

GEOKJEMISK KARTLEGGING I
NORDLAND OG TROMS.
ICAP-ANALYSE AV LØSMASSENES FINFRAKSJON.
NGU-rapport 87.142.



Norges geologiske undersøkelse

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Sammendrag: Rapporten omhandler ICAP-analysen av løsmassenes finfraksjon.			
Emneord	Geokjemi		

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HNO₃-løselig Al-innhold i løsmassenes finfraksjon
HNO₃-løselig Ca-innhold i løsmassenes finfraksjon
HNO₃-løselig Fe-innhold i løsmassenes finfraksjon
HNO₃-løselig K -innhold i løsmassenes finfraksjon
HNO₃-løselig Mg-innhold i løsmassenes finfraksjon
HNO₃-løselig Mn-innhold i løsmassenes finfraksjon
HNO₃-løselig Na-innhold i løsmassenes finfraksjon
HNO₃-løselig P -innhold i løsmassenes finfraksjon
HNO₃-løselig Ti-innhold i løsmassenes finfraksjon
HNO₃-løselig Ag-innhold i løsmassenes finfraksjon
HNO₃-løselig Ba-innhold i løsmassenes finfraksjon
HNO₃-løselig Ce-innhold i løsmassenes finfraksjon
HNO₃-løselig Co-innhold i løsmassenes finfraksjon
HNO₃-løselig Cr-innhold i løsmassenes finfraksjon
HNO₃-løselig Cu-innhold i løsmassenes finfraksjon
HNO₃-løselig La-innhold i løsmassenes finfraksjon
HNO₃-løselig Li-innhold i løsmassenes finfraksjon
HNO₃-løselig Mo-innhold i løsmassenes finfraksjon
HNO₃-løselig Ni-innhold i løsmassenes finfraksjon
HNO₃-løselig Pb-innhold i løsmassenes finfraksjon
HNO₃-løselig Sc-innhold i løsmassenes finfraksjon
HNO₃-løselig Sr-innhold i løsmassenes finfraksjon
HNO₃-løselig V -innhold i løsmassenes finfraksjon
HNO₃-løselig Zn-innhold i løsmassenes finfraksjon
HNO₃-løselig Zr-innhold i løsmassenes finfraksjon

Vedlegg 3. Geokjemiske anomalikart, 90 prosentil.
Be,Ce,Cu,La,Mg,Mo,Pb,Zn og Sc.

7. LAGRING AV DATA

1. INNLEDNING

Norges geologiske undersøkelse utfører i tidsrommet 1986-1988 en regional kartlegging i Nordland og Troms i samarbeid med de respektive fylkeskommunene. Plan for kartleggingen er offentliggjort i NGU-rapport 86.204. Statusrapport pr. 21.11.86 er dessuten gitt i NGU-rapport 86.214.

Prøvetaking av løsmasser, bekkesedimenter og bekkevann (overflatevann) ble fullført sommeren 1986. Totalt ble det samlet inn ca. 20 tonn materiale fra 1310 lokaliteter.

Denne rapporten beskriver resultatet av ICAP-analysen av løsmassenes finfraksjon.

2. METODER

Feltarbeid

Prøvetettheten ved den geokjemiske kartleggingen i Nordland og Troms er på ca. 1 prøve per 40 km².

Løsmassene ble prøvetatt i veiskjæringer eller på 0.6 m's dybde i jordprofilens C-horisont. Prøvene ble fylt i lerretsposer og merket MR pluss prøvenummer.

Prøvepreparering

Prøvene ble behandlet ved NGUs laboratorium i Trondheim. Etter tørking ble det siktet ut ca. 50 g materiale med kornstørrelse mindre enn 0.06 mm. Dette materialet er benyttet ved den kjemiske analyse. Det øvrige materialet er lagret ved NGU.

Prøvene ble randomisert ved hjelp av et edb-program før preparering og analysering. Prøvene er dermed analysert i tilfeldig rekkefølge. Dette er gjort for å eliminere virkningen av eventuelle systematiske feil eller forurensninger som måtte oppstå under analysearbeidet.

Oppslutning

1.0 g materiale ble behandlet med 5 ml HNO₃ 1:1 i 3 timer ved 110°C. Oppløsningen ble fortynnet til 20.3 ml og sentrifugert. Den klare løsningen ble oppbevart på små plastflasker, og senere analysert.

Analyse

Ved hjelp av ICAP-metoden (Inductively coupled argon plasma spectrometry) ble det syreløselige innholdet av 29 grunnstoffer bestemt. Analyseinstrumentet er et plasmaspæktrometer med betegnelsen Jarrell-Ash 975 ICAP Atom Comp. (Ødegård 1983).

Hovedelementer:

Al (aluminium)	Mg (magnesium)	P (fosfor)
Ca (kalsium)	Mn (mangan)	Si (silisium)
Fe (jern)	Na (natrium)	Ti (titan)
K (kalium)		

Sporelementer:

Ag (sølv)	Cr (krom)	Pb (bly)
B (bor)	Cu (kopper)	Sc (scandium)
Ba (barium)	La (lanthan)	Sr (strontium)
Be (beryllium)	Li (lithium)	V (vanadium)
Cd (kadmium)	Mo (molybden)	Zn (sink)
Ce (cerium)	Ni (nikkel)	Zr (zirkonium)

Databehandling

Koordinatfesting av alle prøvelokalitetene, som var markert på kart i målestokk 1:250 000 ble utført i UTM-nettets sone 33 ved hjelp av digitaliseringsutstyr (Calcomp 9100) og registrert på NGUs datamaskin (HP-3000).

Geokjemiske rådata- og anomalikart er laget ved hjelp av en edb styrt plotter(HP7585B) i målestokk 1:3 000 000.

Det er utarbeidet frekvensfordelingsdiagram for de forskjellige grunnstoffene.

3. RESULTATER

Kvalitetskontroll

Det er tatt 34 duplikatprøver av løsmassens finfraksjon. Disse utgjør 3% av alle prøvene. Figur 4 viser plott av duplikatprøvene for de enkelte grunnstoffer. Plottene viser at reproduserbarheten for prøvetaking og analyse av de enkelte element varierer noe, men er stort sett tilfredstillende. Reproduserbarheten er spesielt dårlig for Si, B, Cd og Be.

Tabeller og kart

Analyseresultatene er gitt i vedlegg 1. Geokjemiske rådatakart finnes i vedlegg 2 og geokjemiske anomalikart i vedlegg 3. En statistisk oversikt over analyseresultatene er gitt i tabell 1.

Kommentarer

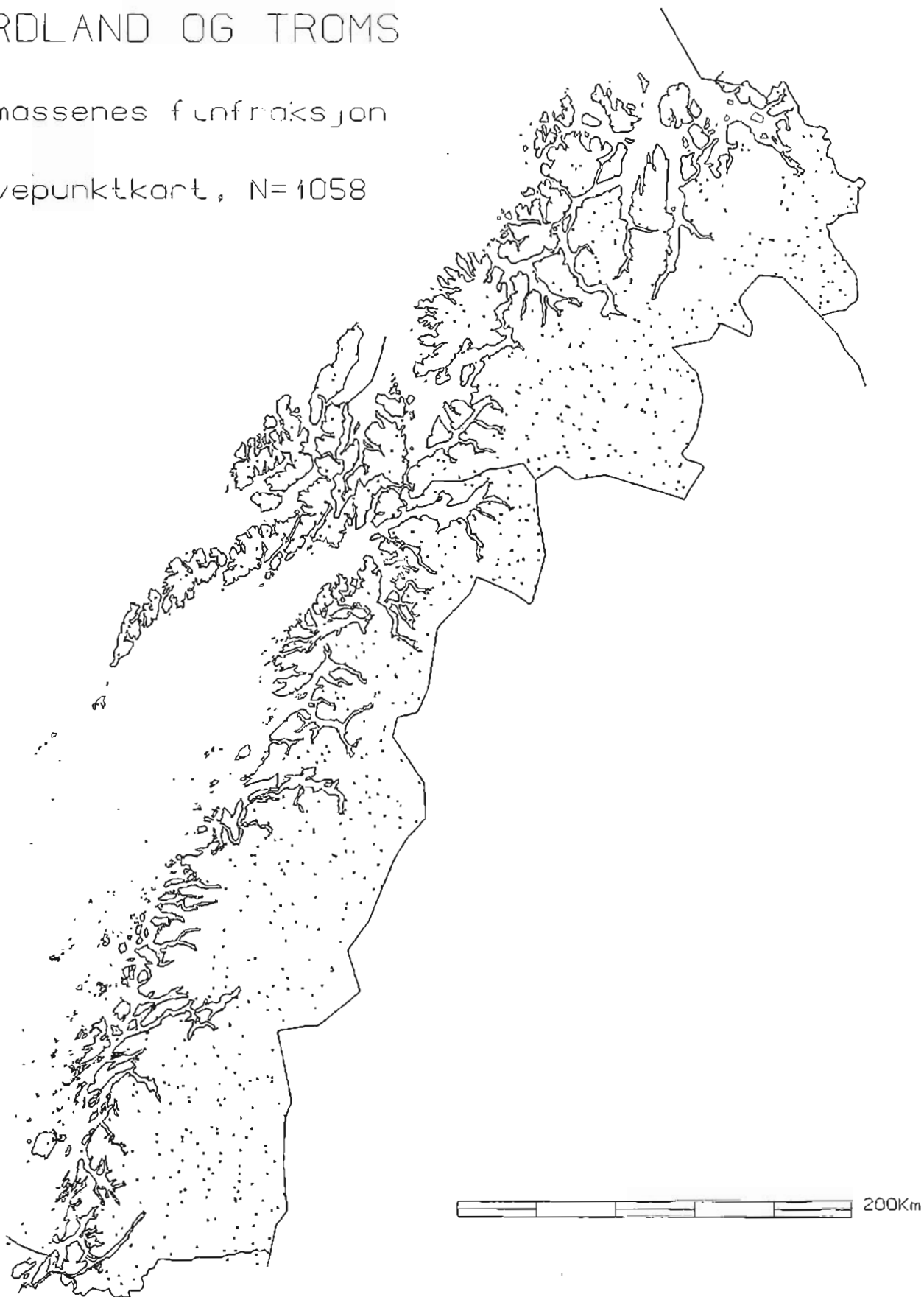
Analyseverdiene for Si, B, Cd og Be er forkastet ved kvalitetskontrollen. Disse elementene er derfor ikke kartfremstilt.

