DETAILED LOG

Hole Number: ES2004-16

Units: METRIC

Project Name:	Norway - Espedalen	Primary Coordinates	Grid: UTM84-32N	Destination Coordinates	Grid: UTM:	Collar Dip:	-63.00
Project Number:	201	North:	6807680.39	North:	61.40	Collar Az:	230.00
Location:	Surface	East:	532799.65	East:	9.61	Length:	182.10 (m)
		Elev:	1129.08	Elev:	1129.08	Start Depth:	0.00 (m)
Date Started:	Sep 23, 2004	Collar Survey:	Y	Plugged:	N	Contractor:	Geo Drilling A/S	Final Depth:	182.10 (m)
Date Completed:	Sep 30, 2004	Multishot Survey:	N	Hole Size:	TT46	Core Storage:	Strand Fjellstue		
Logged By:	P. Tirschmann	Pulse EM Survey:	Y	Casing:	Left in Hole, capped				

Comments: Purpose: Test UTEM conductor ESP_09_07. Conductivity = 600, 900 Siemens (2 plates)

Result: Hole intersected numerous cm to dm scale mafic/ultramafic zones (dykes?) within anorthositic rocks, a number of which were mineralized containing fracture-controlled, stringer and/or disseminated pyrrhotite±py±cpy. Best mineralization:
121.90-123.90m - UM schist with 5-15% po stringers
127.80-128.80m - UM schist with 25% po-py-cpy stringers & one 5cm massive vein

Assays: 0.32% Ni, <0.0.5% Cu, 0.03% Co / 0.50m (122.90-123.40m)
0.43% Ni, 0.14% Cu, 0.08% Co / 1.00m (127.80-128.80m)

Borehole UTEM: In-hole response centered on 126m with conductance of < 1000 siemens; off-hole response @ 122m and < 10m up-dip and to north of hole (conductance > 1000 siemens). Target not fully tested.

Lithological interpretation: Anorthositic rocks crosscut by narrow mineralized and non-mineralized ultramafic dykes (?), mafic dykes and mafic, alkaline dykes.

Sample Averages

Detailed Lithology			Assay Data						
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
0	2.00	C, Casing							

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Detailed Lithology

From (m)	To (m)	Lithology
2.00	138.20	4, Anorthosite / Anorthosite Gabbro Coarse grained to very coarse grained mottled and foliated anorthosite and gabbroic anorthosite. Consists of 70-85% white to light grey plagioclase and 15-30% dark green pyroxene. Pyroxenes range in size from 2-20mm, are variably chloritized and are commonly flattened defining foliation. Anorthositic rocks are locally cross-cut by narrow (cm to dm scale) mafic/ultramafic dykes including a) pyroxenite/UM schist b) fg mafic dykes and c) fine grained norite dykes (eg. 71.75-71.90m., 135.4-135.8m). Between 60m and 138.2m, the unit becomes more inhomogeneous due to the presence of approx. 10% dark green cm to dm scale ultramafic bands (schlieren) and dykes. Ultramafic locally contains fracture-controlled , stringer and/or disseminated po (eg. 63.25-63.35m, 67.2-67.3m, 84.3-84.6m, 92-93m, 117.8-118.8m, 126.4-126.7m). 81-98m: Zone of moderate shearing and deformation. Rocks are strongly foliated and display small-scale folding and crenulation. Conductivity: Non-conductive Magnetic susceptibility: < 0.5. Intepretation: similar setting to P2, P5 & P1 areas with older anorthositic terrain intruded by narrow mineralized ultramafic bodies and younger mafic dykes. Mineralization 40.00 - 40.75 : Po Pyrrhotite, F Fracture Controlled, 7% 7% fracture-controlled po in a pyroxenite dyke 83.30 - 84.60 : Po Pyrrhotite, STR Stringers, 4% 3-5% po stringers in UM dyke 92.00 - 92.40 : Po Pyrrhotite, STR Stringers, 5% 5% po stringers in chloritic UM schist 117.80 - 118.80 : Po Pyrrhotite, STR Stringers, 2% 2% po stringers in UM schist 123.90 - 126.10 : Po Pyrrhotite, F Fracture Controlled, 0.5% Trace to 1% po 126.10 - 126.90 : Po Pyrrhotite, STR Stringers, 3% 3% po stringers and disseminations Alteration 2.00 - 138.20 :SE Sericite, F Fracture Controlled, M Moderate Patchy to fracture controlled moderate sausseritization/sericitization throughout Structure 2.30 - 2.31 : Sm General Foliation, 37 Deg to CA 14.30 - 14.31 : Sm General Foliation, 55 Deg to CA 38.20 - 38.21 : Sm General Foliation, 55 Deg to CA 51.50 - 51.51 : Sm General Foliation, 50 Deg to CA 65.20 - 65.21 : Sm General Foliation, 50 Deg to CA 90.10 - 90.11 : Sm General Foliation, 60 Deg to CA

