Bergvesenet
Postboks 3021, N-7441 Trondheim

Rapportarkivet

Bergvesenet rapport nr	Intern Journal nr	Internt arkiv nr	Rapport lokalisering	Gradering
BV 4853	06/00131-12			**Fortrolig**
Kommer fra ..arkiv	Ekstern rapport nr 06009	Oversendt fra Sulfidmalm a.s.	Fortrolig pga Muting	Fortrolig fra dato:

Tittel
Fugro Airborne Surveys: Dighem Survey for Sulfidmalm AS, Norway. Map volume 3 of 3

Forfatter	Dato År	Bedrift (Oppdragsgiver og/eller oppdragstaker)
Garrie, Douglas	01.06 2006	Sulfidmalm A/S Dighem Fugro Airborne Survey

Kommune	Fylke	Bergdistrikt	1: 50 000 kartblad	1: 250 000 kartblad
Ringerike Bamble Evje	Aust-Agder Buskerud Telemark		17141 17144 17151 17152 18153 18154	Arendal Telemark Mandal

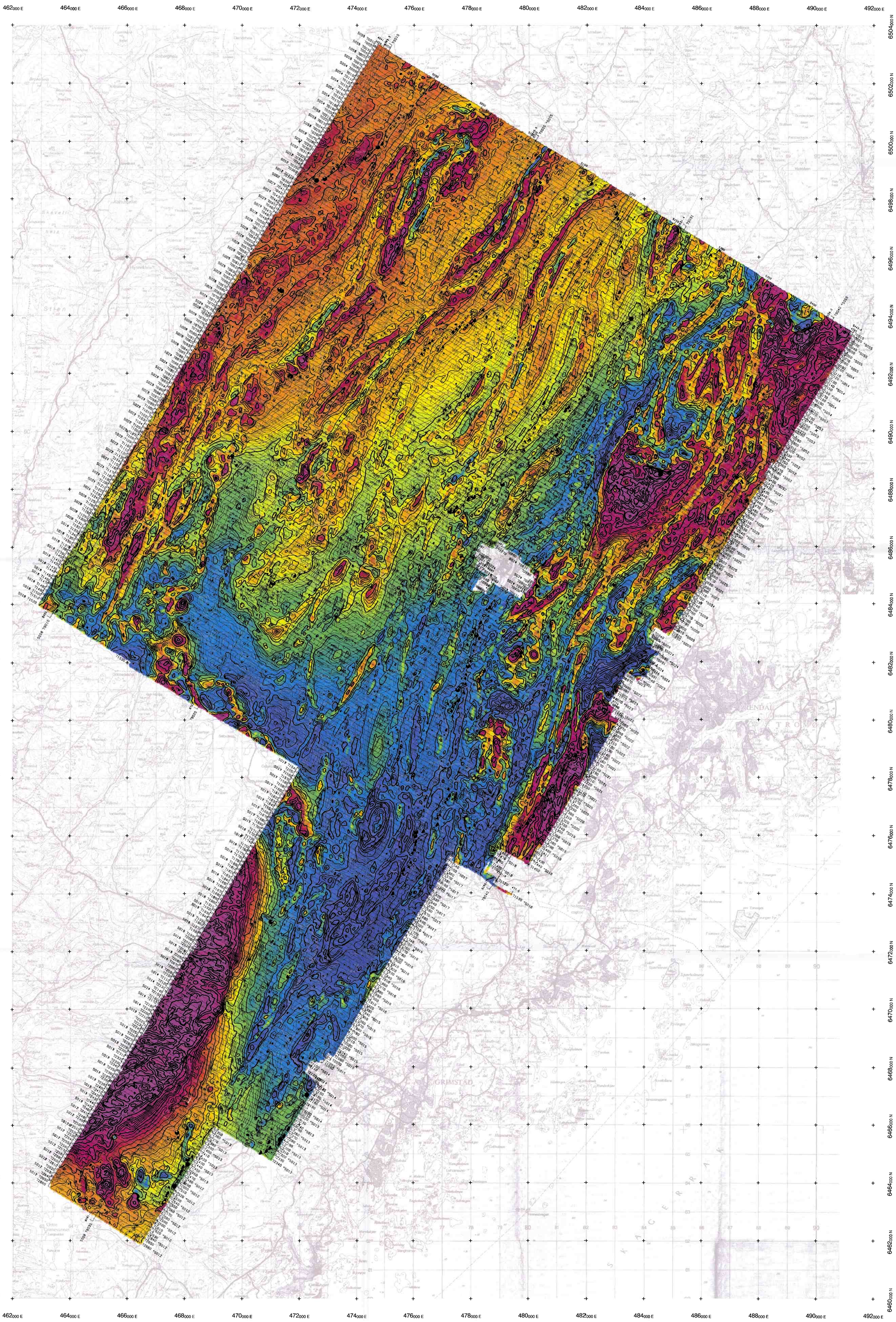
Fagområde	Dokument type	Forekomster (forekomst, gruvefelt, undersøkelsesfelt)
Geofysikk		Ertelien Bamble Evje
Råstoffgruppe	**Råstofftype**	
Malm/metall	Ni	

Sammendrag, innholdsfortegnelse eller innholdsbeskrivelse
Duplikat kopi eksisterer ikke av denne, se oversendelsesbrev 21.09.2006

MAPS
for
FUGRO Report #06009

2006 DIGHEM Survey,
REF: 1714 I, IV; 1715 I, II; 1815 III, IV
Norway

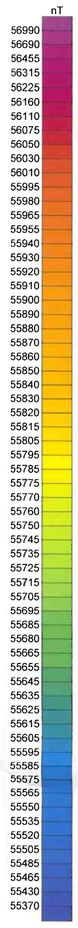
3 of 3



TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V

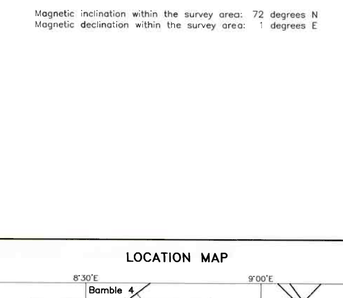
Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar



ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◑	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	×	Questionable anomaly

FLIGHT LINES



TOTAL MAGNETIC FIELD CONTOURS

250 nT

50 nT

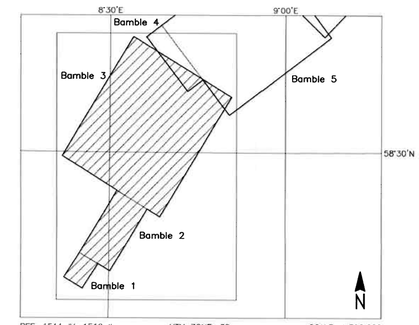
10 nT

5 nT

magnetic low

Magnetic inclination within the survey area: 72 degrees N
Magnetic declination within the survey area: 1 degrees E

LOCATION MAP



SULFIDMALM A/S

BAMBLE 1–3 AREAS, NORWAY

TOTAL MAGNETIC FIELD

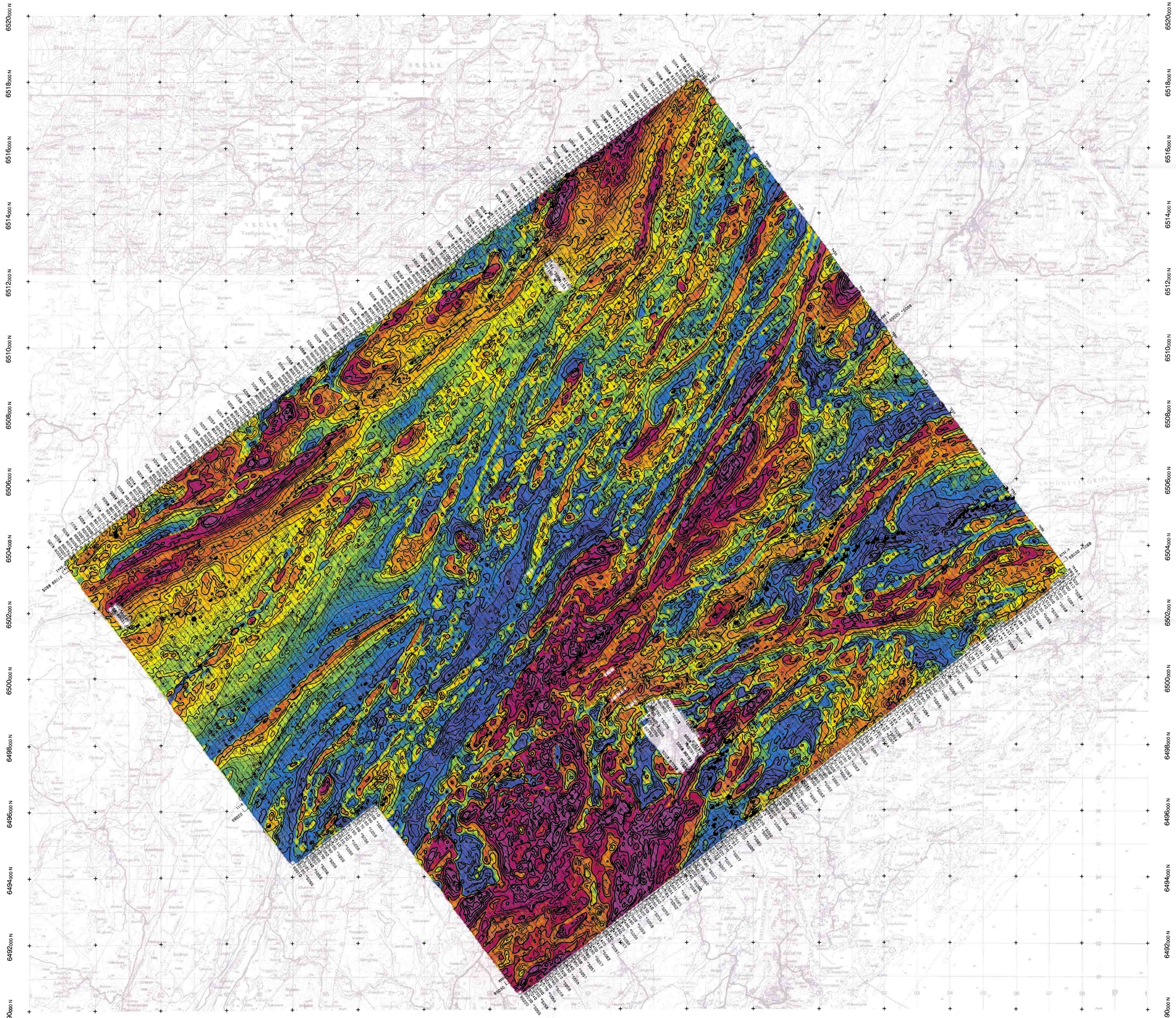
Horizontal Gradient Enhanced

FUGRO DIGHEM^V SURVEY	REF: see location map	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi
Scale 1:50 000

FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V

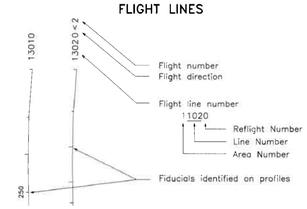
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5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

nT
56945
56770
56655
56560
56490
56425
56370
56325
56285
56250
56220
56190
56165
56145
56120
56100
56085
56070
56055
56040
56030
56015
56005
55995
55985
55975
55970
55960
55950
55945
55935
55930
55925
55915
55910
55905
55900
55890
55885
55880
55875
55870
55860
55855
55850
55840
55835
55830
55825
55820
55810
55805
55795
55790
55780
55770
55760
55750
55740
55720
55700
55680
55645

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◑	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	✳	Questionable anomaly

FLIGHT LINES

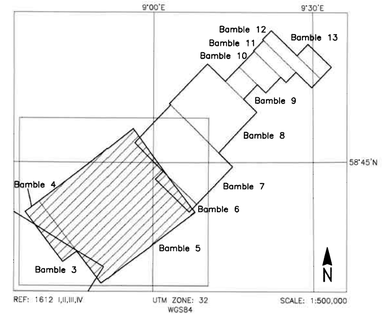


TOTAL MAGNETIC FIELD CONTOURS

250 nT
50 nT
10 nT
5 nT
magnetic low

Magnetic inclination within the survey area: 72 degrees N
Magnetic declination within the survey area: 1 degrees E

LOCATION MAP



SULFIDMALM A/S
BAMBLE 4-5 AREAS, NORWAY

TOTAL MAGNETIC FIELD
Horizontal Gradient Enhanced

FUGRO DIGHEM^V SURVEY	REF: 1612 I,II,III,IV	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi
Scale 1:50 000

FUGRO AIRBORNE SURVEYS

TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V

Frequency	Sensitivity	Coil Orientation
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5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

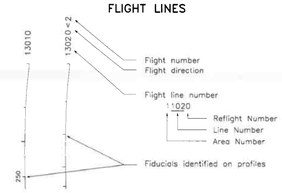
ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◕	20–50 siemens
4	◕	10–20 siemens
3	◔	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	×	Questionable anomaly

nT

56510
56410
56350
56305
56275
56250
56225
56205
56185
56170
56155
56140
56130
56115
56105
56095
56085
56075
56065
56055
56045
56035
56030
56020
56010
56005
55995
55985
55980
55970
55965
55955
55950
55945
55935
55930
55925
55915
55910
55905
55900
55890
55885
55880
55870
55865
55855
55850
55840
55835
55825
55820
55810
55805
55795
55785
55775
55760
55750
55730
55710
55675
55620

FLIGHT LINES



TOTAL MAGNETIC FIELD CONTOURS

. . . . . 250 nT

. . . . . 50 nT

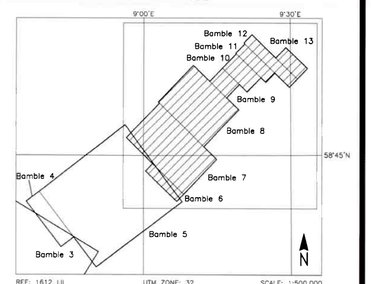
. . . . . 10 nT

. . . . . 5 nT

. . . . . magnetic low

Magnetic inclination within the survey area: 72 degrees N
Magnetic declination within the survey area: 1 degrees E

LOCATION MAP



SULFIDMALM A/S

BAMBLE 6–13 AREAS, NORWAY

TOTAL MAGNETIC FIELD

Horizontal Gradient Enhanced

FUGRO DIGHEM^V SURVEY	REF: 1612 I,II; 1712 III,IV	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi

Scale 1:50 000

FUGRO AIRBORNE SURVEYS

462000 E 464000 E 466000 E 468000 E 470000 E 472000 E 474000 E 476000 E 478000 E 480000 E 482000 E 484000 E 486000 E 488000 E 490000 E 492000 E

6504000 N 6502000 N 6500000 N 6498000 N 6496000 N 6494000 N 6492000 N 6490000 N 6488000 N 6486000 N 6484000 N 6482000 N 6480000 N 6478000 N 6476000 N 6474000 N 6472000 N 6470000 N 6468000 N 6466000 N 6464000 N 6462000 N 6460000 N

TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
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Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

N

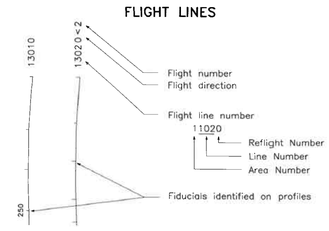
nT/m

5.10 3.75 2.95 2.40 1.95 1.60 1.35 1.15 0.95 0.80 0.70 0.60 0.50 0.40 0.35 0.30 0.28 0.26 0.24 0.22 0.20 0.18 0.16 0.14 0.12 0.10 0.08 0.06 0.04 0.02 0.00 -0.02 -0.04 -0.06 -0.08 -0.10 -0.13 -0.17 -0.20 -0.25 -0.30 -0.35 -0.40 -0.45 -0.50 -0.55 -0.60 -0.65 -0.70 -0.75 -0.80 -0.85 -0.95 -1.00 -1.10 -1.25 -1.35 -1.55 -1.75 -2.00 -2.30 -2.70 -3.55

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◒	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	✳	Questionable anomaly

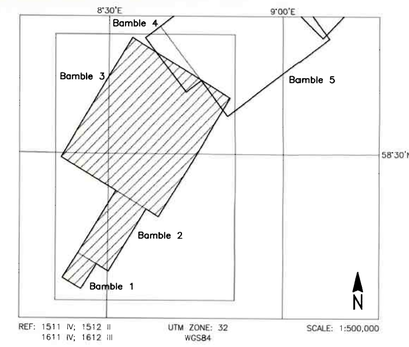
FLIGHT LINES



CALCULATED VERTICAL GRADIENT CONTOURS

2.5 nT/metre
0.5 nT/metre
0.1 nT/metre
0.05 nT/metre

LOCATION MAP



SULFIDMALM A/S

BAMBLE 1-3 AREAS, NORWAY

CALCULATED VERTICAL MAGNETIC GRADIENT

FUGRO DIGHEM^V SURVEY	REF: see location map	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 MI
Scale 1:50 000

FUGRO AIRBORNE SURVEYS

476000 E 478000 E 480000 E 482000 E 484000 E 486000 E 488000 E 490000 E 492000 E 494000 E 496000 E 498000 E 500000 E 502000 E 504000 E 506000 E 508000 E 510000 E

6520000 N 6518000 N 6516000 N 6514000 N 6512000 N 6510000 N 6508000 N 6506000 N 6504000 N 6502000 N 6500000 N 6498000 N 6496000 N 6494000 N 6492000 N 6490000 N

TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM*

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

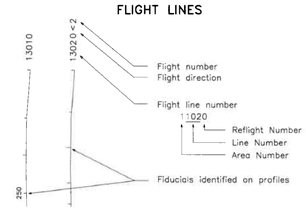
nT/m

6.95 5.25 4.25 3.55 3.00 2.60 2.25 1.95 1.75 1.55 1.35 1.20 1.05 0.95 0.85 0.75 0.65 0.60 0.50 0.45 0.40 0.35 0.30 0.25 0.20 0.17 0.13 0.10 0.07 0.03 0.00 -0.03 -0.07 -0.10 -0.13 -0.17 -0.20 -0.23 -0.27 -0.30 -0.35 -0.40 -0.45 -0.50 -0.55 -0.60 -0.65 -0.75 -0.80 -0.90 -0.95 -1.05 -1.15 -1.25 -1.40 -1.55 -1.70 -1.90 -2.15 -2.40 -2.80 -3.30 -4.15

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7		>100 siemens
6		50–100 siemens
5		20–50 siemens
4		10–20 siemens
3		5–10 siemens
2		1–5 siemens
1		< 1 siemens
?		Questionable anomaly

FLIGHT LINES



CALCULATED VERTICAL GRADIENT CONTOURS

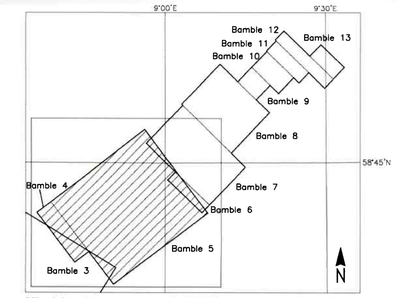
2.5 nT/metre

0.5 nT/metre

0.1 nT/metre

0.05 nT/metre

LOCATION MAP



SULFIDMALM A/S

BAMBLE 4–5 AREAS, NORWAY

CALCULATED VERTICAL MAGNETIC GRADIENT

FUGRO DIGHEM* SURVEY	REF: 1612 I,II,III,IV	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1
Fugro Airborne Surveys		

0 1 2 3 4 5 Km
0 1 2 3 Mi
Scale 1:50 000

FUGRO AIRBORNE SURVEYS

TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
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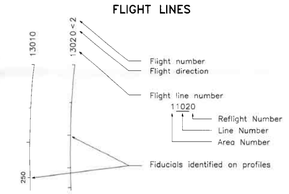
ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◕	20–50 siemens
4	◕	10–20 siemens
3	◔	5–10 siemens
2	○	1–5 siemens
1	○	< 1 siemens
–	×	Questionable anomaly

nT/m

5.60 4.20 3.35 2.75 2.35 2.05 1.75 1.55 1.35 1.20 1.10 0.95 0.85 0.75 0.70 0.60 0.55 0.50 0.40 0.37 0.33 0.30 0.25 0.20 0.17 0.13 0.10 0.08 0.05 0.03 0.00 -0.03 -0.07 -0.10 -0.13 -0.15 -0.18 -0.20 -0.25 -0.30 -0.33 -0.37 -0.40 -0.45 -0.50 -0.55 -0.60 -0.65 -0.70 -0.75 -0.85 -0.90 -1.00 -1.10 -1.25 -1.35 -1.50 -1.70 -1.95 -2.20 -2.60 -3.15 -4.05

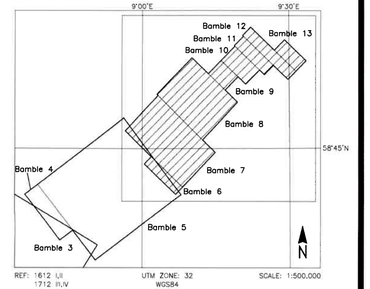
FLIGHT LINES



CALCULATED VERTICAL GRADIENT CONTOURS

———	2.5 nT/metre
———	0.5 nT/metre
———	0.1 nT/metre
— — —	0.05 nT/metre

LOCATION MAP



SULFIDMALM A/S

BAMBLE 6–13 AREAS, NORWAY

CALCULATED VERTICAL MAGNETIC GRADIENT

FUGRO DIGHEM^V SURVEY	REF: 1612 I,II; 1712 III,IV	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi
Scale 1:50 000

FUGRO AIRBORNE SURVEYS

TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
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Electromagnetic system	DIGHEM^V

Frequency	Sensitivity	Coil Orientation
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7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

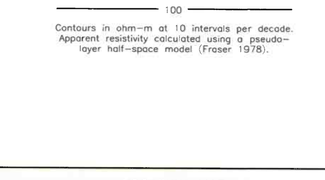




ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◑	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	×	Questionable anomaly

FLIGHT LINES

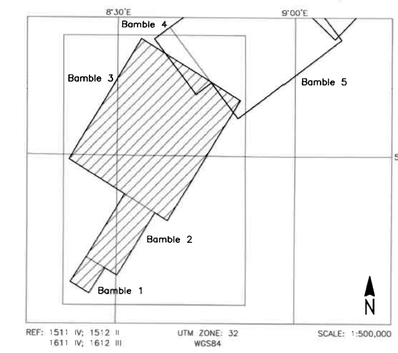


RESISTIVITY CONTOURS

1000
800
600
500
400
300
250
200
150
125
100

Contours in ohm-m at 10 intervals per decade. Apparent resistivity calculated using a pseudo-layer half-space model (Fraser 1978).