4. FIGURER

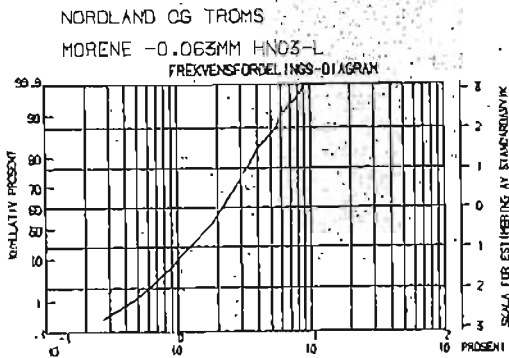
NORDLAND OG TROMS

Løsmassenes f unfraksjon

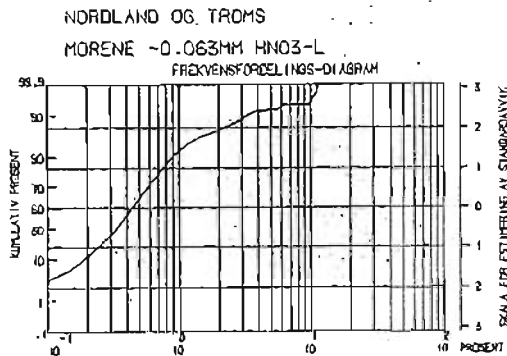
Prøvepunktkart, N=1058



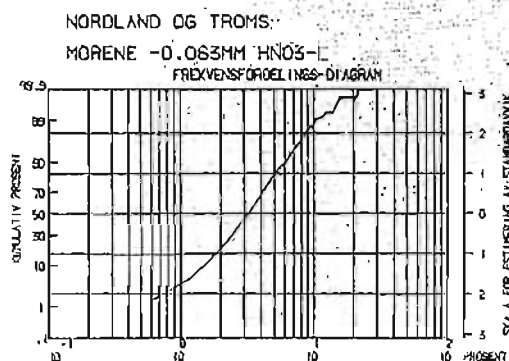
Figur 1. Prøvepunktkart.



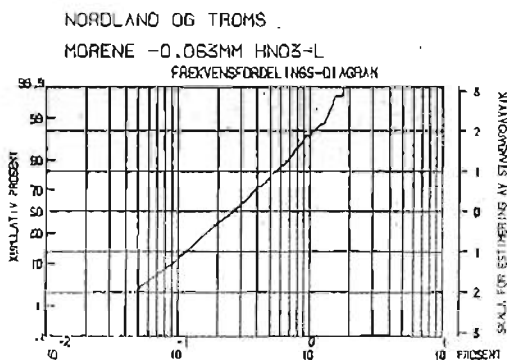
AL
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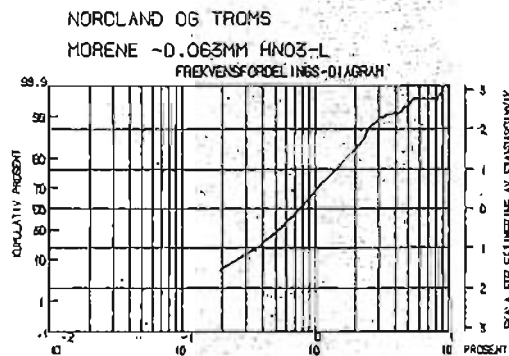
CA
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MIN = .02
MAX = 14.50
 \bar{x} = .53



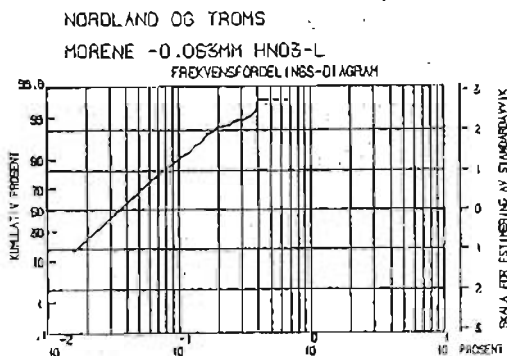
FE
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MAX = 27.67
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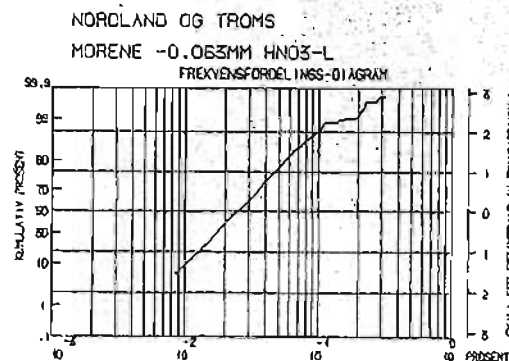
K
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MAX = 1.91
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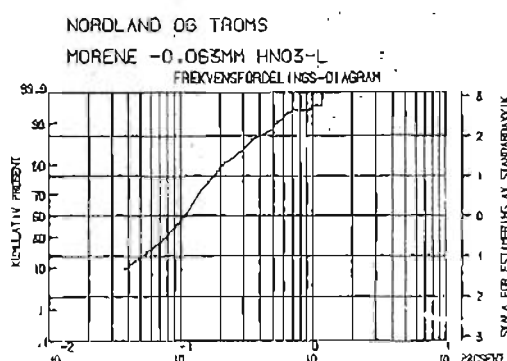
MG
N = 1058
MIN = .01
MAX = 8.68
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MN
N = 1058
MIN = .061
MAX = 7.40
 \bar{x} = .061



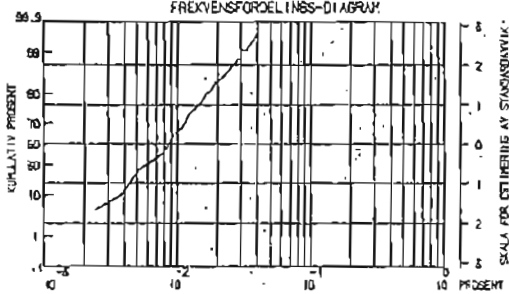
NA
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MIN = .002
MAX = .320
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P
N = 1058
MIN = .002
MAX = 1.750
 \bar{x} = .125

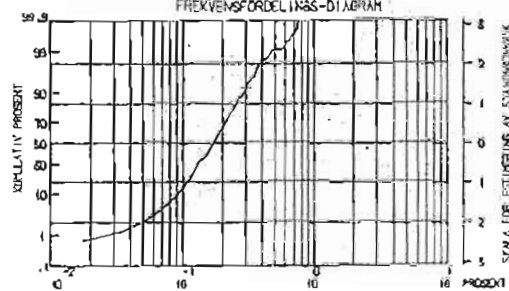
Figur 2. Frekvensfordelingsdiagram.

NORDLAND OG TROMS
 MORENE -0.063MM HNO3-L



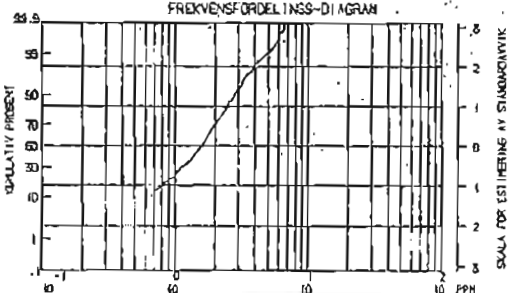
SI
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 MIN= .001
 MAX= .071
 \bar{x} = .009

NORDLAND OG TROMS
 MORENE -0.063MM HNO3-L



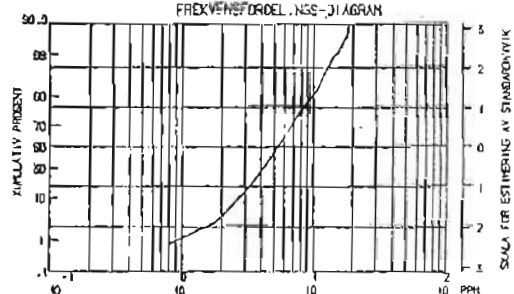
T1
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NORDLAND OG TROMS
 MORENE -0.063MM HNO3-L



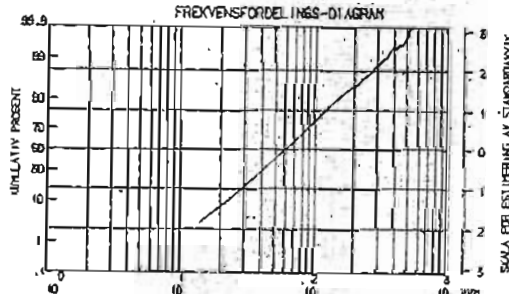
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NORDLAND OG TROMS
 MORENE -0.063MM HNO3-L



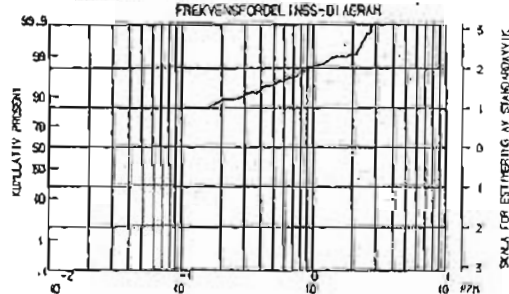
PPM B
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 MAX= 25.20
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NORDLAND OG TROMS
 MORENE -0.063MM HNO3-L



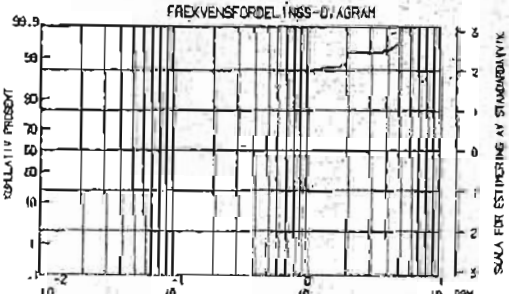
PPM BA
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 MAX= 542.0
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NORDLAND OG TROMS
 MORENE -0.063MM HNO3-L



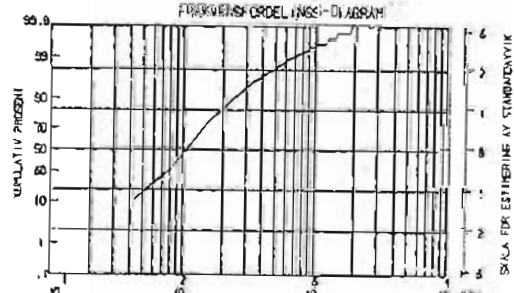
PPM BE
 N= 1058
 MIN= .10
 MAX= 2.60
 \bar{x} = .17

NORDLAND OG TROMS
 MORENE -0.063MM HNO3-L



PPM CD
 N= 1058
 MIN= 1.60
 MAX= 6.20
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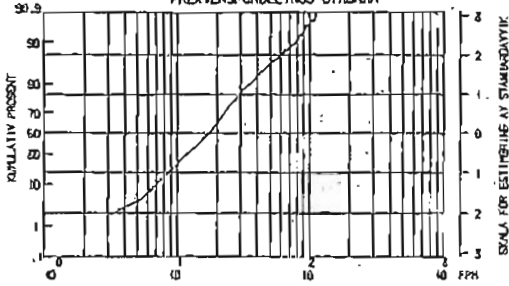
NORDLAND OG TROMS
 MORENE -0.063MM HNO3-L



