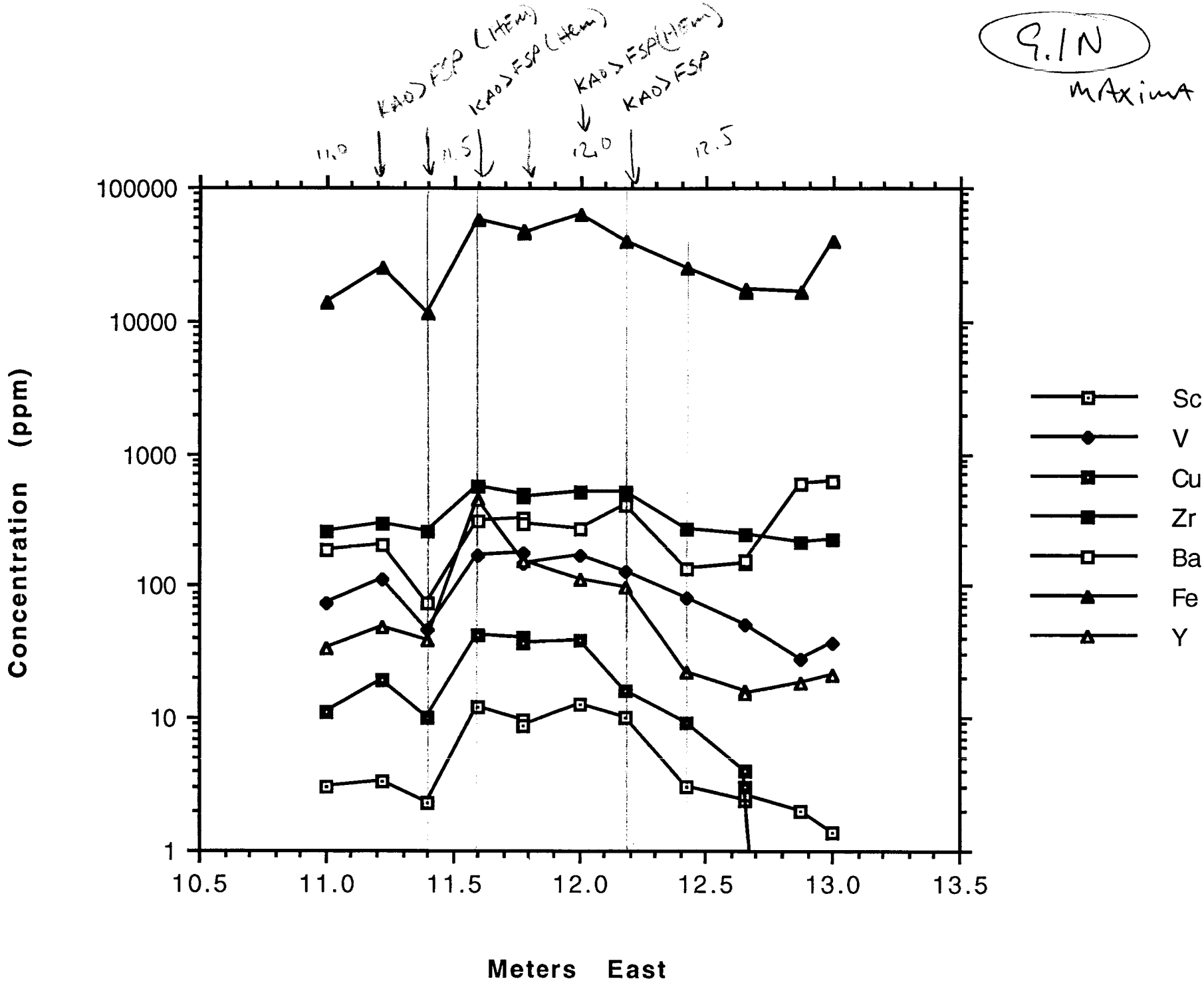
→ increase in others

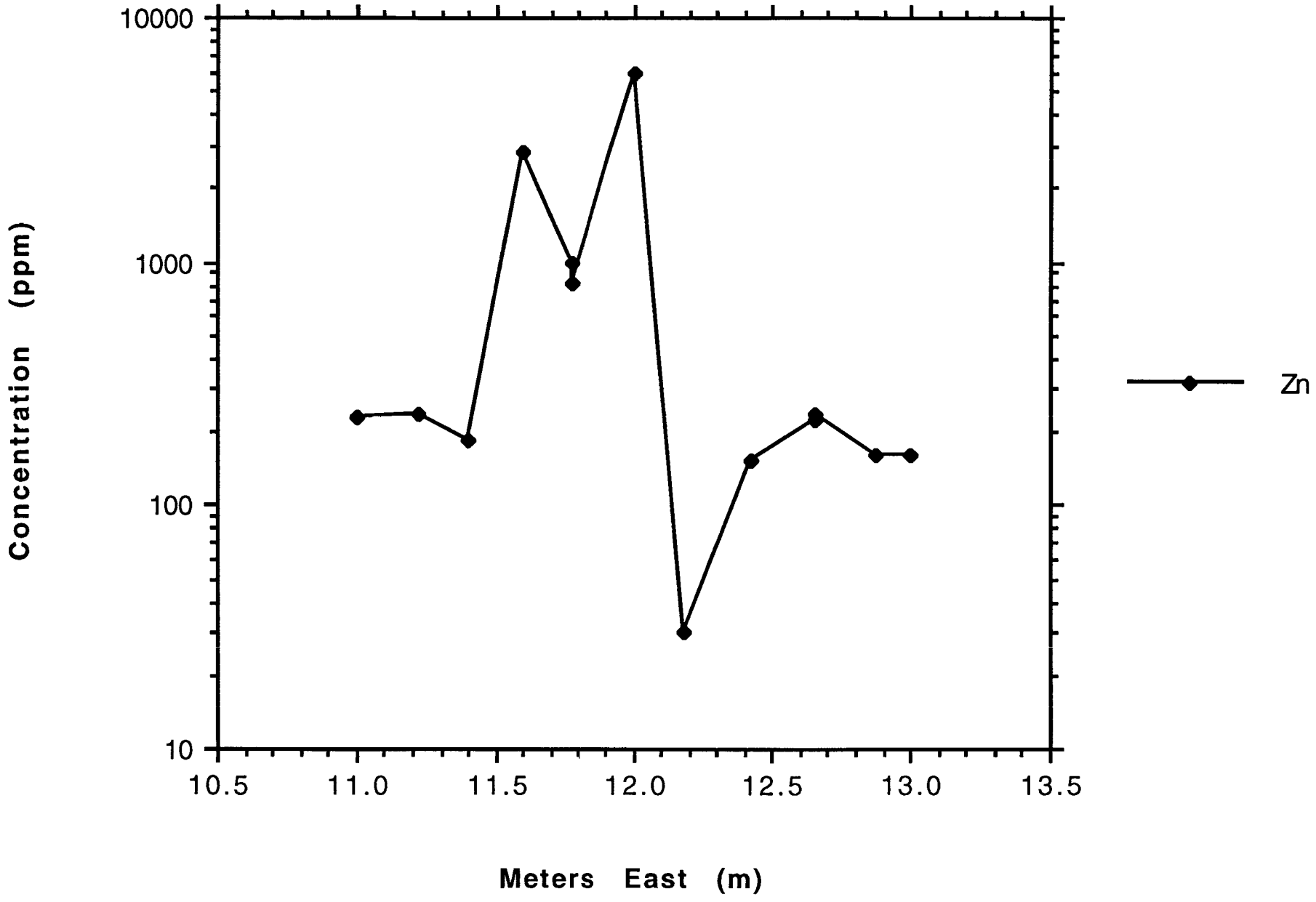
→ NO correspondence to U trend