LOCATION MAP



SULFIDMALM A/S

BAMBLE 1–3 AREAS, NORWAY

APPARENT RESISTIVITY 900 Hz COPLANAR

FUGRO DIGHEM^V SURVEY	REF: see location map	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi
Scale 1:50 000

FUGRO AIRBORNE SURVEYS

476000 E 478000 E 480000 E 482000 E 484000 E 486000 E 488000 E 490000 E 492000 E 494000 E 496000 E 498000 E 500000 E 502000 E 504000 E 506000 E 508000 E 510000 E

6520000 N 6518000 N 6516000 N 6514000 N 6512000 N 6510000 N 6508000 N 6506000 N 6504000 N 6502000 N 6500000 N 6498000 N 6496000 N 6494000 N 6492000 N 6490000 N

TECHNICAL SUMMARY

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Frequency	Sensitivity	Coil Orientation
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7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

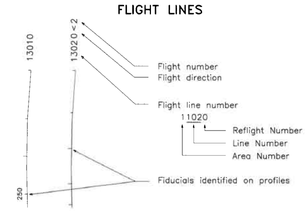
ohm m

2009 2008 2007 2006 2005 2004 2003 2002 2001 2000 1998 1995 1991 1987 1983 1978 1972 1965 1958 1950 1942 1932 1922 1912 1900 1887 1874 1860 1845 1828 1811 1793 1774 1755 1733 1712 1690 1666 1642 1616 1589 1561 1531 1500 1466 1431 1395 1357 1317 1273 1229 1180 1129 1073 1013 943 864 772 652 507 347 194 72

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◑	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	✳	Questionable anomaly

FLIGHT LINES

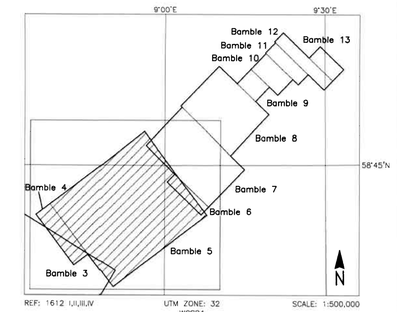


RESISTIVITY CONTOURS

1000 800 600 500 400 300 250 200 150 125 100

Contours in ohm-m at 10 intervals per decade. Apparent resistivity calculated using a pseudo-layer half-space model (Fraser 1978).

LOCATION MAP



SULFIDMALM A/S

BAMBLE 4-5 AREAS, NORWAY

APPARENT RESISTIVITY
900 Hz COPLANAR

FUGRO DIGHEM* SURVEY	REF: 1612 I,II,III,IV	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi

Scale 1:50 000

FUGRO

FUGRO AIRBORNE SURVEYS

TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V

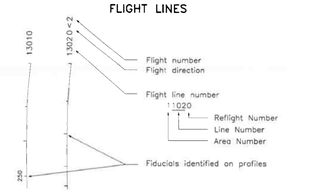
Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◑	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	×	Questionable anomaly

ohm-m
2009 2008 2007 2006 2003 2000 1995 1989 1981 1972 1961 1949 1935 1920 1903 1885 1865 1843 1820 1796 1771 1744 1716 1687 1657 1627 1595 1561 1527 1492 1455 1417 1377 1334 1291 1246 1197 1149 1096 1041 980 914 840 760 665 565 462 364 274 198 142 99 66 43 28 17 9 5 4 3 2 1 0

FLIGHT LINES

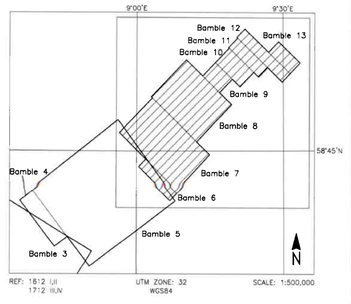


RESISTIVITY CONTOURS

1000 800 600 500 400 300 250 200 150 125 100

Contours in ohm-m at 10 intervals per decade. Apparent resistivity calculated using a pseudo-layer half-space model (Fraser 1978).

LOCATION MAP



SULFIDMALM A/S
BAMBLE 6-13 AREAS, NORWAY

APPARENT RESISTIVITY
900 Hz COPLANAR

FUGRO DIGHEM^V SURVEY	REF: 1612 I,II; 1712 III,IV	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi
Scale 1:50 000

FUGRO AIRBORNE SURVEYS

TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM*

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

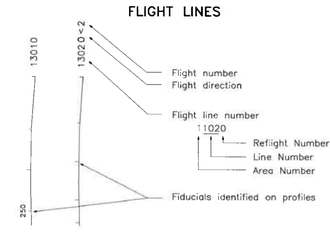
ohm-m

11990
11980
11970
11960
11925
11857
11766
11656
11532
11397
11253
11102
10951
10802
10655
10508
10365
10224
10083
9943
9805
9663
9523
9387
9252
9117
8981
8849
8715
8581
8447
8314
8180
8045
7907
7770
7633
7495
7352
7205
7051
6895
6734
6565
6392
6205
6009
5800
5577
5333
5075
4792
4487
4155
3776
3366
2912
2410
1875
1352
918
577
309

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◑	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	○	< 1 siemens
–	×	Questionable anomaly

FLIGHT LINES

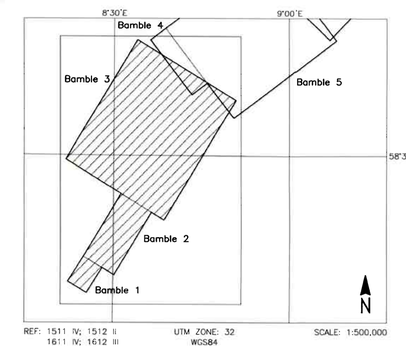


RESISTIVITY CONTOURS

1000
800
600
500
400
300
250
200
150
125
100

Contours in ohm-m at 10 intervals per decade. Apparent resistivity calculated using a pseudo-layer half-space model (Fraser 1978).

LOCATION MAP



SULFIDMALM A/S

BAMBLE 1-3 AREAS, NORWAY

APPARENT RESISTIVITY 7200 Hz COPLANAR

FUGRO DIGHEM* SURVEY	REF: see location map	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi

Scale 1:50 000

FUGRO AIRBORNE SURVEYS

476000 E 478000 E 480000 E 482000 E 484000 E 486000 E 488000 E 490000 E 492000 E 494000 E 496000 E 498000 E 500000 E 502000 E 504000 E 506000 E 508000 E 510000 E

6520000 N 6518000 N 6516000 N 6514000 N 6512000 N 6510000 N 6508000 N 6506000 N 6504000 N 6502000 N 6500000 N 6498000 N 6496000 N 6494000 N 6492000 N 6490000 N

TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM*

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

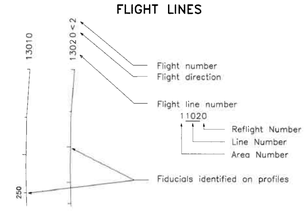
ohm m

11998 11992 11986 11935 11843 11709 11546 11360 11161 10955 10747 10541 10338 10148 9962 9782 9609 9443 9281 9126 8972 8823 8680 8536 8396 8256 8121 7986 7856 7726 7598 7471 7347 7225 7103 6981 6860 6735 6611 6483 6352 6218 6082 5941 5794 5645 5489 5319 5138 4942 4736 4503 4246 3961 3635 3243 2805 2339 1847 1388 974 624 303

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7		>100 siemens
6		50–100 siemens
5		20–50 siemens
4		10–20 siemens
3		5–10 siemens
2		1–5 siemens
1		< 1 siemens
–		Questionable anomaly

FLIGHT LINES

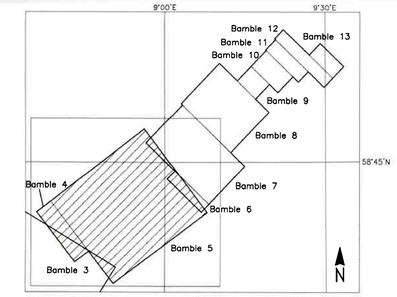


RESISTIVITY CONTOURS

1000
800
600
500
400
300
250
200
150
125
100

Contours in ohm-m at 10 intervals per decade. Apparent resistivity calculated using a pseudo-layer half-space model (Fraser 1978).

LOCATION MAP



SULFIDMALM A/S

BAMBLE 4-5 AREAS, NORWAY

APPARENT RESISTIVITY 7200 Hz COPLANAR

FUGRO DIGHEM* SURVEY	REF: 1612 I,II,III,IV	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi
Scale 1:50 000

FUGRO

FUGRO AIRBORNE SURVEYS

TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM*

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

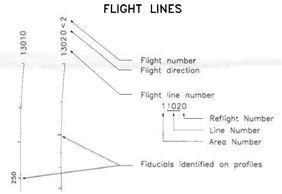
ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◒	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	⊗	Questionable anomaly

ohm-m

11990
11767
11377
10970
10583
10230
9920
9632
9372
9134
8921
8724
8542
8362
8191
8027
7875
7726
7581
7442
7301
7163
7023
6882
6742
6597
6454
6308
6163
6012
5858
5696
5530
5353
5171
4976
4771
4544
4308
4063
3799
3516
3218
2910
2605
2293
1992
1703
1442
1213
1023
849
698
559
427
309
196
107
46
13
5
2
1

FLIGHT LINES

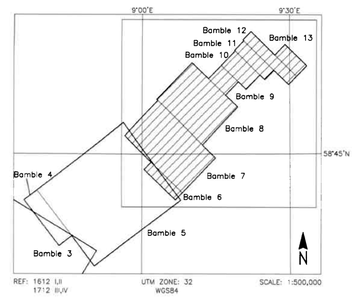


RESISTIVITY CONTOURS

1000
800
600
500
400
300
250
200
150
125
100

Contours in ohm-m at 10 intervals per decade. Apparent resistivity calculated using a pseudo-layer half-space model (Fraser 1978).