PPM CE
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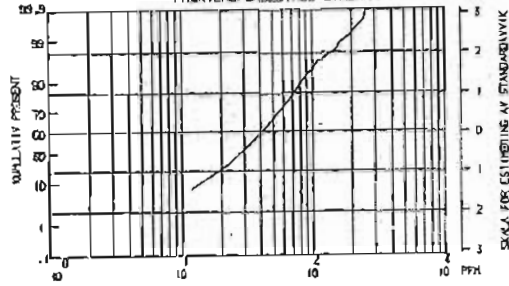
Figur 2. forts

NORLAND OG TROMS
 MORENE -0.063MM HN03-L
 FREKVENSFORDELINGS-DIAGRAM



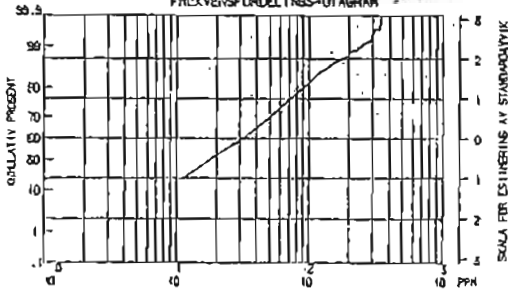
PPM CO
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 MAX= 110.8
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NORLAND OG TROMS
 MORENE -0.063MM HN03-L
 FREKVENSFORDELINGS-DIAGRAM



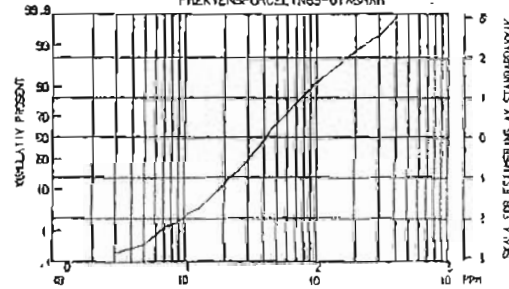
PPM CR
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NORLAND OG TROMS
 MORENE -0.063MM HN03-L
 FREKVENSFORDELINGS-DIAGRAM



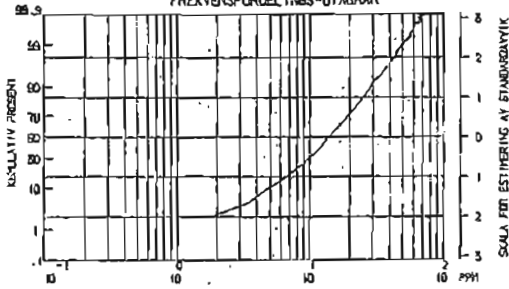
PPM CU
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NORLAND OG TROMS
 MORENE -0.063MM HN03-L
 FREKVENSFORDELINGS-DIAGRAM



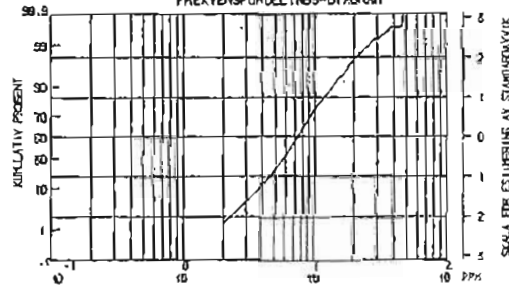
PPM LA
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NORLAND OG TROMS
 MORENE -0.063MM HN03-L
 FREKVENSFORDELINGS-DIAGRAM



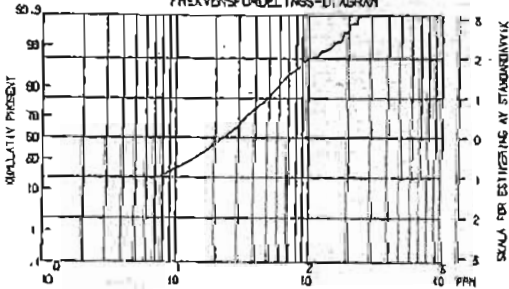
PPM LI
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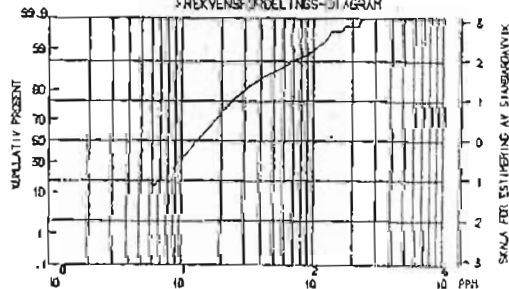
PPM MO
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 MAX= 51.80
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NORLAND OG TROMS
 MORENE -0.063MM HN03-L
 FREKVENSFORDELINGS-DIAGRAM



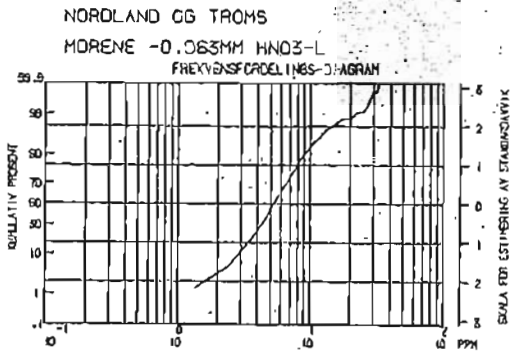
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NORLAND OG TROMS
 MORENE -0.063MM HN03-L
 FREKVENSFORDELINGS-DIAGRAM



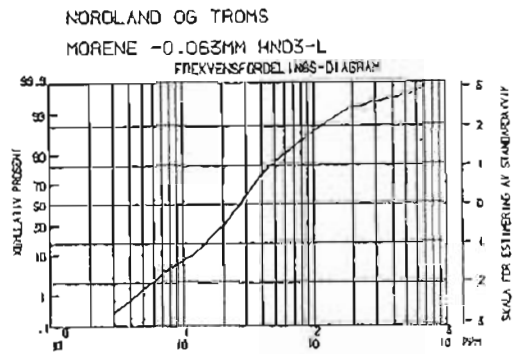
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Figur 2. forts.



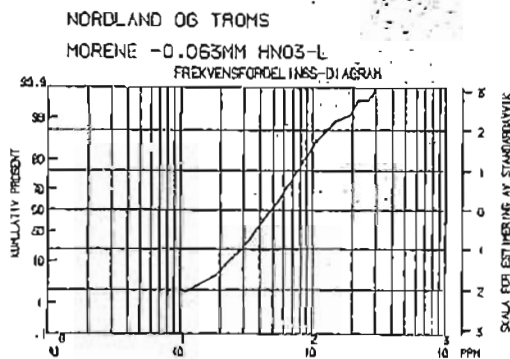
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 MAX= 52.40
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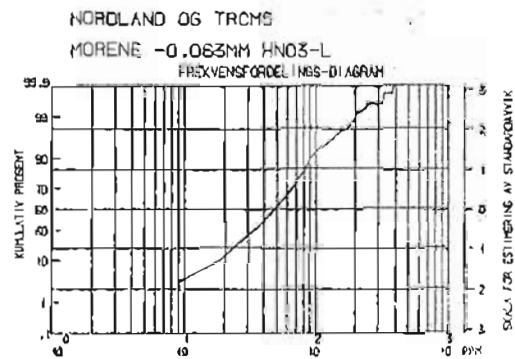
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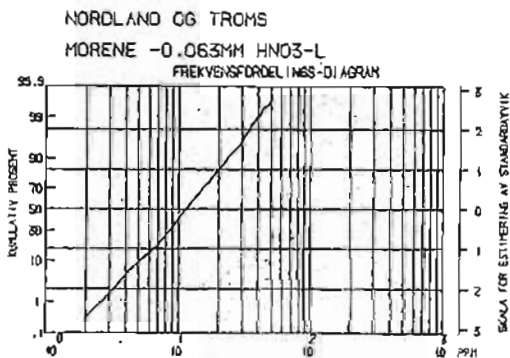
PPM V

N= 1058
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 MAX= 369.8
 \bar{x} = 53.1



PPM ZN

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 MAX= 455.00
 \bar{x} = 54.81