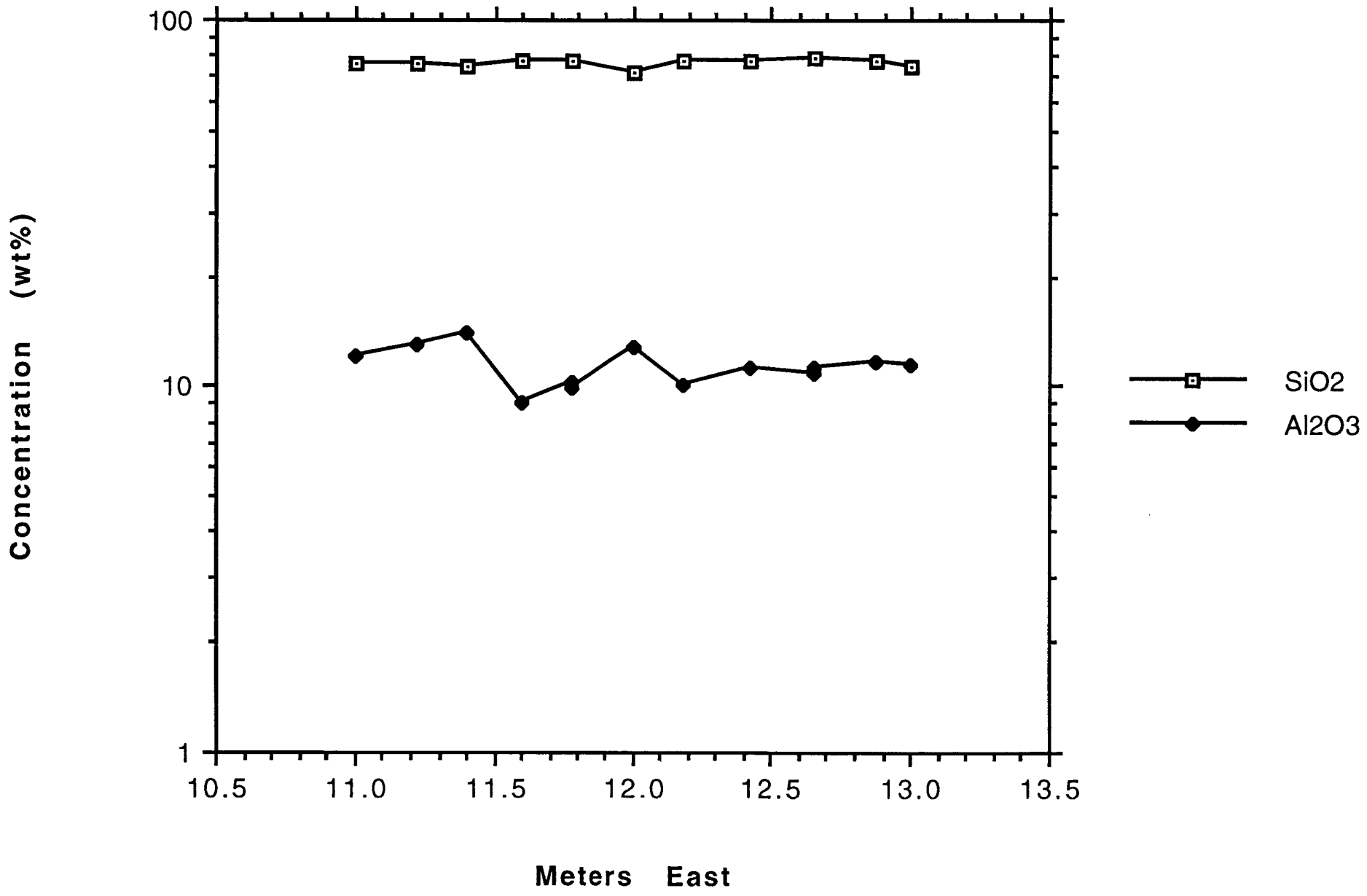
⇒ looks like we have crossed an area of low pH ALT'N (perhaps from sulfide weathering) which alt'd FSP → KAO, sulfides to FeOx, moved some elements out to others in. But occurred significantly, the increased FeOx + KAO prior to U TRANSport across area + DID NOT pref. retain U.