LOCATION MAP



SULFIDMALM A/S
BAMBLE 6–13 AREAS, NORWAY

APPARENT RESISTIVITY
7200 Hz COPLANAR

FUGRO DIGHEM* SURVEY	REF: 1612 I,II; 1712 II,V	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi
Scale 1:50 000

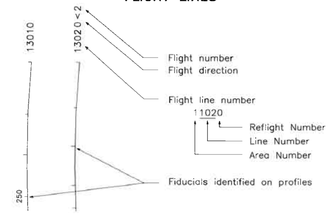
FUGRO AIRBORNE SURVEYS

TECHNICAL SUMMARY

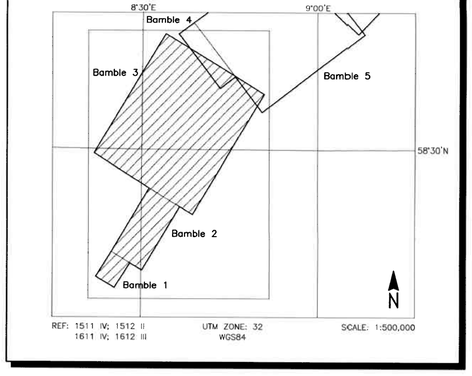
Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^v

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

FLIGHT LINES



LOCATION MAP



SULFIDMALM A/S

BAMBLE 1-3 AREAS, NORWAY

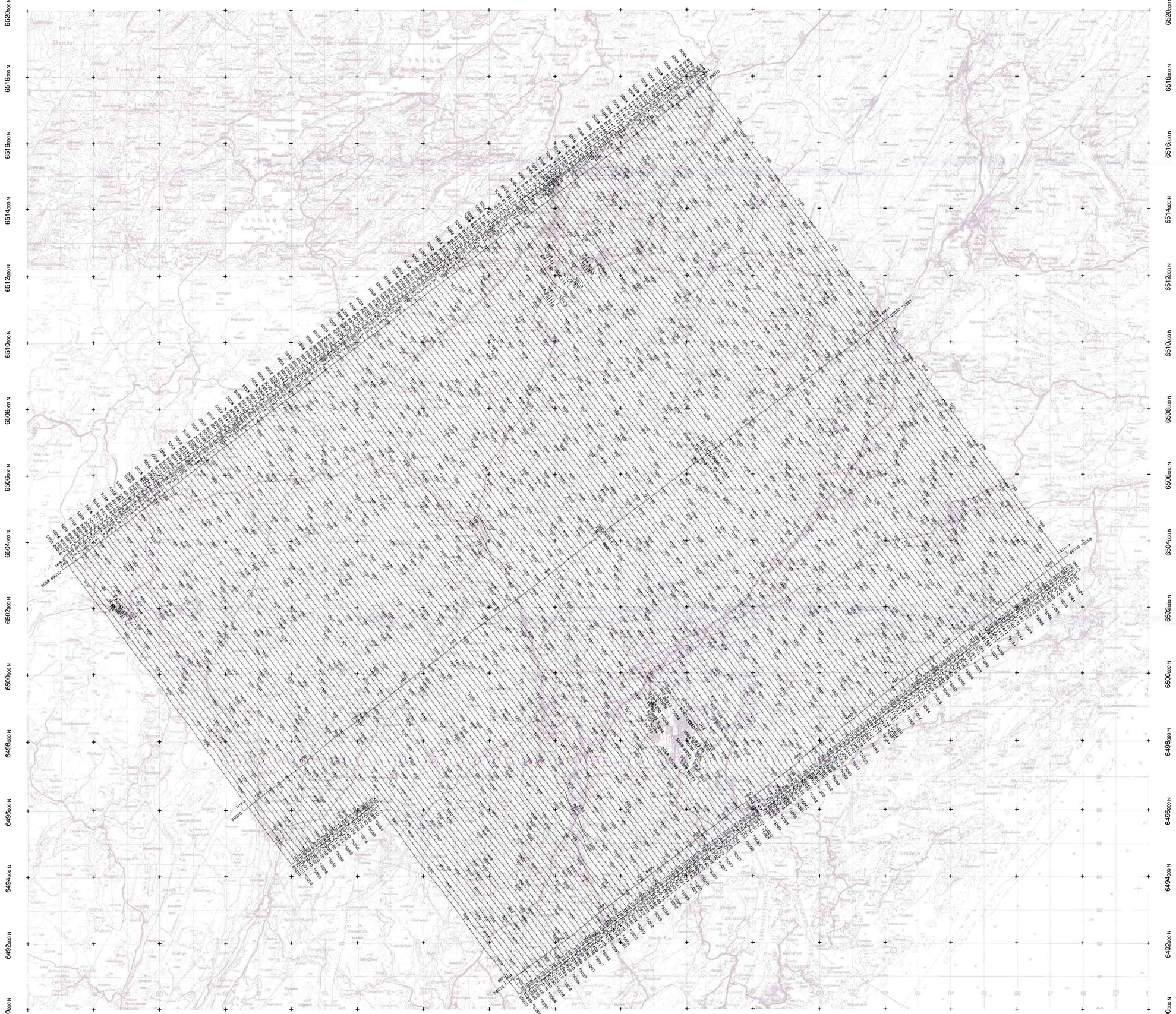
FLIGHT LINES

FUGRO DIGHEM^v SURVEY	REF: see location map	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi
Scale 1:50 000

FUGRO AIRBORNE SURVEYS

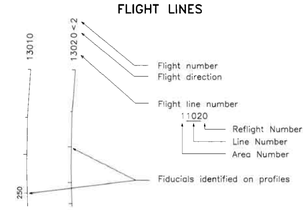


TECHNICAL SUMMARY

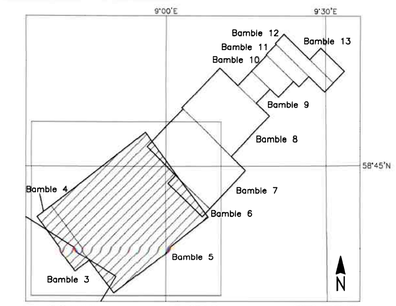
Navigation	Differentially-corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
7900 Hz	.12 ppm	Horizontal coplanar
27200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

FLIGHT LINES



LOCATION MAP



SULFIDMALM A/S

BAMBLE 4-5 AREAS, NORWAY

FLIGHT LINES

FUGRO DIGHEM^V SURVEY	REF: 1612 I,II,III,IV	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi
Scale 1:50 000

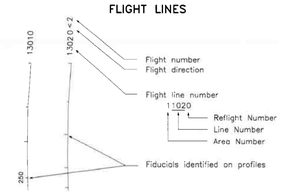
FUGRO AIRBORNE SURVEYS

TECHNICAL SUMMARY

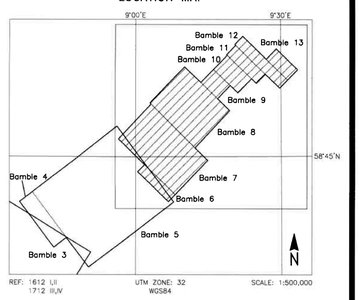
Navigation	Differentially–corrected GPS
Data reduction grid interval	30 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM⁵

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

FLIGHT LINES



LOCATION MAP



SULFIDMALM A/S

BAMBLE 6–13 AREAS, NORWAY

FLIGHT LINES

FUGRO DIGHEM⁵ SURVEY	REF: 1612 I,II; 1712 III,IV	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi
Scale 1:50 000

FUGRO AIRBORNE SURVEYS

TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	20 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V

Frequency	Sensitivity	Coil Orientation
1000 Hz	.08 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◑	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	<1 siemens
–	✳	Questionable anomaly

Anomaly identifier

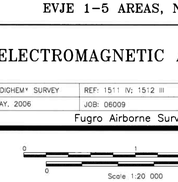
Depth is
: 15 m
: 30 m
: 45 m
: 60 m

Interpretive symbol

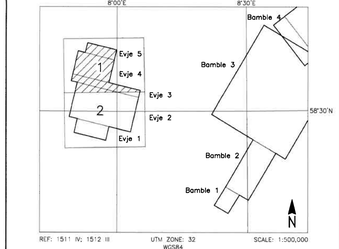
Inphase and Quadrature of coaxial coil is greater than
. 5 ppm
.. 10 ppm
... 15 ppm
.... 20 ppm

Interpretive symbol	Conductor ("model")
B	Bedrock conductor
D	Narrow bedrock conductor ("thin dike")
S	Conductive cover ("horizontal thin sheet")
H	Broad conductive rock unit, deep conductive weathering, thick conductive cover ("half space")
E	Edge of broad conductor ("edge of half space")
L	Culture, e.g. power line, metal building or fence