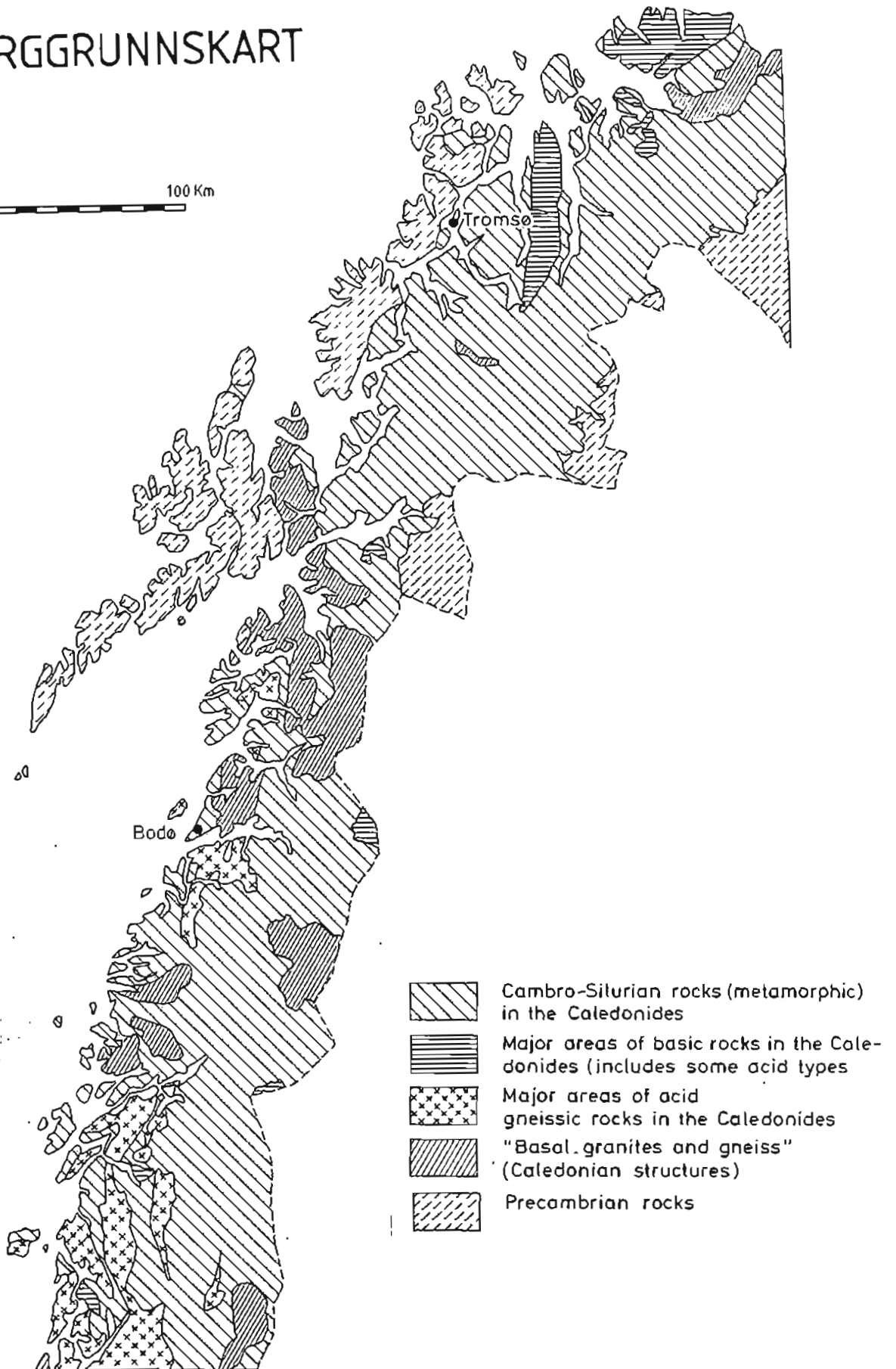
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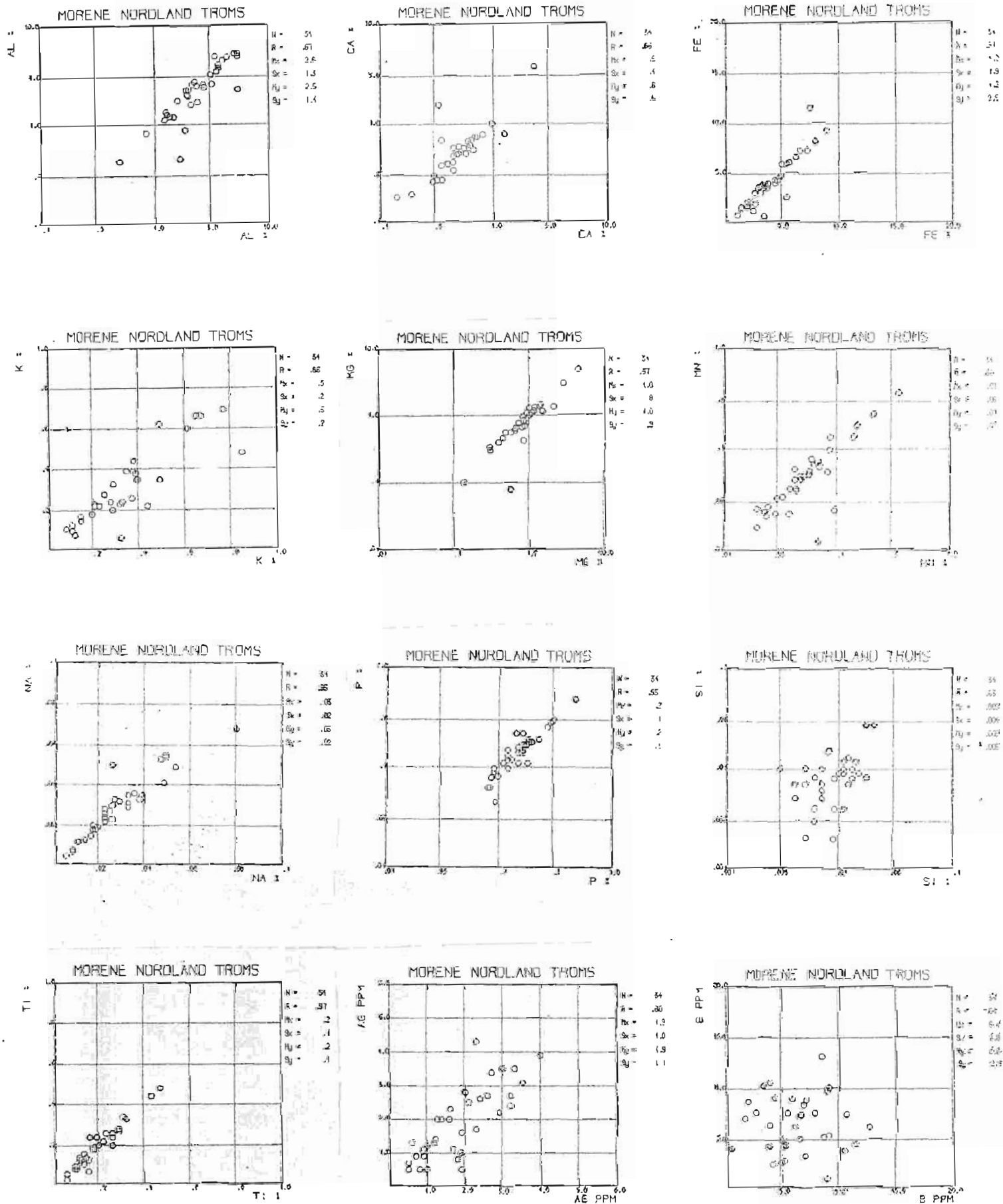
Figur 2. forts.

BERGGRUNNSKART

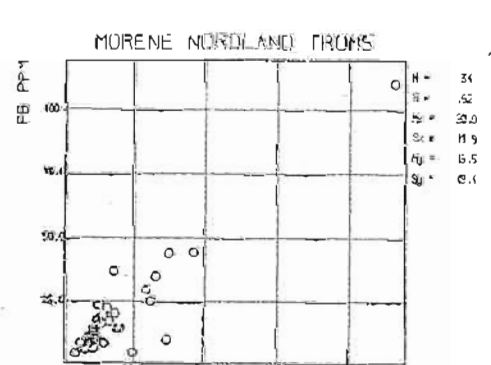
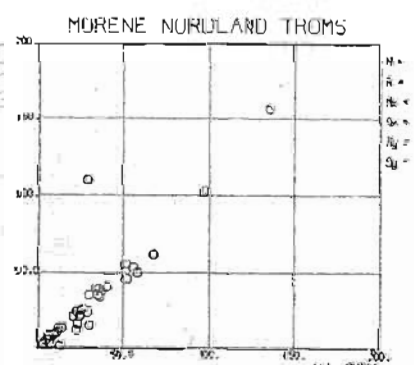
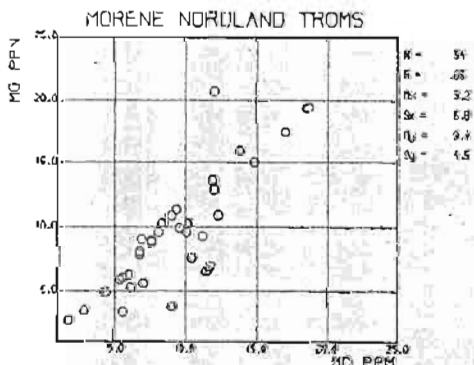
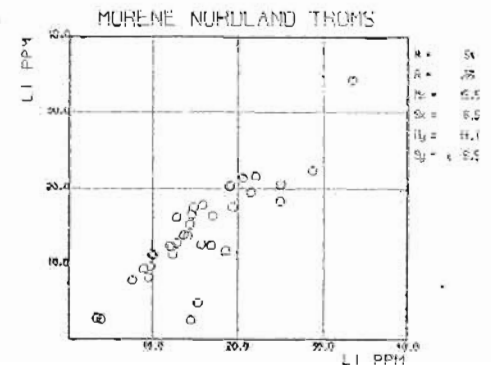
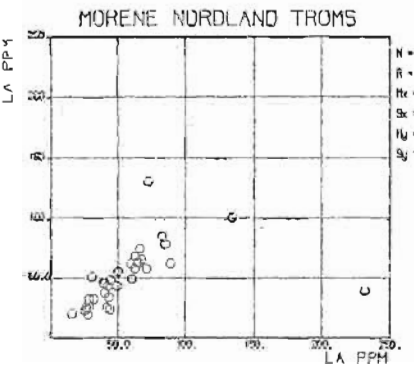
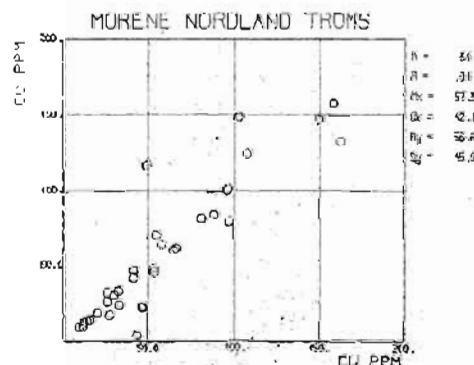
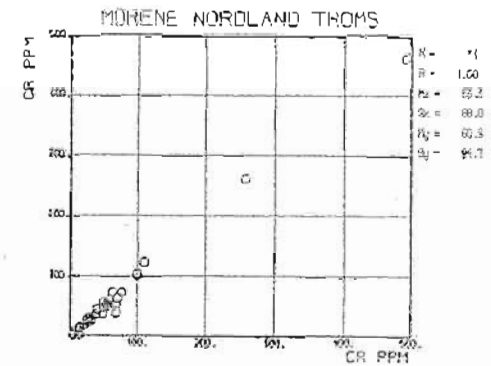
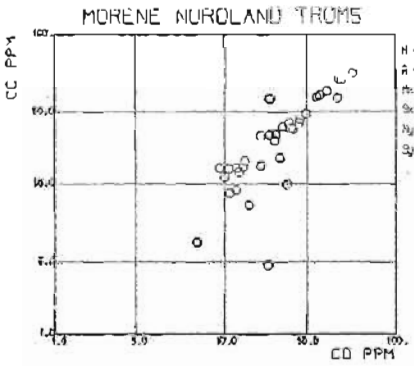
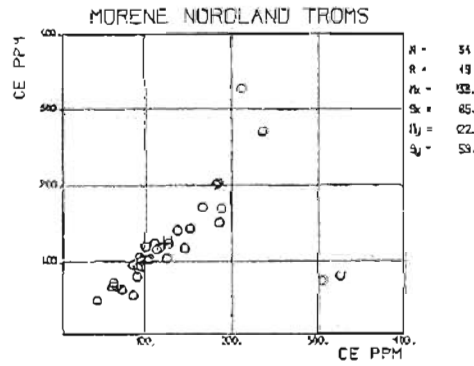
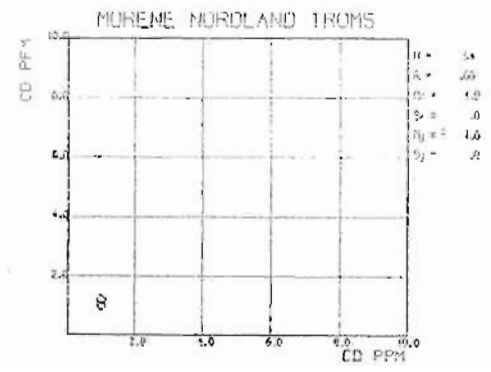
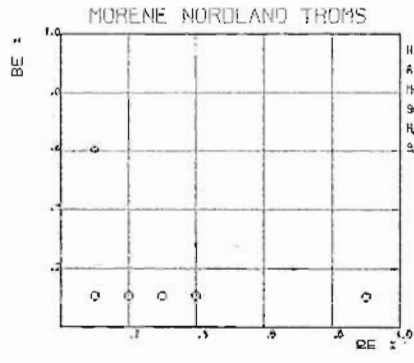
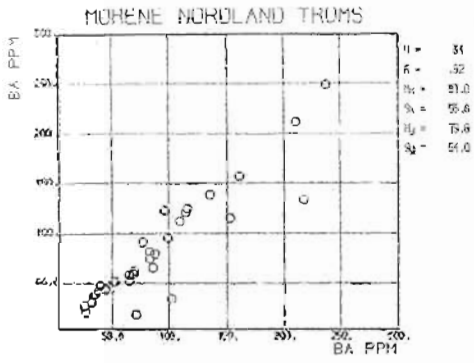
0 100 Km