100
10
Concentration (ppm)
10.5
11.0
11.5
12.0
12.5
13.0
13.5
Meters East (m)
Nb


1
.1
.01
.001
10.5
11.0
11.5
12.0
12.5
13.0
13.5
Concentration (wt %)
Meters East
Ca
MnO
MgO
P2O5
Sr


9.1N
maxima
KAO>FSP (HEM)
KAO>FSP (HEM)
KAO>FSP(HEM)
KAO>FSP
11.0
11.5
12.0
12.5
100000
10000
1000
100
10
1
Concentration (ppm)
10.5
11.0
11.5
12.0
12.5
13.0
13.5
Meters East
Sc
V
Cu
Zr
Ba
Fe
Y


10000
1000
100
10
Concentration (ppm)
10.5
11.0
11.5
12.0
12.5
13.0
13.5
Meters East (m)
Zn


100
10
1
Concentration (wt%)
10.5
11.0
11.5
12.0
12.5
13.0
13.5
Meters East
SiO2
Al2O3

Sample	Minerals in order of intensity				
11.00/9.15	Quartz.	Feldspar.	Kaolinite.	Alunite	
11.22/9.07	Quartz.	Kaolinite,	Feldspar.	Alunite.	Hematite
11.40/9.13	Quartz.	Feldspar.	Kaolinite.	Alunite	
11.60/9.12	Quartz.	Kaolinite.	Feldspar.	Alunite.	Hematite
11.78/9.17	Quartz.	Feldspar.	Kaolinite.	Alunite	
12.00/9.09	Quartz.	Kaolinite.	Feldspar.	Alunite.	Hematite
12.18/9.10	Quartz.	Kaolinite.	Feldspar.	Alunite	
12.42/9.14	Quartz.	Feldspar.	Kaolinite.	Alunite	
12.65/9.13	Quartz.	Feldspar.	Kaolinite.	Alunite	
12.87/9.10	Quartz.	Feldspar.	Kaolinite.	Alunite.	Weeksite
13.00/9.20	Quartz.	Feldspar.	Kaolinite.	Alunite.	Weeksite

See E-W Fracture @ 13.5 m N

4.5/13.9	Quartz.	Feldspar.	Kaolinite.	Alunite
4.5/13.86	Quartz.	Feldspar.	Kaolinite.	Alunite
4.5/13.83	Quartz.	Feldspar.	Alunite.	Kaolinite
4.5/13.80	Quartz.	Feldspar.	Alunite.	Kaolinite
4.5/13.77	Quartz.	Feldspar.	Alunite.	Kaolinite
4.5/13.73	Quartz.	Feldspar,	Alunite.	Kaolinite
4.5/13.66	Quartz.	Feldspar,	Alunite,	Kaolinite
4.5/13.62	Quartz.	Feldspar.	Alunite.	Kaolinite