FLIGHT LINES WITH EM ANOMALIES



LOCATION MAP



SULFIDMALM A/S

EVJE 1–5 AREAS, NORWAY

ELECTROMAGNETIC ANOMALIES

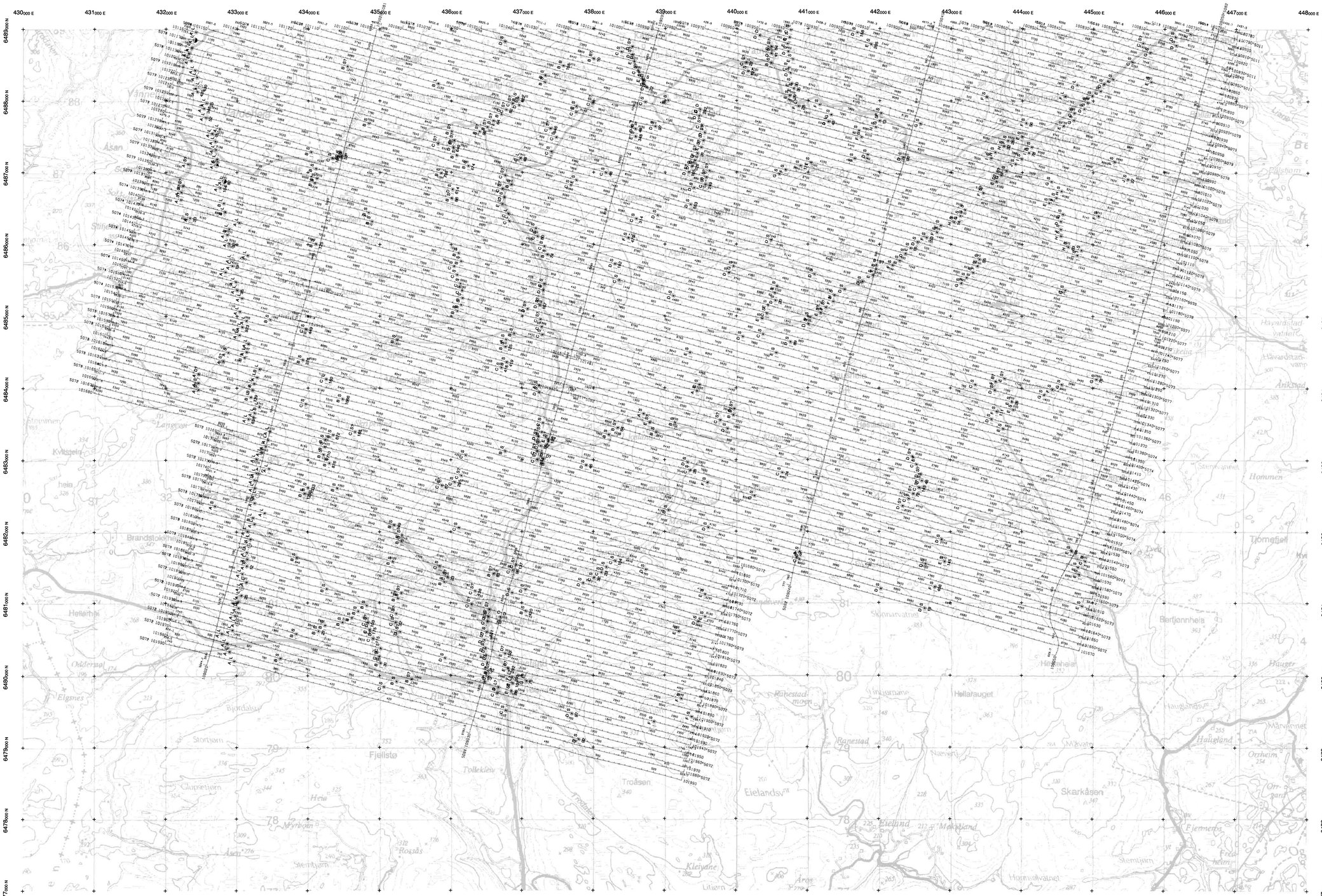
FUGRO DIGHEM^V SURVEY	REF: 1511 IV; 1512 III	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 Km
0 1 Mi.
Scale 1:20 000

FUGRO

FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

Navigation	Differentially-corrected GPS
Data reduction grid interval	20 metres
Terrain clearance	Helicopter 57 m
	Electromagnetic sensor 30 m
	Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

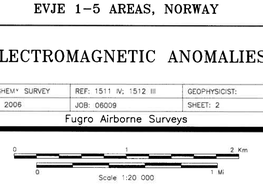
ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◑	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	○	< 1 siemens
–	✳	Questionable anomaly

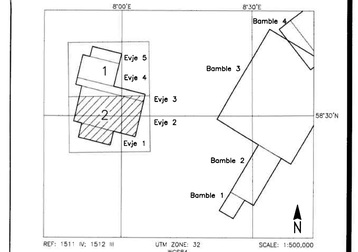
Anomaly identifier — Interpretive symbol — Depth is greater than: 15 m, 30 m, 45 m, 60 m — Inphase and Quadrature of coaxial coil is greater than: 5 ppm, 10 ppm, 15 ppm, 20 ppm

Interpretive symbol	Conductor ("model")
B	Bedrock conductor
D	Narrow bedrock conductor ("thin dike")
S	Conductive cover ("horizontal thin sheet")
H	Broad conductive rock unit, deep conductive weathering, thick conductive cover ("half space")
E	Edge of broad conductor ("edge of half space")
L	Culture, e.g. power line, metal building or fence

FLIGHT LINES WITH EM ANOMALIES



LOCATION MAP



SULFIDMALM A/S

EVJE 1–5 AREAS, NORWAY

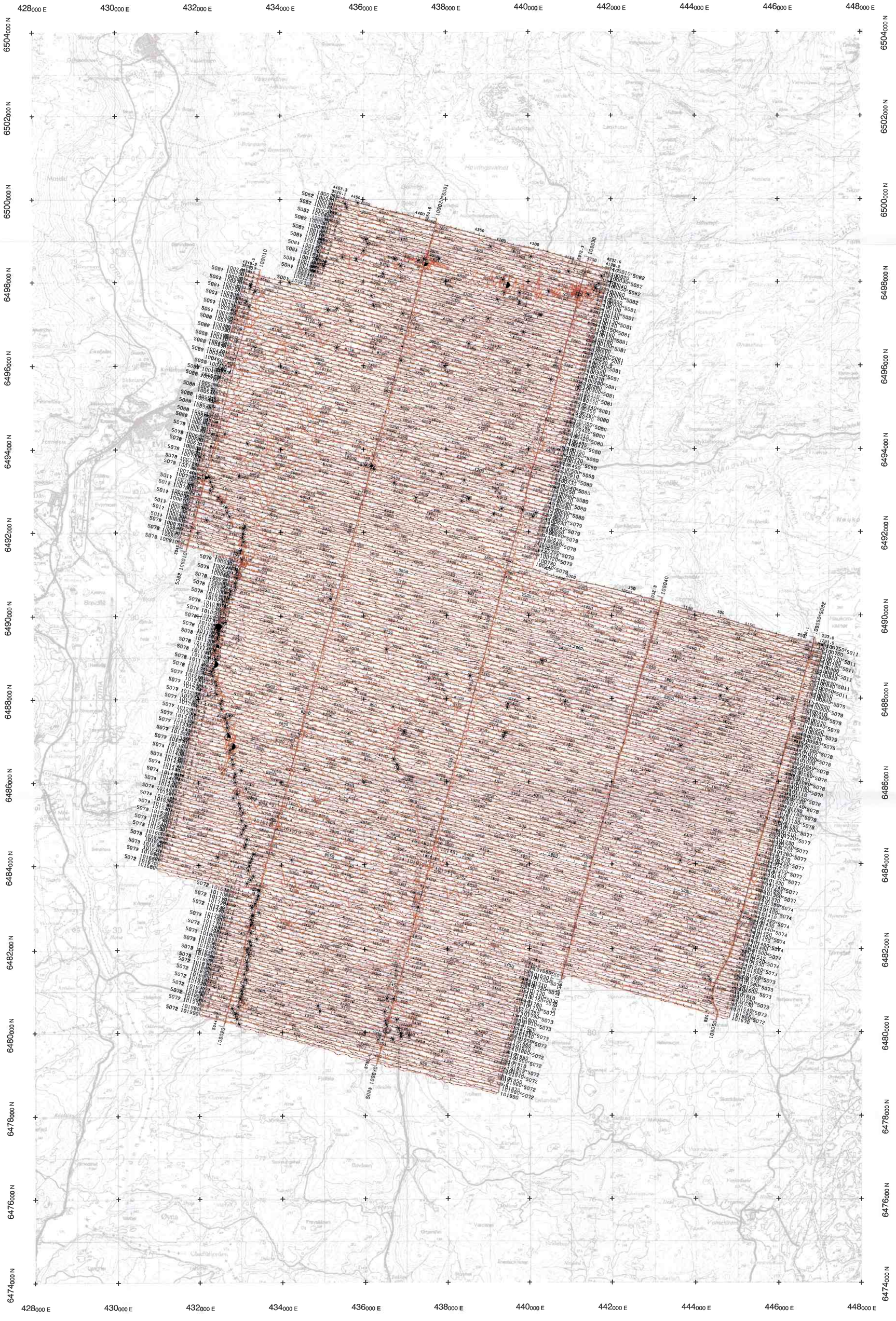
ELECTROMAGNETIC ANOMALIES

FUGRO DIGHEM+ SURVEY	REF: 1511 IV; 1512 III	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 2

Fugro Airborne Surveys

0 1 2 Km
0 1 Mi
Scale 1:20 000

FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

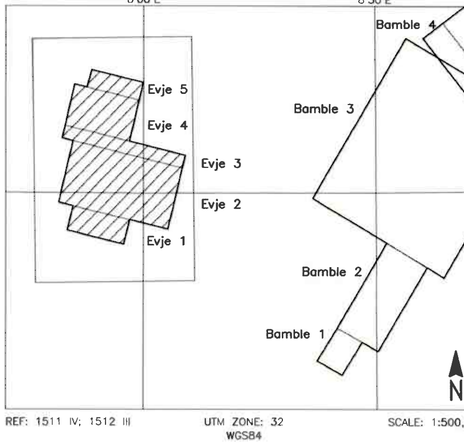
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Data reduction grid interval	20 metres
Terrain clearance	Helicopter 57 m Electromagnetic sensor 30 m Magnetometer 30 m
Data sampling interval	0.1 second
Magnetics system / separation	Dual sensor horizontal gradiometer / 5 m
Magnetometer / sensitivity	Cesium / 0.01 nT
Electromagnetic system	DIGHEM^V

Frequency	Sensitivity	Coil Orientation
1000 Hz	.06 ppm	Vertical coaxial
5500 Hz	.12 ppm	Vertical coaxial
900 Hz	.12 ppm	Horizontal coplanar
7200 Hz	.24 ppm	Horizontal coplanar
56000 Hz	.60 ppm	Horizontal coplanar

ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
5	◕	20–50 siemens
4	◔	10–20 siemens
3	⊕	5–10 siemens
2	○	1–5 siemens
1	◌	< 1 siemens
–	×	Questionable anomaly

FLIGHT LINES



EM INPHASE & QUADRATURE PROFILES

Coaxial inphase 5 ppm/mm

Coaxial quadrature 5 ppm/mm

LOCATION MAP

SULFIDMALM A/S

EVJE 1–5 AREAS, NORWAY

EM COLOUR PROFILES (1000 Hz Coaxial)

FUGRO DIGHEM^V SURVEY	REF: 1511 IV; 1512 III	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