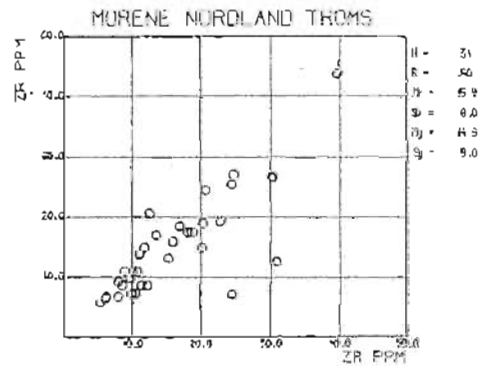
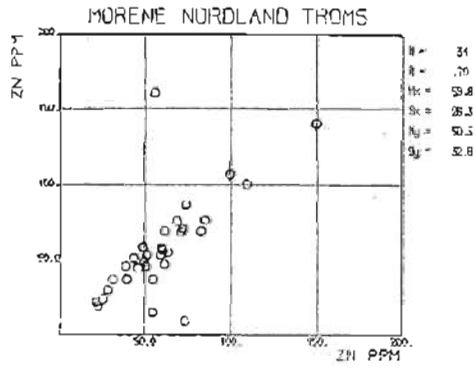
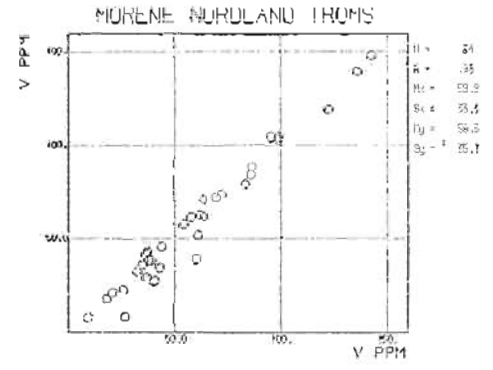
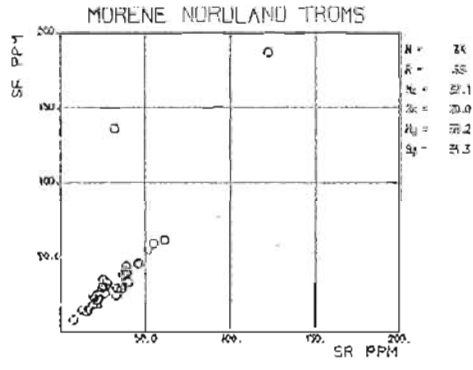
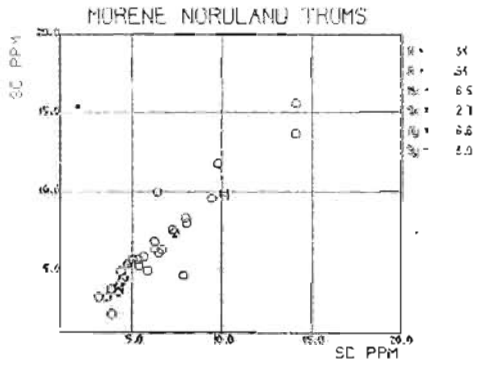
Figur 3. Geologisk oversiktskart.



Figur 4. Scatter diagram.



Figur 4. forts.



Figur 4. forts.

5. TABELLER

Tabell 1. Konsentrasjonen av 25 HNO₃-løselige bestanddeler i løsmassenes finfraksjon, Nordland og Troms. Antall observasjoner er 1058.

ELEMENT		MIN	MAKS	GJ.SN.	MEDIAN	STD. AVVIK
AL	%	.06	10.67	2.30	2.16	1.15
CA	%	.02	14.50	.59	0.45	.88
FE	%	.06	27.67	3.55	3.15	2.13
K	%	.01	1.91	.33	0.26	.26
MG	%	.01	8.88	.91	0.76	.75
MN	%	.001	.74	.05	0.04	.06
NA	%	.002	.32	.03	0.02	.03
P	%	.002	1.75	.13	0.11	.11
TI	%	.001	.82	.18	0.17	.09
AG	PPM	.5	8.3	1.7	1.5	.91
BA	PPM	3.3	542.0	77.2	59.1	64.64
CE	PPM	5.3	1900.0	135.0	104.5	139.03
CO	PPM	1.0	110.8	19.8	16.9	13.72
CR	PPM	2.0	493.0	46.9	41.2	34.51
CU	PPM	1.6	466.1	43.5	31.3	45.15
LA	PPM	2.5	2600.0	53.8	41.2	88.60
LI	PPM	.4	75.1	15.9	13.8	10.11
MO	PPM	1.0	51.8	8.3	7.2	4.87
NI	PPM	2.0	272.1	29.1	23.0	27.44
PB	PPM	5.0	473.2	17.7	13.1	22.24
SC	PPM	.3	52.4	5.9	5.3	3.59
SR	PPM	2.2	1100.0	34.9	26.6	51.77
V	PPM	3.4	369.8	53.1	47.4	30.69
ZN	PPM	.1	455.0	54.8	47.6	39.89
ZR	PPM	.8	57.5	13.2	11.2	7.74

Table with columns: ID, Name, 28 numerical values. The table lists data for 699 entries, starting from ID 2290 and ending at 2290 693. Each row contains a name followed by 28 numerical values, with some values being negative.

Table with 34 columns: Prusj. nr., Proeve nr., X-koord., Y-koord., Al, Ca, Fe, K, Mg, Mn, Na, P, Si, Ti, Rb, D, Ba, Be, Cd, Ce, Co, Cr, Cu, La, Li, Nc, Ni, Pb, Se, Sr, V, Zn, Zr. It contains 30 rows of data, each representing a sample with various chemical and isotopic measurements.