Assay Data

Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
PG03207	39.45	40.00	0.55	0.0250	0.0250	0.0100
PG03208	40.00	40.75	0.75	0.0600	0.0800	0.0100
PG03209	40.75	41.50	0.75	0.0250	0.0250	0.0100
PG03210	84.30	84.60	0.30	0.0250	0.0250	0.0300
PG03211	92.00	92.40	0.40	0.0250	0.0250	0.0100
PG03212	117.80	118.80	1.00	0.0250	0.0250	0.0100
PG03213	121.30	121.90	0.60	0.0250	0.0250	0.0100
PG03214	121.90	122.90	1.00	0.0800	0.0250	0.0100
PG03215	122.90	123.40	0.50	0.3200	0.0250	0.0300
PG03216	123.40	123.90	0.50	0.0250	0.0250	0.0200
PG03217	123.90	125.00	1.10	0.0250	0.0250	0.0100
PG03218	125.00	126.10	1.10	0.0250	0.0250	0.0300
PG03219	126.10	126.90	0.80	0.0600	0.0250	0.0100
PG03220	126.90	127.80	0.90	0.0250	0.0250	0.0100
PG03221	127.80	128.80	1.00	0.4300	0.1400	0.0800
PG03222	128.80	129.80	1.00	0.0250	0.0250	0.0100
PG03223	131.70	132.60	0.90	0.0250	0.0250	0.0100
PG03224	132.60	133.40	0.80	0.0250	0.0250	0.0100

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Units: METRIC

Detailed Lithology			Assay Data						
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		Structure							
		100.00 - 100.01 : Sm General Foliation, 50 Deg to CA							
		110.10 - 110.11 : Sm General Foliation, 45 Deg to CA							
		119.90 - 119.91 : Sm General Foliation, 60 Deg to CA							
		137.30 - 137.31 : Sm General Foliation, 55 Deg to CA							
		RQD							
		2.00 - 5.00 : 44.00 % RQD 100.00 % Core							
		5.00 - 8.00 : 42.00 % RQD 100.00 % Core							
		8.00 - 11.00 : 80.00 % RQD 100.00 % Core							
		11.00 - 14.00 : 64.00 % RQD 100.00 % Core							
		14.00 - 17.00 : 67.00 % RQD 100.00 % Core							
		17.00 - 20.00 : 84.00 % RQD 100.00 % Core							
		20.00 - 23.00 : 59.00 % RQD 100.00 % Core							
		23.00 - 26.00 : 56.00 % RQD 100.00 % Core							
		26.00 - 29.00 : 70.00 % RQD 100.00 % Core							
		29.00 - 32.00 : 52.00 % RQD 100.00 % Core							
		Broken core 29.5 - 29.7m							
		32.00 - 35.00 : 58.00 % RQD 100.00 % Core							
		35.00 - 38.00 : 69.00 % RQD 100.00 % Core							
		38.00 - 41.00 : 75.00 % RQD 100.00 % Core							
		41.00 - 44.00 : 84.00 % RQD 100.00 % Core							
		44.00 - 47.00 : 77.00 % RQD 100.00 % Core							
		47.00 - 50.00 : 83.00 % RQD 100.00 % Core							
		50.00 - 53.00 : 69.00 % RQD 100.00 % Core							
		53.00 - 56.00 : 63.00 % RQD 100.00 % Core							
		56.00 - 59.00 : 72.00 % RQD 100.00 % Core							
		59.00 - 62.00 : 70.00 % RQD 100.00 % Core							
		62.00 - 65.00 : 64.00 % RQD 100.00 % Core							
		65.00 - 68.00 : 87.00 % RQD 100.00 % Core							
		68.00 - 71.00 : 62.00 % RQD 100.00 % Core							
		71.00 - 74.00 : 79.00 % RQD 100.00 % Core							
		74.00 - 77.00 : 76.00 % RQD 100.00 % Core							
		77.00 - 80.00 : 91.00 % RQD 100.00 % Core							
		80.00 - 83.00 : 36.00 % RQD 100.00 % Core							
		Broken core 82.3 - 83m							
		83.00 - 86.00 : 78.00 % RQD 100.00 % Core							
		86.00 - 89.00 : 79.00 % RQD 100.00 % Core							
		89.00 - 92.00 : 75.00 % RQD 100.00 % Core							
		92.00 - 95.00 : 54.00 % RQD 100.00 % Core							