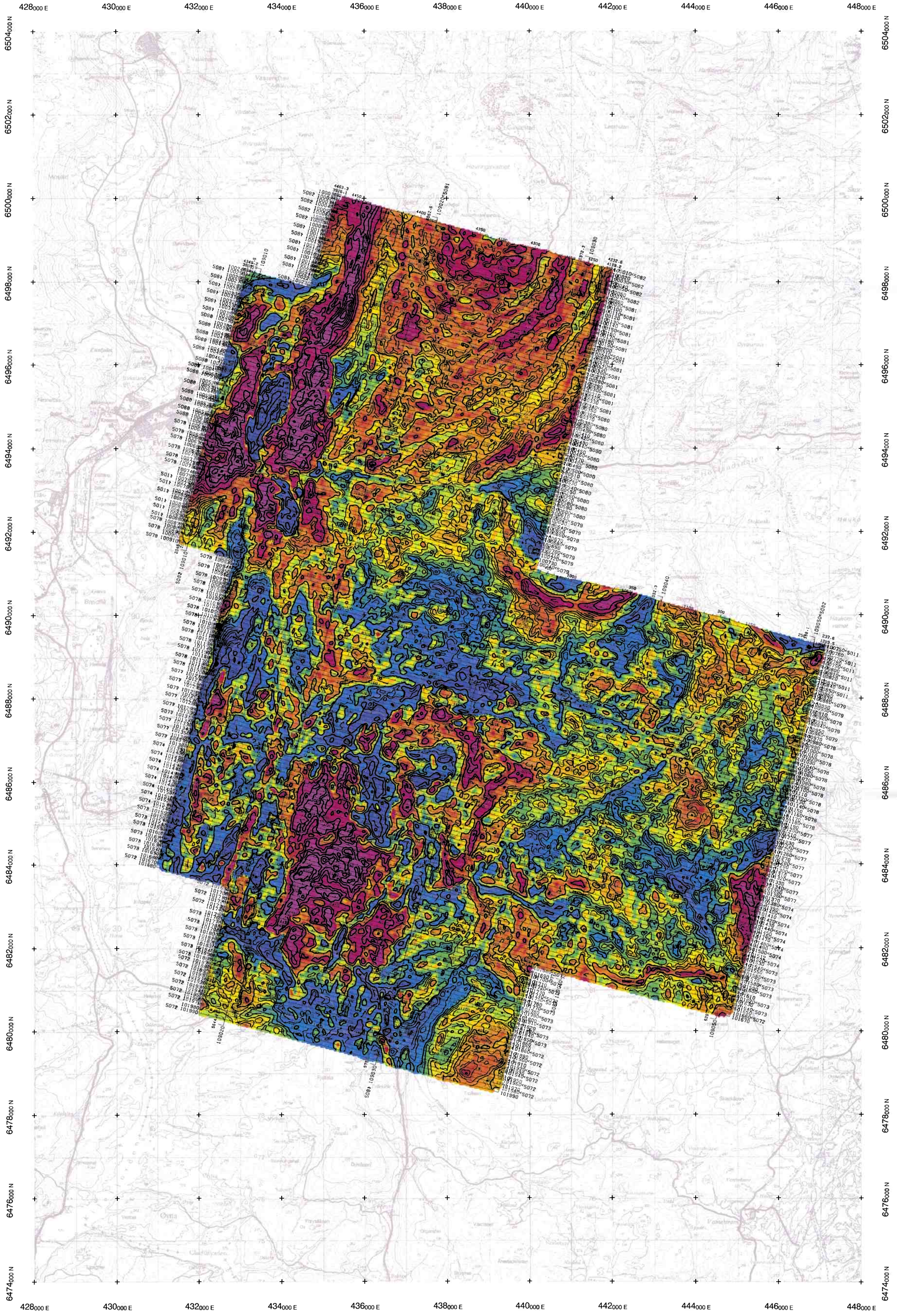
Fugro Airborne Surveys

0 1 2 3 4 5 Km

0 1 2 3 Mi

Scale 1:50 000

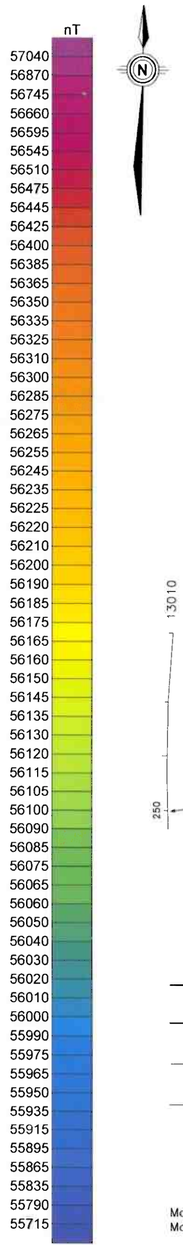
FUGRO AIRBORNE SURVEYS



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ELECTROMAGNETIC ANOMALIES

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–	×	Questionable anomaly

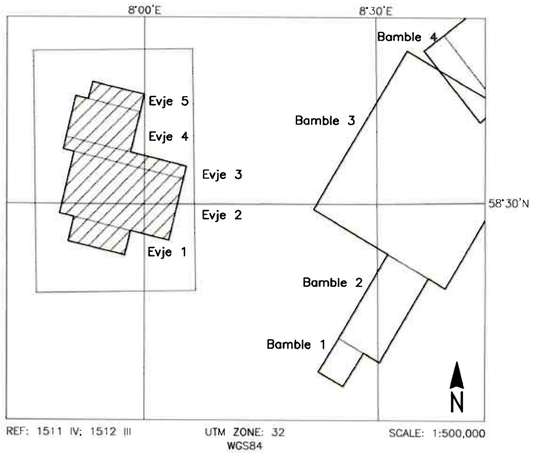
FLIGHT LINES

TOTAL MAGNETIC FIELD CONTOURS

250 nT
50 nT
10 nT
5 nT
magnetic low

Magnetic inclination within the survey area: 72 degrees N
Magnetic declination within the survey area: 0 degrees E

LOCATION MAP



SULFIDMALM A/S

EVJE 1–5 AREAS, NORWAY

TOTAL MAGNETIC FIELD

Horizontal Gradient Enhanced

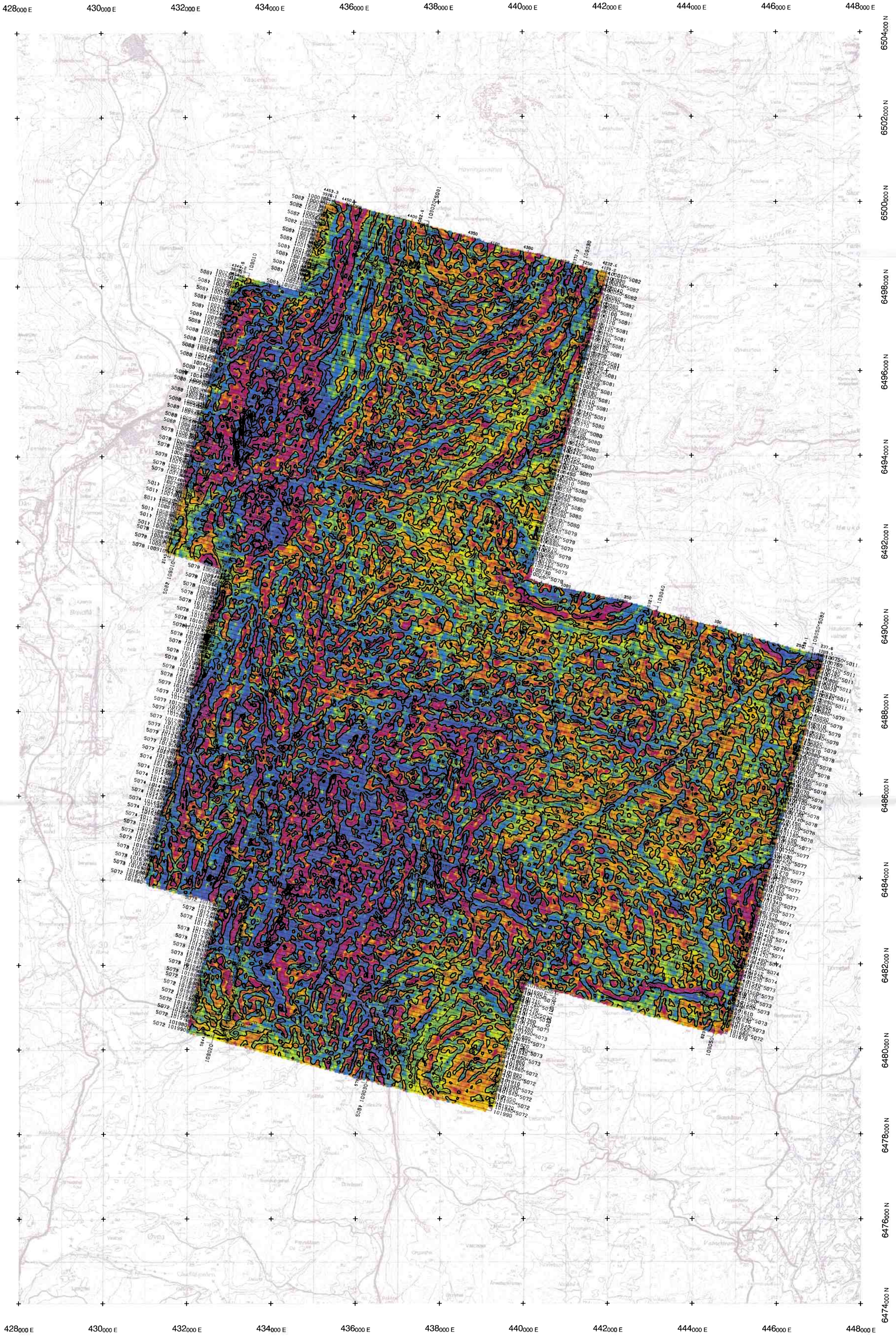
FUGRO DIGHEM^V SURVEY	REF: 1511 IV; 1512 III	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi

Scale 1:50 000

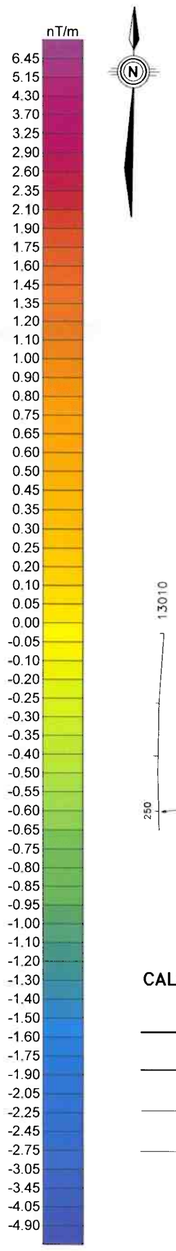
FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

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Electromagnetic system	DIGHEM^V