2290	1691	365.717	7216.220	3.000	.410	5.620	.220	.700	.028	.033	.130	.006	.310	2.1	3.3	43.8	.1	1.0	73.4	16.6	74.4	23.1	32.8	10.7	9.5	19.8	11.9	5.5	37.4	52.0	29.8	12.6
2290	1692	445.198	7269.935	3.010	1.090	5.580	.094	.710	.120	.012	.140	.006	.180	1.8	4.6	75.6	.1	1.0	107.0	31.5	55.3	70.3	117.8	23.7	8.3	65.8	25.7	11.1	169.2	40.0	46.3	21.0
2290	1693	.000	.000	2.620	.380	2.740	.250	.880	.030	.042	.086	.009	.150	1.5	6.4	57.5	.1	1.0	115.2	15.4	50.3	55.5	37.4	16.8	6.6	32.5	8.0	4.6	17.8	43.9	42.8	11.1
2290	1802	.000	.000	1.390	.440	1.860	.270	.610	.015	.022	.150	.004	.120	1.1	5.1	45.5	.1	1.0	70.1	7.5	36.0	9.2	30.0	13.7	7.1	11.9	7.8	4.2	22.2	38.3	28.0	10.9
2290	1803	.000	.000	1.990	.510	2.460	.370	.670	.026	.023	.200	.015	.140	1.5	6.6	70.2	.1	1.0	94.3	11.0	37.5	14.3	36.7	14.2	6.1	13.7	5.2	4.6	21.0	41.8	37.7	11.3
2290	1804	.000	.000	3.010	.480	3.830	.670	1.330	.028	.017	.100	.009	.270	1.8	2.5	91.9	.2	1.0	107.6	19.5	63.1	67.6	52.8	24.9	9.4	37.3	23.4	5.5	17.6	66.1	67.3	12.7
2290	1805	.000	.000	2.860	.420	4.020	.750	1.470	.039	.029	.076	.010	.240	2.0	7.6	125.0	.1	1.0	114.2	24.0	60.2	55.7	51.5	28.1	11.0	58.0	23.8	6.4	21.3	64.4	97.8	22.2
2290	1806	.000	.000	1.210	.510	1.440	.230	.640	.020	.037	.140	.016	.110	.5	3.8	51.9	.3	1.0	58.6	8.1	41.2	6.4	29.4	10.1	3.7	13.1	6.1	4.0	36.8	28.4	30.8	9.2
2290	1807	.000	.000	2.340	.120	4.530	.220	.330	.012	.013	.050	.002	.200	1.6	3.6	47.3	.1	1.0	168.1	9.4	29.6	13.6	87.4	7.9	7.8	8.8	18.3	4.4	12.1	46.6	19.4	13.5
2290	1808	.000	.000	4.200	.980	1.680	.380	.880	.028	.220	.056	.027	.110	1.2	6.8	118.3	1.1	1.0	88.7	11.1	61.6	14.4	29.9	24.3	5.1	37.5	18.6	5.0	133.4	44.1	44.2	11.3
2290	1809	.000	.000	1.140	.410	1.810	.280	.500	.017	.025	.110	.013	.160	1.1	4.0	60.3	.1	1.0	55.8	4.3	21.0	8.2	42.3	13.3	4.9	9.0	10.3	2.8	43.1	30.8	30.9	8.9
2290	1810	.000	.000	3.440	.570	3.210	.660	1.300	.042	.062	.062	.010	.210	1.8	11.5	282.7	.2	1.0	113.5	18.2	71.8	39.1	45.3	22.3	5.4	62.5	15.1	7.2	48.5	62.4	59.8	20.9
2290	1811	670.575	7765.965	3.700	1.390	6.640	.140	2.750	.087	.034	.110	.014	.110	2.9	9.2	51.9	.1	1.0	29.7	61.1	112.1	189.1	25.8	13.9	14.8	70.0	5.0	11.6	36.3	161.1	125.7	5.1
2290	1812	674.126	7795.766	3.060	.430	6.040	.210	2.300	.090	.023	.074	.014	.100	1.5	5.9	47.6	.1	1.0	61.9	25.7	44.7	42.5	37.5	33.5	12.7	23.1	6.9	4.2	22.9	57.0	100.1	17.9
2290	1813	676.061	7793.241	2.110	.330	3.740	.130	.460	.016	.032	.043	.002	.220	1.6	7.6	25.4	.3	1.0	45.6	12.0	30.2	59.3	12.6	9.3	7.0	9.9	12.7	3.7	23.8	54.4	54.8	6.0
2290	1814	678.496	7788.189	1.260	.220	2.620	.130	.930	.072	.032	.170	.009	.075	.6	3.5	39.9	.3	1.0	93.2	14.9	103.5	11.2	16.5	16.7	5.6	52.0	6.8	4.8	21.2	37.1	27.5	16.8
2290	1815	679.541	7782.401	2.170	.330	3.030	.240	2.210	.035	.024	.050	.009	.260	1.9	6.7	51.1	.1	1.0	44.7	33.1	78.3	42.6	24.0	27.9	8.3	49.5	7.7	6.8	25.8	96.8	28.3	17.1
2290	1816	689.193	7782.431	2.470	.590	4.650	.810	2.340	.120	.021	.074	.011	.360	2.9	3.3	102.7	.1	1.0	50.2	64.1	10.4	230.3	29.5	12.7	11.8	37.6	11.1	7.6	19.9	196.6	35.0	14.4
2290	1817	689.434	7783.902	1.530	1.250	2.640	.190	1.480	.033	.029	.095	.006	.300	2.0	7.9	19.8	.1	1.0	54.7	26.0	74.2	34.9	25.8	11.8	6.8	42.9	8.0	3.2	70.5	82.1	23.3	12.7
2290	1818	680.071	7745.821	2.240	.850	3.240	.230	.740	.054	.027	.110	.005	.170	1.4	4.6	49.8	.1	1.0	149.3	27.9	43.8	49.2	35.7	10.6	5.6	31.0	17.5	4.6	26.4	44.2	47.4	10.3
2290	1819	675.567	7749.473	1.950	.880	2.750	.340	.810	.048	.056	.100	.010	.180	1.7	5.0	111.2	.1	1.0	94.2	17.5	39.5	52.7	26.8	5.6	6.3	33.3	13.1	7.4	39.8	54.5	47.2	8.7
2290	1820	644.605	7731.242	2.060	.810	3.050	.350	1.370	.074	.036	.120	.005	.180	1.6	4.6	79.3	.4	1.0	124.3	27.4	71.4	39.3	57.7	17.2	7.7	44.4	21.2	5.8	98.3	56.5	73.5	10.5
2290	1821	644.418	7728.590	2.340	.630	3.060	.780	1.390	.038	.045	.120	.012	.140	1.1	4.4	103.4	.1	1.0	139.2	18.0	41.6	59.5	64.9	12.7	6.4	29.6	10.9	7.0	28.3	50.0	64.9	16.0
2290	1822	641.042	7723.479	3.160	.510	3.340	.500	1.310	.094	.043	.120	.009	.160	1.4	10.4	105.9	.1	1.0	93.7	38.2	93.0	29.8	45.1	34.4	8.1	61.4	8.4	6.4	30.6	61.5	90.0	14.7
2290	1825	621.958	7719.372	2.470	2.500	3.130	.750	1.890	.044	.062	.100	.011	.170	1.7	11.8	119.2	.1	1.0	93.4	13.0	52.2	50.2	51.6	22.7	8.9	34.0	9.8	5.8	103.4	55.9	66.1	19.1
2290	1826	654.921	7743.434	2.860	.420	4.110	.420	1.120	.083	.021	.150	.011	.190	2.0	4.6	80.1	.1	1.0	138.7	39.2	72.5	52.1	38.8	35.7	8.9	54.2	14.3	5.0	34.5	65.0	97.1	7.2
2290	1827	651.982	7740.169	1.570	1.590	2.690	.370	.960	.061	.040	.130	.025	.130	1.5	6.5	79.9	.5	1.0	101.6	15.5	39.3	42.0	46.2	9.8	6.9	28.8	19.8	6.1	58.1	42.4	56.7	14.5
2290	1828	645.961	7745.867	2.940	.590	4.280	.560	1.630	.049	.008	.069	.009	.340	2.6	3.8	85.6	.3	1.0	49.4	22.9	42.2	70.4	19.8	15.3	8.7	30.4	12.1	3.7	82.3	73.1	80.0	5.4
2290	1829	645.523	7748.634	2.480	.690	3.280	.310	1.130	.038	.048	.580	.008	.150	1.4	6.0	101.5	.3	1.0	76.9	18.7	58.8	19.1	38.3	27.6	6.8	26.6	15.7	4.2	85.3	58.1	102.1	6.1
2290	1830	628.828	7740.318	1.880	.640	2.790	.560	.690	.038	.016	.160	.016	.290	1.9	5.9	105.1	.4	1.0	260.6	13.8	7.8	16.3	111.4	12.0	6.5	3.8	12.4	4.0	75.3	43.1	54.3	11.2
2290	1831	631.200	7743.945	2.500	.440	3.640	.340	.850	.030	.027	.280	.006	.310	2.6	11.1	51.6	.1	1.0	102.4	14.6	15.6	7.4	36.1	11.2	8.9	7.2	17.6	4.0	51.9	60.2	65.5	7.1
2290	1832	634.801	7740.374	1.180	.200	2.710	.320	.510	.025	.013	.057	.003	.190	1.1	2.4	27.5	.1	1.0	195.3	8.1	6.1	7.7	78.6	12.3	5.9	2.0	11.7	1.2	43.4	20.9	42.5	10.8
2290	1833	636.724	7744.977	2.150	.490	3.450	.270	.800	.046	.027	.120	.005	.190	1.6	6.4	53.3	.1	1.0	158.4	20.4	42.5	51.0	55.1	10.7	7.9	29.5	68.7	4.9	35.1	57.6	54.8	12.9
2290	1834	623.928	7726.625	1.840	.550	2.820	.280	.069	.036	.130	.006	.130	1.6	10.7	66.3	.1	1.0	130.2	23.7	43.2	34.9	54.1	15.0	7.2	24.7	15.8	4.7	47.8	44.4	125.5	11.9	
2290	1835	627.563	7722.484	1.810	.630	1.940	.390	.850	.020	.043	.140	.012	.130	.5	6.9	79.7	.1	1.0	94.7	10.6	49.0	20.9	28.2	16.8	3.7	21.0	5.0	4.4	47.9	43.9	35.2	5.3
2290	1836	632.851	7729.125	1.840	.490	2.080	.330	.740	.020	.026	.078	.006	.160	1.0	4.7	59.5	.1	1.0	54.3	9.8	55.3	21.0	39.7	13.2	7.0	22.8	6.9	3.9	52.9	42.7	37.5	8.8
2290	1837	625.386	7731.334	2.380	.450	3.500	.280	.640	.026	.030	.042	.008	.280	1.5	4.1	75.0	.1	1.0	76.4	16.4	47.9	36.3	29.6	8.4	7.7	16.7	10.5	4.6	51.9	73.3	30.8	5.0
2290	1838	639.739	7735.140	2.000	.620	2.590	.530	.980	.040	.039	.110	.009	.120	.8	5.5	90.7	.1	1.0	122.9	17.3	37.9	45.9	55.3	12.9	5.1	33.8	13.9	5.3	37.1	40.1	58.3	14.2
2290	1839	655.035	7731.260	3.080	.490	5.900	.088	.540	.032	.038	.210	.012	.120	1.2	1.0	27.9	.4	1.0	106.3	22.1	58.5	31.6	25.3	9.8	11.8	17.8	13.1	6.4	36.2	55.8	67.9	7.4
2290	1840	661.130	7742.166	2.110	1.140	2.110	.220	.900	.022	.056	.093	.012	.130	.9	5.9	53.5	.1	1.0	49.8	16.9	44.3	40.8	20.6	17.2	4.4	30.0	5.1	5.1	62.7	55.3	40.1	4.3
2290	1841	656.160	7773.442	2.610	.250	3.790	.250	.940	.028	.020	.130	.006	.140	1.5	5.4	98.8	.1	1.0	32.0	11.2	46.6	16.4	16.4	19.4	7.6	23.7	6.8	5.2	10.8	76.9	51.1	13.8
2290	1842	667.878	7770.740	2.840	.610	4.560	.062	1.750	.057	.048	.034	.018	.100	1.4	5.7	19.7	.1	1.0	28.7	31.1	89.5	141.2	16.6	14.4	8.8	48.6	5.0	9.3	28.3	108.7	77.5	4.4
2290	184																															