E/W Traverse Summary +10 m

East/West Traverse			Hand specimen identification						
Sample #	U (ppm)	Th (ppm)	U+6	Hematite	Limonite	Kaolinite	Vein	XRD Uranium minerals	XRD Minerals in order of intensity
20.65/7.55	356	26.3	-	-	m	s	-		Quartz (qtz), Kaolinite (kao), Feldspar (feld), alunite (alun)
20.1/7.7	526	46.9	l	m	vs	vs	y		kao, qtz, feld, alun
19.65/7.55	288	42.4	-	vs	l	m	y		kao, qtz, alun
19.0/7.8	334	7.5	-	vs	-	s	y		kao, qtz, alun
18.6/7.7	187	25.6	-	m	l	s	-		kao, qtz, alun, feld
18.35/7.9	222	27.2	-	s	-	s	-		kao, qtz, alun, feld
18.05/7.9	328	39.3	-	vs	l	s	y		kao, qtz, alun, feld
17.4/7.85	148	16.3	-	s	m	m	y		qtz, kao, alun, hematite (hem)
17.0/7.5	115	17.3	-	vs	l	m	-		qtz, kao, feld, alun, hem
16.4/7.9	204	18.8	-	vs	-	m	-		qtz, kao, feld, alun, hem
15.6/7.7	546	24.8	-	vs	-	l	-		qtz, kao, feld, alun, hem
15.0/7.6	426	20.1	-	s	m	m	-	beta-uranophane (B)	qtz, kao, feld, alun, hem, B
14.45/7.95	256	27.2	l	s	s	s	-		qtz, kao, feld, alun
13.95/8.0	1231	10.7	vs	vs	-	l	-	alpha-uranophane (A), B	qtz, kao, hem, A,B, feld
13.5/7.75	309	23.7	-	vs	l	m	-	A, weeksite, B	qtz, kao, feld, hem, A,B, weeksite
12.95/7.9	3908	63.2	l	vs	-	s	-	weeksite	qtz, kao, feld, alun (?), weeksite
12.5/7.75	2908	64.9	vs	-	vs	s	-	A > B	qtz, kaol, feld, hem, A, B
11.9/7.9	23349	23.9	vs	-	s	s	-	A, Weeksite > B	qtz, kao, feld, A, B, hem, weeksite
11.55/7.8	90.6	24.7	-	-	l	m	-		qtz, kao, feld
10.8/7.8	50.4	34	-	l	s	s	-		qtz, kao, feld
10.3/7.7	66.7	25.3	-	-	l	s	-		qtz, feld, kao
9.7/7.35	22.4	29.2	-	vs	-	vs	-		qtz, feld, kao
9.0/7.5	60.3	33.3	-	vs	m	s	-		qtz, feld, kao
8.15/8.0	22.2	35.4	-	l	l	m	-		qtz, feld, kao
7.45/7.9	30.5	30.3	-	-	-	l	-		qtz, feld, kao
6.2/8.1	26	27.8	-	-	-	l	-		qtz, feld, kao
5.2/7.5	23.7	29.9	-	-	-	l	-		qtz, feld, kao
4.0/7.75	27.7	29.3	-	l	l	m	-		qtz, feld, kao
2.55/7.65	29.2	28.8	-	l	l	l	-		qtz, feld, kao
l = light, m = medium, s = strong, vs = very strong, y = present, and - = not present									
	is the visible uranophane position across the traverse.								