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Detailed Lithology			Assay Data						
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		RQD 95.00 - 98.00 : 85.00 % RQD 100.00 % Core Broken core 95.7 - 95.8m 98.00 - 101.00 : 91.00 % RQD 100.00 % Core 101.00 - 104.00 : 62.00 % RQD 100.00 % Core 104.00 - 107.00 : 80.00 % RQD 100.00 % Core 107.00 - 110.00 : 73.00 % RQD 100.00 % Core 110.00 - 113.00 : 72.00 % RQD 100.00 % Core 113.00 - 116.00 : 87.00 % RQD 100.00 % Core 116.00 - 119.00 : 60.00 % RQD 100.00 % Core 119.00 - 122.00 : 57.00 % RQD 100.00 % Core 122.00 - 125.00 : 59.00 % RQD 100.00 % Core 125.00 - 128.00 : 34.00 % RQD 100.00 % Core 128.00 - 131.00 : 60.00 % RQD 100.00 % Core Broken core 128.8m 131.00 - 134.00 : 61.00 % RQD 100.00 % Core Broken core 131.6 - 131.7m 134.00 - 137.00 : 57.00 % RQD 100.00 % Core 137.00 - 140.00 : 89.00 % RQD 100.00 % Core MINOR INTERVALS: Minor Interval: 20 - 20.2 MD, Mafic Dike Fine grained dark green mafic dyke with trace po. Contacts at 20° to CA. Minor Interval: 40 - 40.75 PYXT, Pyroxenite Medium grained, dark green pyroxenite dyke containing 5-10% pyrrhotite as coarse fracture controlled blebs and minor disseminations. Trace cp. Contacts irregular. Minor Interval: 93.6 - 96.4 MD, Mafic Dike Fine grained, well foliated to sheared mafic dyke containing trace sulphide. Contacts parallel to foliation. Minor Interval: 121.9 - 123.9 6e, Ultramafic Schist Fine grained, dark green, mineralized, chloritized, serpentinized schist containing 5-15% po stringers. Contacts parallel to foliation. Mineralization 121.90 - 122.90 : Po Pyrrhotite, STR Stringers, 5% 122.90 - 123.40 : Po Pyrrhotite, STR Stringers, 15% 123.40 - 123.90 : Po Pyrrhotite, D Disseminated, 0.5%						

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Detailed Lithology			Assay Data						
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
		MINOR INTERVALS: Minor Interval: 127.8 - 128.8 6e, Ultramafic Schist Fine grained, dark green, mineralized, chloritized, serpentinized schist containing 25% sulphides including: 20% po, 3% py, 2% pn, tr cp in stringers and one 5cm wide massive vein at uphole contact. Pyrite occurs as coarse grains up to 8mm in diameter. Pentlandite is intermixed with po and occurs as grains up to 1mm in diameter. Contacts parallel to foliation. Mineralization 127.80 - 128.80 : Po Pyrrhotite, STR Stringers, 25% 25% Sulphides: 20% po, 3% py, 2% pn; tr cp in stringers & one 5cm vein Minor Interval: 131.7 - 133.4 6e, Ultramafic Schist Fine grained, dark green, mineralized, chloritized, serpentinized schist containing 1% po disseminated and along fractures. Sheared at uphole contact; downhole contact irregular.							
138.20	153.10	MD, Mafic Dike Fine grained, massive to very weakly foliated, equigranular mafic dyke consisting of 65% mafic minerals and 35% plagiclase. 1-3% white carbonate veinlets and fracture fillings. Trace po ± py along fractures and disseminated. Uphole contact at 57° to CA; downhole contact at 67° to CA. Conductivity: Non-conductive Magnetic susceptibility: <1 Interpretation: Late mafic dyke. RQD 140.00 - 143.00 : 38.00 % RQD 100.00 % Core 143.00 - 146.00 : 41.00 % RQD 100.00 % Core 146.00 - 149.00 : 65.00 % RQD 100.00 % Core Broken core 147.9 - 148m 149.00 - 152.00 : 69.00 % RQD 100.00 % Core 152.00 - 155.00 : 66.00 % RQD 100.00 % Core						