2290 1904	683.826	7682.977	3.070	.790	5.560	1.050	1.870	.047	.092	.130	.013	.540	2.3	5.6	181.5	.1	1.0	135.8	43.0	62.7	117.7	77.4	42.3	10.8	51.6	6.3	7.1	34.9	85.4	80.5	14.3
2290 1905	685.649	7681.982	1.880	.840	2.740	.580	.890	.047	.059	.140	.015	.170	1.2	4.1	130.8	.1	1.0	118.7	21.9	42.9	88.4	52.4	12.9	4.4	34.9	11.2	7.0	30.4	51.1	41.8	10.1
2290 1906	691.608	7688.086	2.340	.830	3.720	.680	1.330	.046	.055	.140	.012	.220	1.8	5.4	148.2	.1	1.0	111.5	27.6	60.0	103.6	54.0	17.8	7.7	46.7	8.7	7.7	29.2	63.1	56.6	11.4
2290 1907	691.791	7679.157	3.000	.780	3.390	1.020	1.700	.042	.059	.120	.019	.250	1.9	4.4	218.6	.1	1.0	98.9	23.4	67.6	73.6	39.5	22.4	8.4	44.2	9.0	8.3	23.7	71.2	67.2	10.3
2290 1908	687.707	7674.906	2.040	.810	2.420	.220	.810	.045	.054	.110	.007	.190	1.2	4.1	71.1	.2	1.0	95.4	19.9	39.4	41.5	51.0	16.2	5.5	20.9	8.7	5.8	20.4	51.7	47.6	5.4
2290 1909	683.026	7672.100	2.060	.880	3.260	.570	1.070	.045	.097	.120	.017	.200	1.3	8.8	122.7	.1	1.0	97.7	22.8	42.7	66.6	43.9	14.7	6.4	40.5	6.6	8.5	41.5	54.4	52.1	8.9
2290 1910	677.906	7664.300	1.280	.580	1.970	.150	.530	.015	.034	.055	.009	.150	.9	6.3	40.2	.4	1.0	84.0	10.6	27.1	18.0	33.5	19.1	4.1	13.9	11.7	4.7	49.0	30.9	24.4	9.6
2290 1911	686.141	7662.783	1.720	.630	3.010	.260	.730	.035	.020	.100	.005	.150	1.6	5.1	72.0	.1	1.0	115.1	21.0	35.7	43.1	40.5	11.3	7.0	28.2	10.0	4.2	48.7	40.6	40.1	14.6
2290 1912	673.752	7673.028	1.810	.540	2.430	.290	.820	.042	.040	.080	.004	.160	1.3	6.8	73.9	.1	1.0	107.0	15.7	37.2	25.0	40.9	13.2	6.0	20.7	10.3	5.2	38.1	42.8	31.5	17.4
2290 1913	657.502	7693.559	1.670	1.490	3.590	.200	.790	.094	.016	.110	.009	.035	1.5	5.7	47.1	.1	1.0	173.5	22.3	32.4	60.6	76.2	16.2	7.2	39.1	17.1	4.4	71.7	25.4	71.6	14.7
2290 1914	647.685	7700.751	2.240	.430	3.690	.480	1.020	.047	.021	.120	.006	.230	2.3	4.6	91.6	.1	1.0	206.8	24.9	41.3	52.7	32.9	16.5	7.5	28.4	15.1	5.9	18.6	66.9	61.4	18.0
2290 1915	644.226	7704.585	2.900	.450	5.120	.680	1.700	.094	.037	.110	.009	.250	2.7	6.9	154.8	.1	1.0	163.7	38.3	71.3	96.1	46.7	17.0	12.4	70.1	19.6	11.9	22.1	98.4	84.3	18.5
2290 1917	638.275	7715.942	2.430	.830	3.760	.640	1.650	.035	.037	.190	.004	.170	1.7	7.1	92.5	.1	1.0	141.7	26.5	99.9	49.5	63.1	32.2	8.0	59.9	24.9	10.5	29.9	114.8	84.9	13.1
2290 1918	668.448	7698.258	2.430	.610	8.010	.210	.800	.400	.014	.220	.006	.110	2.6	11.2	80.0	.1	1.0	274.6	34.3	44.2	79.9	107.9	14.6	13.6	45.9	51.5	12.8	39.2	39.7	117.8	43.4
2290 1919	651.438	7694.040	1.160	.640	3.770	.065	.730	.150	.007	.086	.002	.029	1.1	5.2	59.9	.1	1.0	219.4	14.3	10.3	46.2	111.6	13.6	7.2	18.6	33.8	5.7	37.7	12.7	55.3	23.1
2290 1920	647.421	7690.155	.540	.120	2.560	.082	.079	.079	.003	.089	.005	.013	.8	3.9	27.7	.1	1.0	352.4	22.0	9.9	33.4	42.0	3.7	5.5	21.6	17.1	1.6	18.2	8.3	62.7	27.8
2290 1921	656.123	7702.247	3.350	.170	3.830	.440	1.220	.034	.036	.087	.007	.140	1.5	11.1	86.9	.1	1.0	104.4	17.8	64.2	38.1	40.0	27.3	9.6	32.2	9.6	6.9	24.8	55.8	81.0	21.3
2290 1922	654.752	7706.875	2.380	.790	9.650	.480	1.510	.058	.026	.200	.011	.450	3.9	11.3	204.4	.1	1.0	116.3	93.2	85.5	191.2	54.6	18.4	18.0	117.8	13.6	2.6	23.2	73.9	53.1	9.7
2290 1923	649.864	7714.113	2.230	3.460	3.120	.740	1.710	.054	.046	.093	.012	.110	1.2	6.8	124.7	.1	1.0	118.7	17.2	33.7	47.9	63.6	14.6	7.9	30.9	12.9	5.7	109.9	38.2	63.3	8.7
2290 1924	647.915	7719.407	2.620	.530	8.200	.470	1.230	.130	.040	.230	.008	.310	3.8	10.3	88.3	.1	1.0	323.8	39.8	82.7	29.3	113.7	13.7	19.7	27.8	55.0	5.6	28.0	168.3	50.3	22.1
2290 1925	645.395	7683.320	2.310	.360	4.290	.350	.860	.038	.018	.064	.004	.230	1.5	2.7	64.0	.1	1.0	74.0	20.9	51.0	56.7	29.1	17.7	7.7	27.9	13.2	5.2	25.6	60.9	37.6	16.4
2290 1926	643.883	7680.152	2.450	.210	2.790	.180	.500	.012	.014	.044	.010	.150	1.1	4.2	45.4	.1	1.0	43.0	9.6	42.5	20.1	18.7	13.1	5.1	15.0	8.2	4.8	17.3	43.0	21.6	10.7
2290 1927	646.593	7680.837	2.590	.450	4.020	.540	1.340	.070	.025	.110	.011	.220	1.7	12.7	119.3	.1	1.0	108.0	30.5	52.7	100.5	50.4	20.9	10.0	40.8	13.9	6.2	38.3	60.2	58.1	19.5
2290 1928	650.540	7672.956	4.010	.300	5.750	.210	1.120	.081	.012	.120	.007	.150	2.3	7.6	66.2	.1	1.2	133.1	29.5	106.5	78.3	34.0	29.7	11.8	63.7	33.2	6.9	21.7	60.6	80.7	16.3
2290 1929	650.164	7671.679	1.090	.410	1.850	.110	.430	.027	.021	.089	.015	.110	1.2	6.5	30.4	.1	1.0	93.0	12.7	26.6	37.4	34.0	6.3	4.6	21.7	5.0	3.9	23.4	28.1	24.4	12.9
2290 1930	655.629	7671.587	2.170	.380	4.840	.630	1.410	.140	.004	.043	.005	.200	2.3	7.0	75.4	.1	1.0	149.6	28.9	27.2	67.8	106.5	13.1	12.0	65.4	19.5	5.5	14.2	48.7	128.1	24.9
2290 1931	656.867	7673.118	3.750	.740	6.400	.870	2.620	.140	.044	.130	.011	.400	3.3	5.2	197.9	.1	1.0	52.3	59.7	145.4	75.9	32.1	59.5	13.0	66.4	11.1	10.3	31.3	141.4	69.5	6.3
2290 1932	660.749	7679.792	2.210	.760	4.600	.100	.760	.031	.016	.120	.011	.220	1.8	4.2	37.7	.1	1.0	171.3	19.6	36.6	20.3	62.0	20.1	7.9	20.3	21.8	4.7	23.7	52.6	39.4	19.4
2290 1933	656.477	7662.232	2.040	.630	2.960	.210	1.010	.033	.045	.100	.008	.210	1.9	4.2	85.7	.1	1.0	89.9	19.9	54.8	34.9	41.9	15.7	7.1	26.8	14.5	5.6	33.2	56.4	48.9	16.6
2290 1934	658.112	7661.215	2.800	1.220	5.260	.690	2.820	.093	.021	.140	.010	.220	2.8	7.4	177.8	.1	1.0	128.2	49.1	201.4	125.7	88.5	20.8	13.5	91.5	33.4	6.4	54.3	79.1	88.8	29.3
2290 1935	665.888	7661.055	1.670	.480	3.400	.270	.690	.045	.025	.120	.003	.150	1.4	5.4	75.5	.1	1.0	111.7	22.5	38.0	43.6	50.8	11.5	7.2	22.6	20.0	4.3	30.9	46.4	46.4	19.0
2290 1936	649.812	7661.240	5.030	.270	5.320	.140	.560	.390	.014	.280	.009	.210	2.3	6.0	109.0	.1	1.0	128.6	69.1	62.3	50.3	67.6	12.1	11.8	21.0	46.9	5.8	22.8	72.3	35.6	24.0
2290 1937	674.776	7690.501	2.490	2.960	3.810	.120	2.830	.052	.010	.099	.017	.034	1.2	5.1	32.3	.1	1.0	81.8	19.5	56.7	40.9	49.8	28.2	8.3	67.8	16.2	3.0	81.5	24.5	81.2	18.7
2290 1938	674.882	7696.771	1.550	2.040	3.700	.058	1.830	.083	.007	.170	.007	.014	1.5	6.2	21.3	.1	1.0	146.6	14.9	19.8	31.5	77.3	18.3	9.0	32.7	21.9	3.0	59.7	15.7	77.8	22.9

MORENE - -0.063mm

% AL - ICAP



SYMBOL : . ○ ○ ○ ○ ○ ○

ØVRE GRENSE : 1.00 1.60 2.50 3.90 6.30 10.00 >10.00

MORENE - -0.063mm

% Ca - ICAP



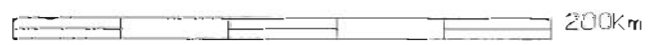
SYMBOL :