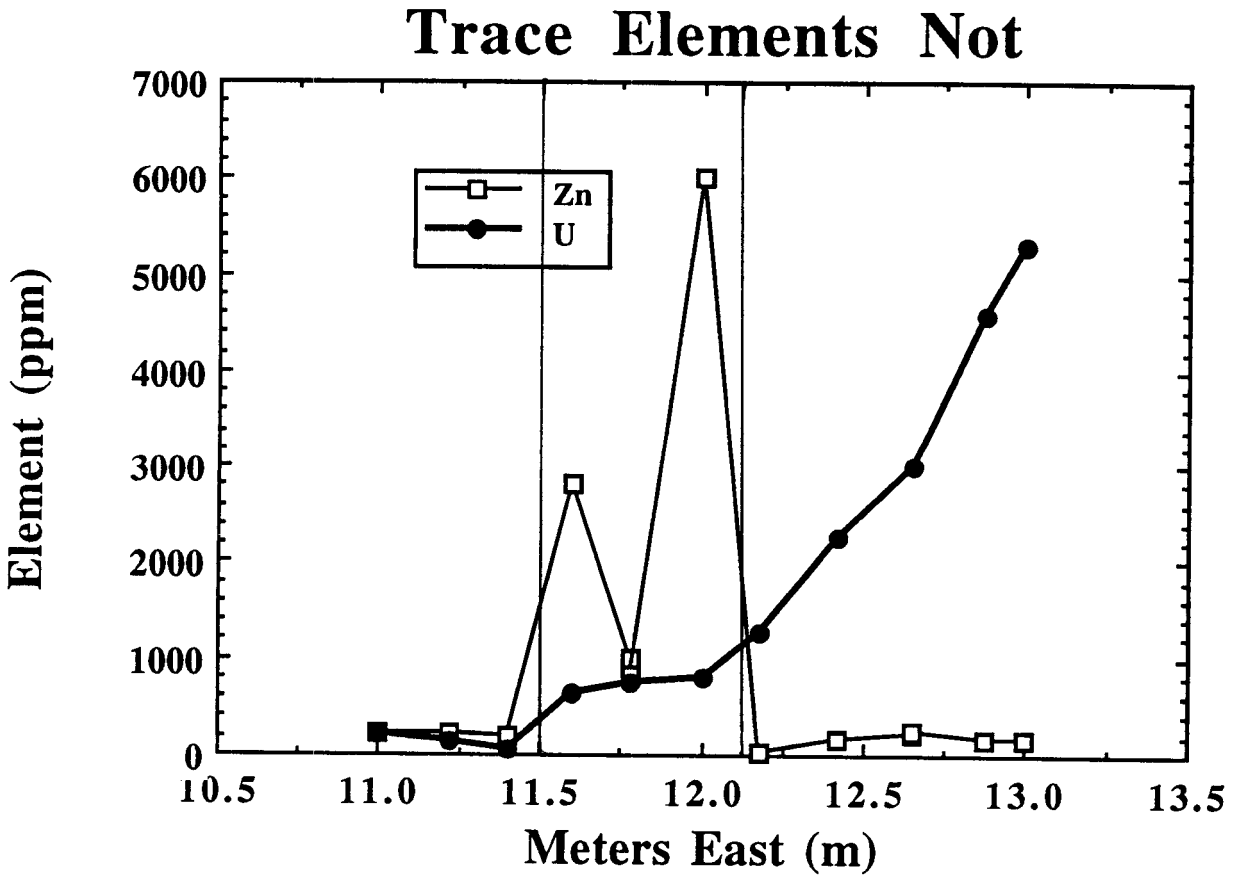
Trace 2m E-W at 9.1 m N

Sample ID	Distance West (m	Sc	V	Cr	Ni	Cu	Zn	Nb	Y	Zr	Ba	Sr	Sr	Ba	Zr	Y
1901	11	3	73	5	1	11	232	35	37.7	257	188	71	67	174	241	33.7
1905	11.22	3.4	114	12	24	19	234	41	52	293	208	94	87	190	274	49
1907	11.4	2.3	46	5	6	10	185	39	38.8	258	75	66	66	75	252	39.2
1909	11.6	12.3	171	4	4	43	2804	32	434	554	310	82	81	308	529	442
1903	11.78	9.6	175	5	2	40	1000	33	158	491	331	93	89	301	434	155
1911	11.78	8.9	149	4	7	37	822	33	145	458	300	84	86	306	445	157
1913	12	12.9	173	4	3	38	6000	30	114	515	265	69	72	269	508	114
1914	12.18	10	128	7	5	16	30	35	94.9	511	410	219	221	409	500	95.2
1910	12.42	3	79	42	70	9	152	30	21	275	137	62	64	143	267	21.7
1908	12.65	2.4	52	16	26	4	226	31	15.9	248	145	63	61	138	246	16
1915	12.65	2.6	51	6	3	3	236	31	15.9	248	153	68	65	141	233	15.6
1906	12.87	2	28	10	6	0	161	24	19.1	213	586	52	52	567	214	18.5
1902	13	1.4	36	8	1	0	159	20	20.5	222	616	42	43	633	221	21.5