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Detailed Lithology			Assay Data						
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
153.10	169.70	4, Anorthosite / Anorthosite Gabbro Anorthosite and anorthositic gabbro as 2-138.2m. 153.1-160.0m: Grey anorthosite 160-169.7m: White and green anorthositic gabbro with striped and granulated appearance due to shearing and tectonism. Non-conductive. Magnetic susceptibilities typically < 1. Structure 154.20 - 154.21 : Sm General Foliation, 70 Deg to CA 161.80 - 161.81 : Sm General Foliation, 72 Deg to CA RQD 155.00 - 158.00 : 75.00 % RQD 100.00 % Core 158.00 - 161.00 : 74.00 % RQD 100.00 % Core 161.00 - 164.00 : 67.00 % RQD 100.00 % Core 164.00 - 167.00 : 70.00 % RQD 100.00 % Core 167.00 - 170.00 : 69.00 % RQD 100.00 % Core							
169.70	182.10	8f, Aphantic UM Dyke Very fine grained, dark grey, magnetic ultramafic dyke or body resembling narrower dykes intersected in Jorstad holes ES2004-14 and 15. Pyroxenitic in composition?(Whole rock sample taken: 180.1-180.3m, PG03226). Uphole contact sharp and chilled at 50° to CA. Non-conductive. Magnetic susceptibility averages 15-20. NOTE: Whole rocks sample PG03226 (180.10-180.30m) yielded a composition similar to an alkaline olivine basalt suggesting the dyke is mafic (versus ultramafic) and of alkaline affinity. RQD 170.00 - 173.00 : 62.00 % RQD 100.00 % Core 173.00 - 176.00 : 57.00 % RQD 100.00 % Core 176.00 - 179.00 : 50.00 % RQD 100.00 % Core 179.00 - 182.10 : 52.00 % RQD 100.00 % Core	PG03226	180.10	180.30	0.20	0.0250	0.0250	0.0100

Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type ASSAY					
PG03207	39.45	40.00	0.0250	0.0250	0.0100
PG03208	40.00	40.75	0.0600	0.0800	0.0100
PG03209	40.75	41.50	0.0250	0.0250	0.0100
PG03210	84.30	84.60	0.0250	0.0250	0.0300
PG03211	92.00	92.40	0.0250	0.0250	0.0100

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Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type ASSAY					
PG03212	117.80	118.80	0.0250	0.0250	0.0100
PG03213	121.30	121.90	0.0250	0.0250	0.0100
PG03214	121.90	122.90	0.0800	0.0250	0.0100
PG03215	122.90	123.40	0.3200	0.0250	0.0300
PG03216	123.40	123.90	0.0250	0.0250	0.0200
PG03217	123.90	125.00	0.0250	0.0250	0.0100
PG03218	125.00	126.10	0.0250	0.0250	0.0300
PG03219	126.10	126.90	0.0600	0.0250	0.0100
PG03220	126.90	127.80	0.0250	0.0250	0.0100
PG03221	127.80	128.80	0.4300	0.1400	0.0800
PG03222	128.80	129.80	0.0250	0.0250	0.0100
PG03223	131.70	132.60	0.0250	0.0250	0.0100
PG03224	132.60	133.40	0.0250	0.0250	0.0100
PG03226	180.10	180.30	0.0250	0.0250	0.0100