ØVRE GRENSE : .25 .39 .63 1.00 1.60 2.50 3.90 6.30 10.00 >10.00

MORENE - -0.063mm

% Fe - ICAP



SYMBOL : • ○ ⊙ ⊕ ⊖ ⊗ ⊘

ØVRE GRENSE : 1.60 2.50 3.90 6.30 10.00 16.00 25.00 >25.00

MORENE - -0.063mm

z K - ICAP



200m

SYMBOL : . o o o o o o o

ØVRE GRENSE : .10 .16 .25 .39 .63 1.00 1.60 >1.60

MORENE - -0.063mm

% Mg - ICAP



SYMBOL : . ○ ○ ○ ○ ○ ○ ○

ØVRE GRENSE . .39 .63 1.00 1.60 2.50 3.90 6.30 >6.30

MORENE - -0.063mm

% Mn - ICAP



SYMBOL : . ○ ○ ○ ○ ○ ○ ○ ○

ØVRE GRENSE : .016 .025 .039 .063 .100 .160 .250 .390 .630 > .630

MORENE - -0.063mm

% Na - ICAP



SYMBOL : . o o o o o o o

ØVRL GRENSE : .016 .025 .039 .063 .100 .160 .250 > .250

MORENE - -0.063mm

% P - ICAP



SYMBOL : . ◦ ◦ ◦ ◦ ◦ ◦ ◦ ◦

ØVRE GRENSE : .063 .100 .160 .250 .390 .630 1.000 1.600 >1.600

MORENE - -0.063mm

z Φ - ICAP



SYMBOL : . o o o o o o
ØVRE GRENSE : .100 .160 .250 .390 .630 > .630

MORENE - -0.063mm

PPM Ag - ICAP



SYMBOL	ØVRE GRENSE
○	.63
○	1.00
○	1.60
○	2.50
○	3.90
○	6.30
○	>6.30

MORENE - -0.063mm

PPM Ba - ICAP



200Km

SYMBOL : . o o o o o o o

ØVRE GRENSE : 25.0 39.0 63.0 100.0 160.0 250.0 390.0 >390.0

MORENE - -0.063mm

PPM Ce - ICAP



200km

SYMBOL : . o o o o o o o

ØVRE GRÆNSE : 100.0 160.0 250.0 390.0 630.0 1000.0 1600.0 >1600.0

MORENE - -0.063mm

PPM Co - ICAP



SYMBOL



ØVRE GRENSE : 10.0 16.0 25.0 39.0 63.0 100.0 > 100.0

MORENE - -0.063mm

PPM Cr - ICAP



SYMBOL : . o o o o o o o

ØVRE GRENSE : 25 39 63 100 160 250 390 >390

MORENE - -0.063mm

PPM Cu - ICAP



SYMBOL



ØVRE GRENSE : 16.0 25.0 39.0 63.0 100.0 160.0 250.0 390.0 >390.0

MORENE - -0.063mm

PPM La - ICAP



SYMBOL



ØVRE GRENSE : - - - - 39.0 63.0 100.0 160.0 250.0 390.0 630.0 1000.0 1600.0 2500.0 >2500.0

MORENE - -0,063mm

PPM LC - 1CA



200 km

SYMBOL : . o o o o o

ØVRE GRENSE : 10,0 16,0 25,0 39,0 63,0 >63,0

MORENE - -0.063mm

PPM Mo - ICAP



SYMBOL : . o o o o o

ØVRE GRENSE : 6.3 10.0 16.0 25.0 39.0 >39.0

MORENE - -0,063mm

PPM N₀ - ICAP



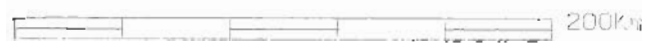
SYMBOL



AVRE, GRENSE : 16,0 25,0 39,0 63,0 100,0 160,0 250,0 >250,0

MORENE - -0,063mm

PPM Pb - ICAP



SYMBOL : . o o o o o o o o o

ØVRE GRENSE : 10.0 16.0 25.0 39.0 63.0 100.0 160.0 250.0 390.0 >390.0

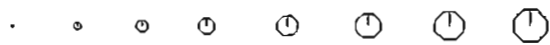
MORENE - -0,063mm

PPM Sc - ICAP



SYMBOL

ØVRE GRENSE



2.5 3.9 6.3 10.0 16.0 25.0 39.0 >39.0

YORK N. 1000

1000



SYMBOL



ØVRE GRENSE : 25.0 39.0 63.0 100.0 160.0 250.0 390.0 630.0 1000.0 >1000

MORENE - -0,067dam

PPM V - ICAP



SYMBOL : . o o o o o o

ØVRE GRENSE : 25,0 39,0 63,0 100 0 160,0 250,0 325,0

MORENE - -0.063mm

PPM Zn - ICAP



SYMBOL : . o o o o o o o

ØVRE GRENSE : 25.0 39.0 63.0 100.0 160.0 250.0 390.0 >390.0

MORENE - -0.0163mm

PPM Zr - ICAP



SYMBOL



ØVRE GRENSE < 6.3 10.0 16.0 25.0 39.0 >39.0

MORENE - -0.063mm

PPM Be - ICAP



SYMBOL : . • ○ ○ ○ ○ ○
LØVEI GRENSE : .50 1.00 1.50 2.00 2.50 >2.50

MORENE - -0.063m'

FPM Ce - ICAP



SYMBOL : ○ ○ ○ ○ ○ ○ ○ ○

AVG. VÆRDI 250 500 750 1000 1250 1500 1750 > 1750

MORENE - -0.063mm

PPM Cu - ICAP



SYMBOL :

PPM MORENE : 100.0 150.0 200.0 250.0 300.0 350.0 400.0 450.0 >450.0

MORENE - -0.063mm

PPM L_a - ICAP



SYMBOL :

ØVRE GRENSE : 100.0 500.0 1000.0 1500.0 2000.0 2500.0 >2500.0

MORENE - -0.063mm

% Mg - ICAP



SYMBOL
ØVRE GRENSE . 2.0 3.0 4.0 5.0 6.0 7.0 8.0 >8.0

MORENE - -0.063mm

PPM Mo - 1CAP



SYMBOL : . • ◉ ◊ ◐ ◑ ◒ ◓

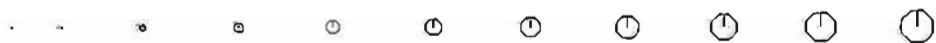
ØVRE GRENSE : 15.0 20.0 25.0 30.0 35.0 40.0 45.0 50.0 >50.0

MORENE - -0.063mr.

DPM Pb - ICAP



SYMBOL



GRAD GRÆNSE : 50.0 100.0 150.0 200.0 250.0 300.0 350.0 400.0 450.0 450.0

MORENE - -0.063mm

PPM Zn - ICAP



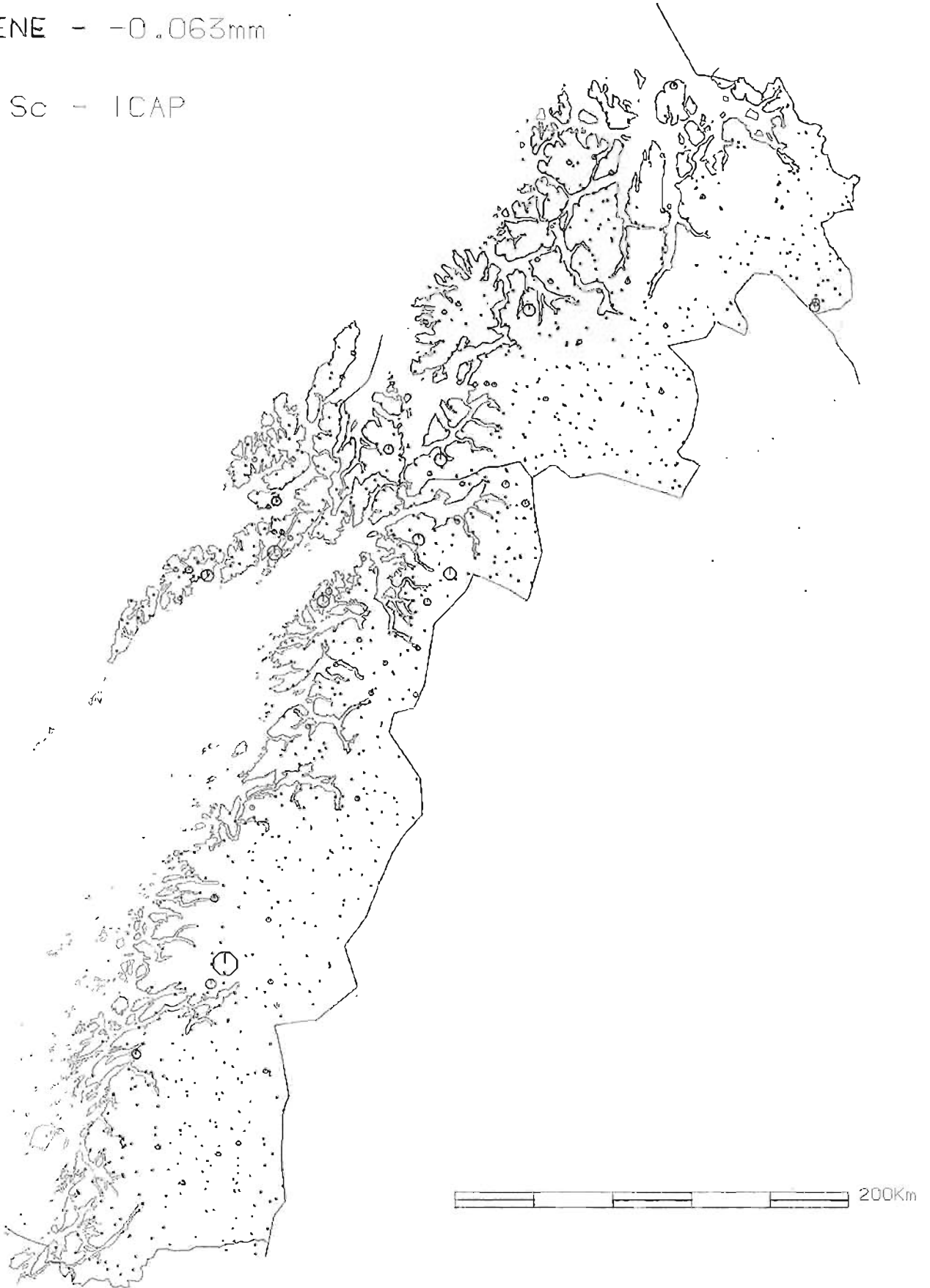
200km

SYMBOL : . o o o o o o o

PL GRENSE : 100.0 150.0 200.0 250.0 300.0 350.0 400.0 450.0 >450.0

MORENE - -0.063mm

PPM Sc - ICAP



SYMBOL : . o o o o o o o o o

SA-RE. GRENSE : 10.0 15.0 20.0 25.0 30.0 35.0 40.0 45.0 50.0 >50.0

F I L B E S K R I V E L S E

Filnavn på tape

Tape nr.

F0000 325 . DATA . NGU

Brukerens filnavn

LDNT . ARCO . GEOKJ

Variable

Prosjektnr. Prøvenr. Koordinater (km) Al, Ca, Fe,
K, Mg, Mn, Na, P, Si, Ti (%) Ag, B, Ba, Be, Cd, Ce, Co, Cr, Cu,
La, Li, Mo, Ni, Pb, Sc, Sr, V, Zn, Zr (ppm)

Format

A5, I6, X, 2F10.3, 10F7.3, 19F8.1

Ant. prøver Prøvenr. fra/til

1058 1790:3009-3666
2290: 1-1938

Prøvetype

Løsmasse

Fraksjon

-0.06mm

Analysemetode

ICAP

Analyse/arb.nr.

105/86

Lager prøve

11D III, IV, V

Random nr. 12001-13371

Prosjektnr.

2289/2290

Oppdragsnr.

Prosjektnavn

Geokjemisk kartlegging i Nordland
og Troms

Oppdragsgiver

Nordland og Troms fylkeskommuner

Saksbehandler

Siv Kjeldsen

Kartbladnr.

Kartbladnavn

Kommune

Fylke

Nordland & Troms

Sted

Forekomst-navn

Prøvetaking år

86

Analysering år

87

Rapport år

87

Rapport nr.

87.142

7. LAGRING AV DATA