Major

2m E-W at 9.1 m N

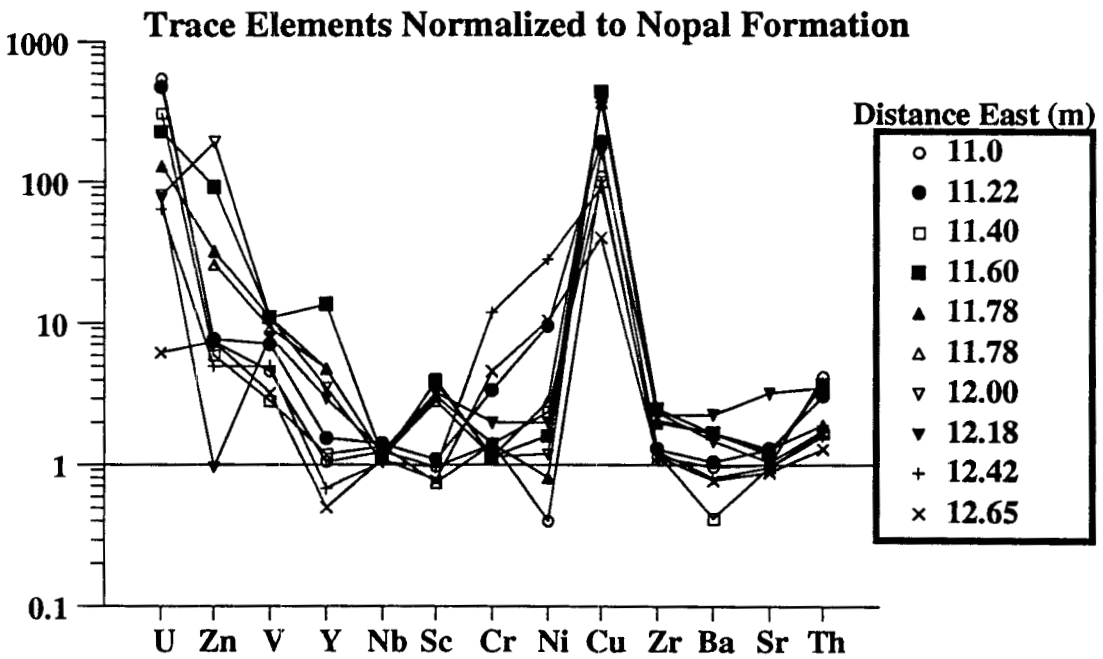
Sample ID	Distance West (m	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Sr	Ba	Zr	Y
1901	11	76.59	0.24	12.02	1.34	0.01	0.04	0.09	0.28	4.5	0.06	3.5	98.66	67	174	241	33.7
1905	11.22	76.31	0.27	13.04	2.45	0.01	0.06	0.09	0.16	3.19	0.04	4.53	100.1	87	190	274	49
1907	11.4	73.99	0.26	14.1	1.14	0.01	0.04	0.08	0.3	5.18	0.05	4.03	99.17	66	75	252	39.2
1909	11.6	77.97	0.2	8.97	5.66	0.01	0.01	0.11	0.13	2.27	0.06	4	99.38	81	308	529	442
1903	11.78	76.86	0.21	10.22	4.69	0.01	0.02	0.11	0.15	2.99	0.06	3.82	99.14	89	301	434	155
1911	11.78	77.47	0.21	9.92	4.61	0.01	0.02	0.1	0.15	2.89	0.06	3.79	99.24	86	306	445	157
1913	12	71.94	0.18	12.78	6.19	0.01	0.05	0.17	0.11	1.98	0.04	5.84	99.29	72	269	508	114
1914	12.18	77.27	0.22	10.07	3.95	0.01	0.02	0.12	0.15	2.83	0.11	4.64	99.39	221	409	500	95.2
1910	12.42	77.46	0.24	11.17	2.53	0.01	0.02	0.12	0.21	3.47	0.03	4.02	99.27	64	143	267	21.7
1908	12.65	79.08	0.24	10.88	1.62	0.01	0.03	0.13	0.23	4.02	0.05	3.49	99.77	61	138	246	16
1915	12.65	78.57	0.24	11.23	1.71	0.01	0.03	0.14	0.24	4.16	0.02	3.49	99.82	65	141	233	15.6
1906	12.87	76.92	0.22	11.72	1.63	0.01	0.02	0.09	0.3	4.59	0.01	3.27	98.78	52	567	214	18.5
1902	13	74.93	0.22	11.45	3.91	0.01	0.02	0.1	0.32	4.84	0.04	3.29	99.12	43	633	221	21.5


Trace Elements Not
Zn
U
Element (ppm)
7000
6000
5000
4000
3000
2000
1000
0
10.5
11.0
11.5
12.0
12.5
13.0
13.5
Meters East (m)

PERIODIC TABLE OF THE ELEMENTS

Table of Selected Radioactive Isotopes

| | | |



English,

Just for kicks

These samples have been normalized to unaltered Nopal Formation NOP-ECP-1

Note Cu set at 0.1 for NOP-ECP-1 analyzed as 0!