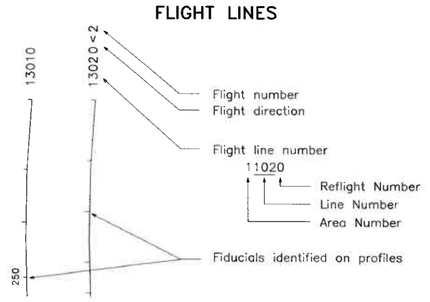
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1	◌	< 1 siemens
–	×	Questionable anomaly

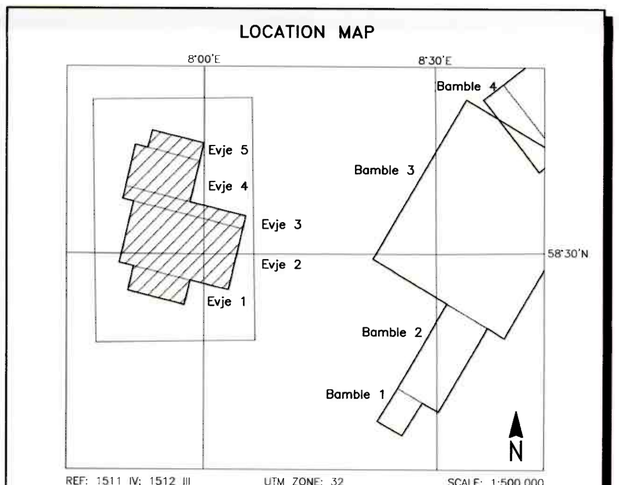
FLIGHT LINES



CALCULATED VERTICAL GRADIENT CONTOURS

———	2.5 nT/metre
———	0.5 nT/metre
———	0.1 nT/metre
— — — —	0.05 nT/metre

LOCATION MAP



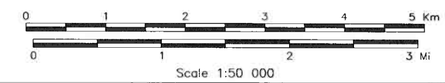
SULFIDMALM A/S

EVJE 1–5 AREAS, NORWAY

CALCULATED VERTICAL MAGNETIC GRADIENT

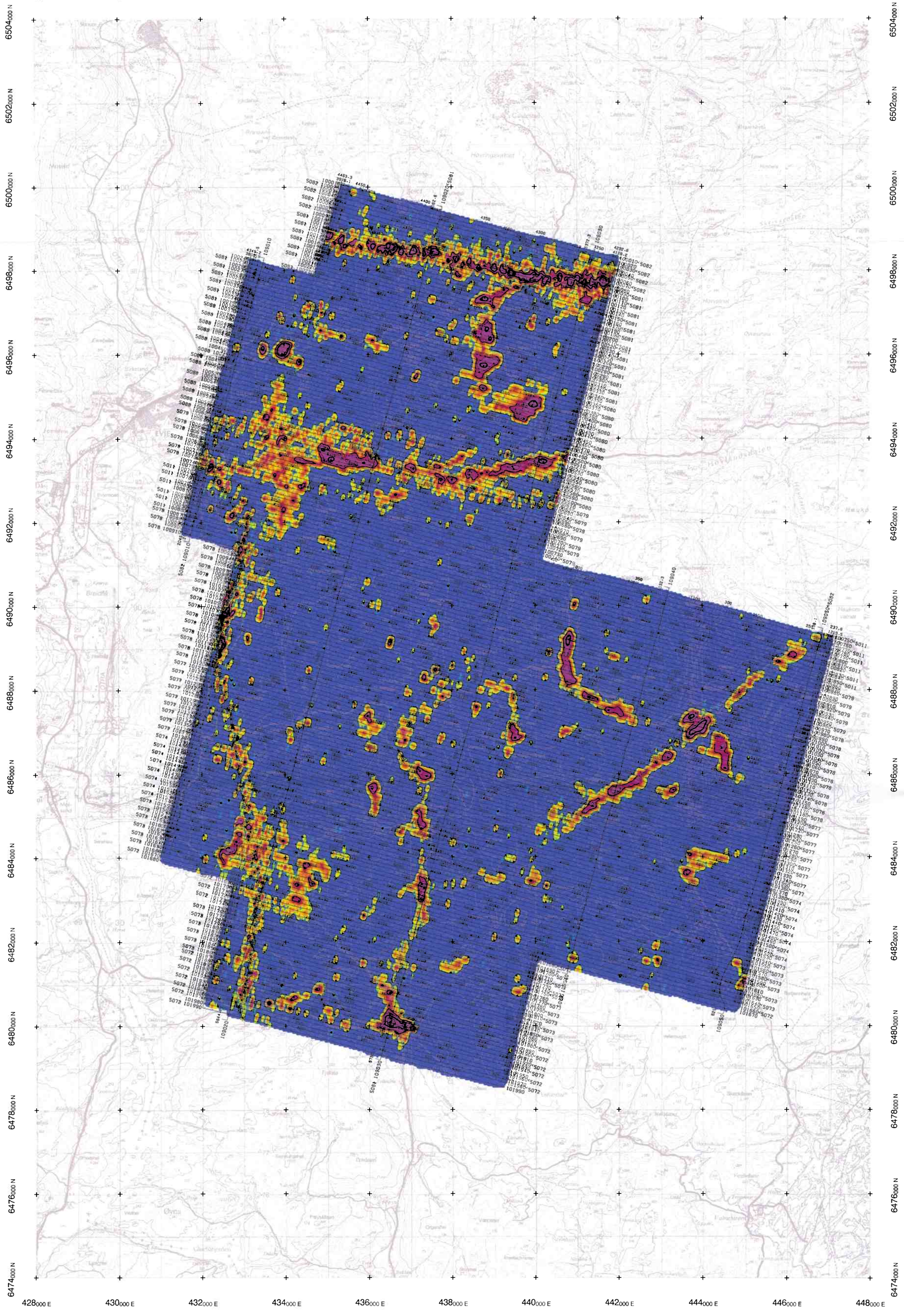
FUGRO DIGHEM^V SURVEY	REF: 1511 IV; 1512 III	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys



Scale 1:50 000

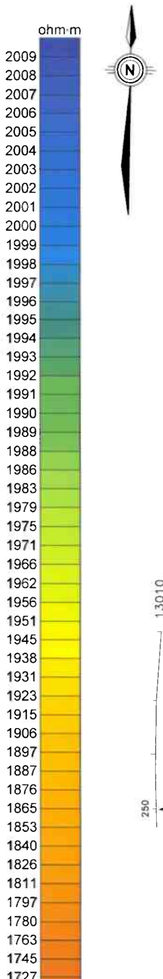
FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

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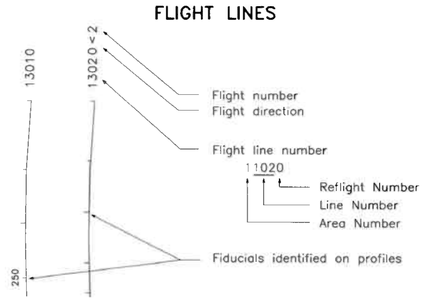




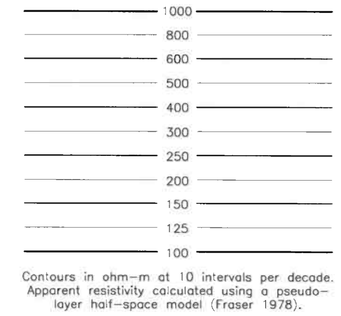
ELECTROMAGNETIC ANOMALIES

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FLIGHT LINES

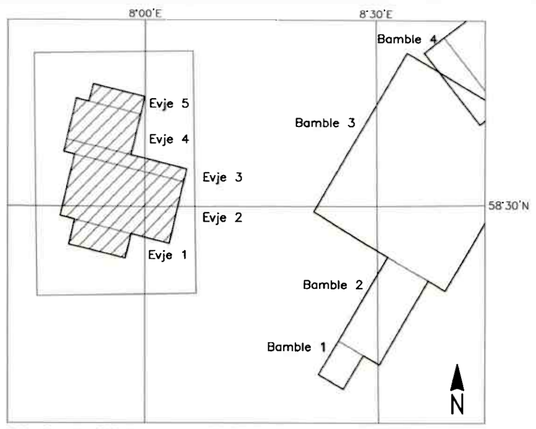


RESISTIVITY CONTOURS



Contours in ohm-m at 10 intervals per decade. Apparent resistivity calculated using a pseudo-layer half-space model (Fraser 1978).

LOCATION MAP



SULFIDMALM A/S

EVJE 1-5 AREAS, NORWAY

APPARENT RESISTIVITY 900 Hz COPLANAR

FUGRO DIGHEM^V SURVEY	REF: 1511 IV; 1512 III	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

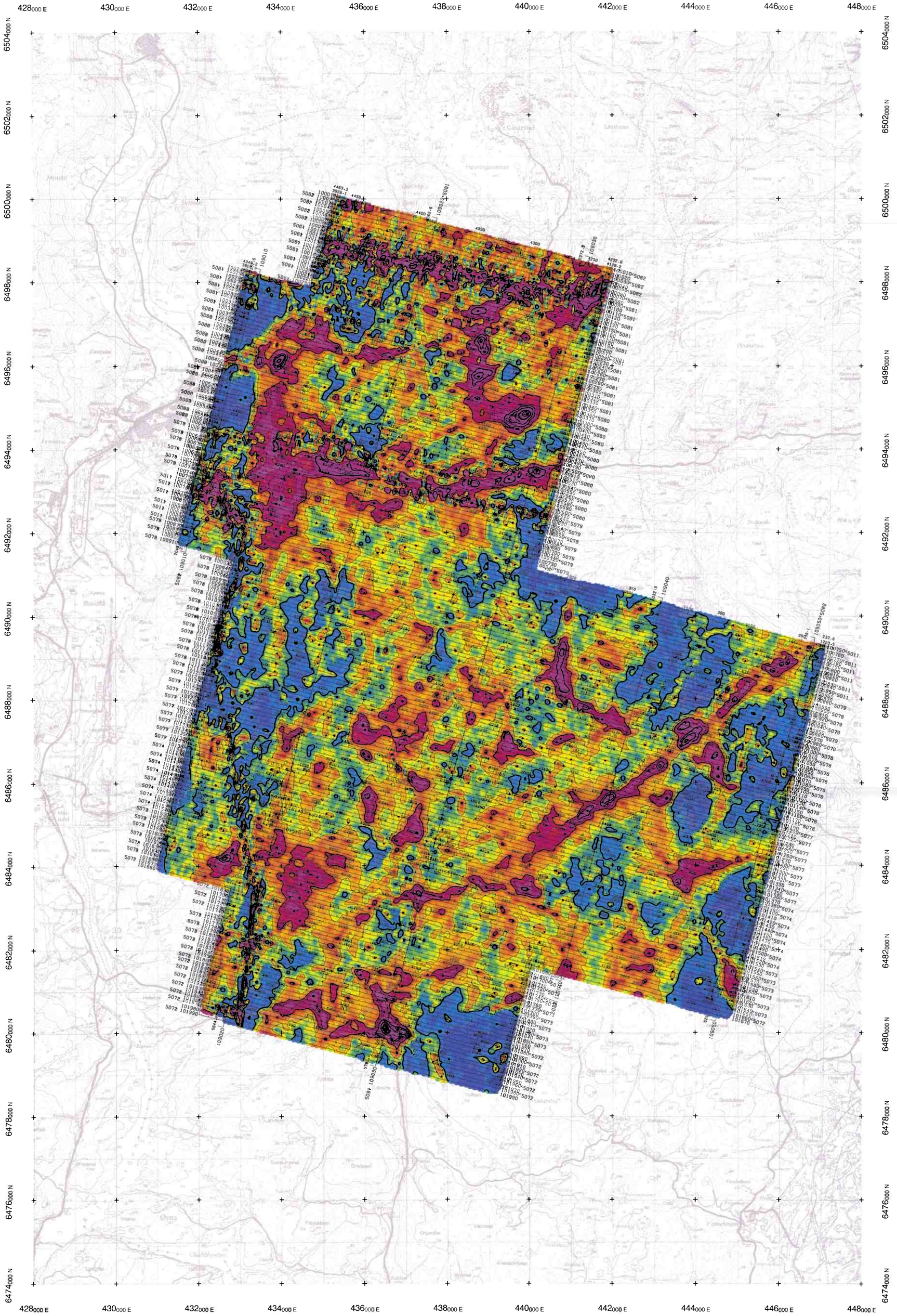
Fugro Airborne Surveys



Scale 1:50 000

FUGRO

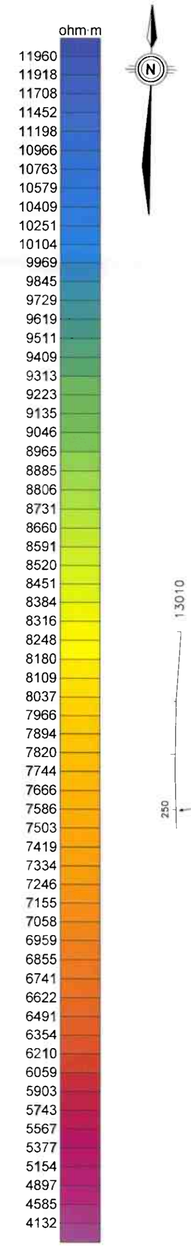
FUGRO AIRBORNE SURVEYS



TECHNICAL SUMMARY

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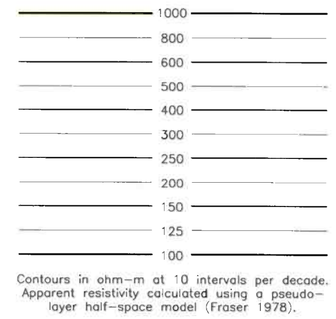


ELECTROMAGNETIC ANOMALIES

Grade	Anomaly	Conductance
7	●	>100 siemens
6	◕	50–100 siemens
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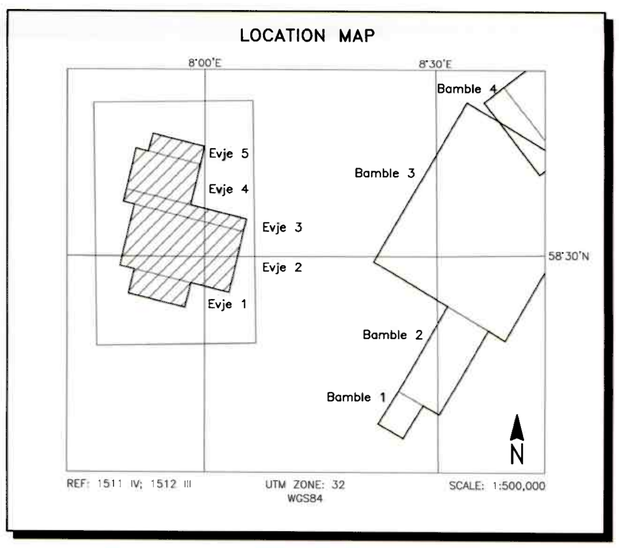
FLIGHT LINES

RESISTIVITY CONTOURS



Contours in ohm-m at 10 intervals per decade. Apparent resistivity calculated using a pseudo-layer half-space model (Fraser 1978).

LOCATION MAP



SULFIDMALM A/S

EVJE 1–5 AREAS, NORWAY

APPARENT RESISTIVITY
7200 Hz COPLANAR

FUGRO DIGHEM^V SURVEY	REF: 1511 IV; 1512 III	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

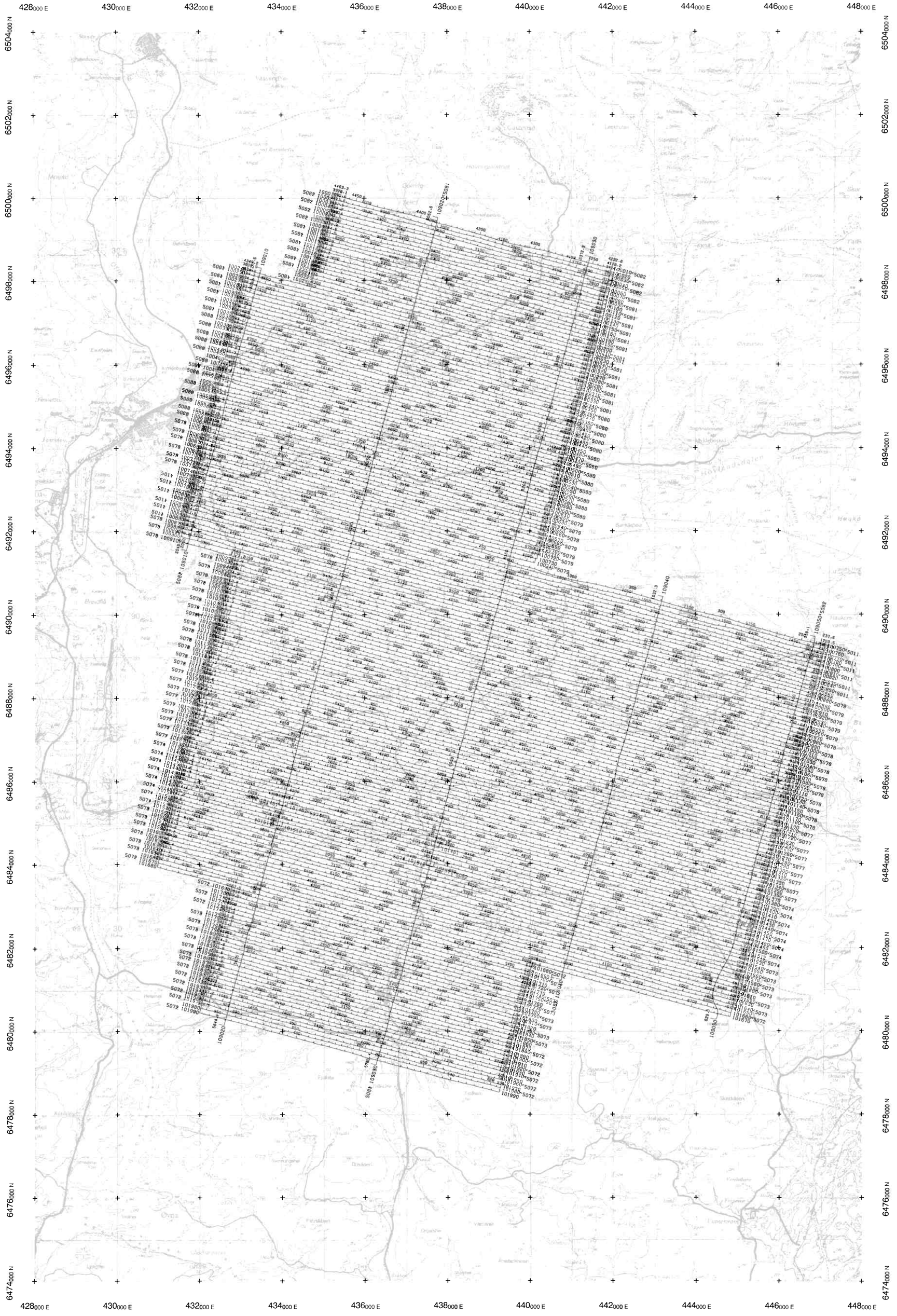
Fugro Airborne Surveys

0 1 2 3 4 5 Km
0 1 2 3 Mi

Scale 1:50 000

FUGRO

FUGRO AIRBORNE SURVEYS

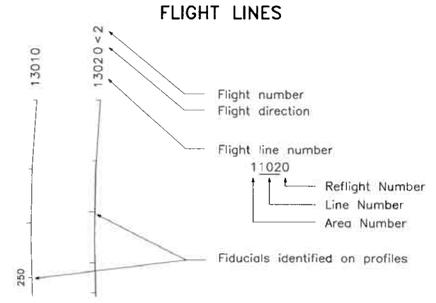


TECHNICAL SUMMARY

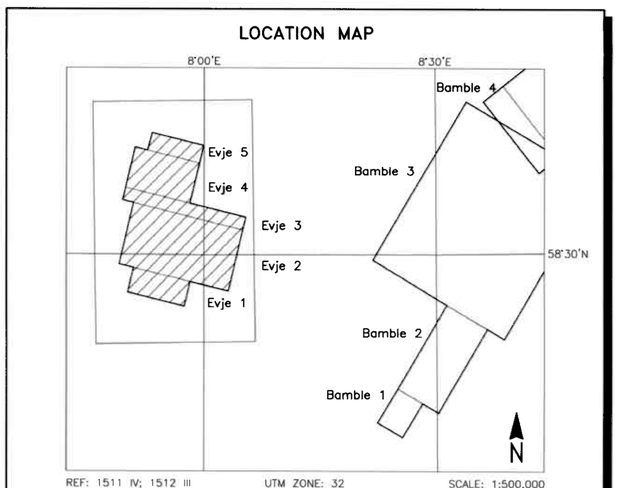
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FLIGHT LINES



LOCATION MAP



SULFIDMALM A/S

EVJE 1-5 AREAS, NORWAY

FLIGHT LINES

FUGRO DIGHEM^v SURVEY	REF: 1511 IV; 1512 III	GEOPHYSICIST:
DATE: MAY, 2006	JOB: 06009	SHEET: 1

Fugro Airborne Surveys

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0 1 2 3 Mi
Scale 1:50 000

FUGRO AIRBORNE SURVEYS