

Hole Number: ES2004-08

Units: METRIC

Project Name: Norway - Espedalen	Primary Coordinates Grid: UTM84-32N	Destination Coordinates Grid: UTM:	Collar Dip: -43.95
Project Number: 201	North: 6801300.03	North: 61.34	Collar Az: 234.75
Location: Surface	East: 535129.16	East: 9.66	Length: 85.30 (m)
	Elev: 978.26	Elev: 978.26	Start Depth: 0.00 (m)
Date Started: Aug 24, 2004	Collar Survey: Y	Plugged: N	Contractor: Geo Drilling A/S
Date Completed: Aug 26, 2004	Multishot Survey: Y	Hole Size: TT46	Core Storage: Strand Fjellstue
Logged By: Yannick Beaudoin/P. Tirschmann	Pulse EM Survey: Y	Casing: Left in Hole, capped	Final Depth: 85.30 (m)

Comments: Purpose: Test UTEM conductor ESP_17_17. Conductivity = 500 Siemens

Result: Intersected sausseritized and tecontonized anorthosite intruded by a narrow, schistose, mineralized ultramafic body from 56.25-59.00m. mineralization consists of 10-45% sulphide (po-pn-cp-py) stringers, veinlets and disseminations.

Assays: 2.07% Ni, 1.20% Cu, 0.07% Co / 2.70m (56.30-59.00m)

Borehole UTEM: Symmetric in-hole response centered on 60m, correlates with intersected mineralization.

Lithological interpretation: Mineralized ultramafic dyke (?) intruding anorthositic rocks; all units subsequently tectonized.

Sample Averages

Average Type	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
WEIGHTED	55.80	59.50	3.70	1.5981	0.9159	0.0597
WEIGHTED	57.00	59.00	2.00	2.5225	1.3675	0.0900

Survey Data

Depth (m)	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth (m)	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
0.00	234.75	-43.95	MShot	OK		5.00	234.75	-43.43	MShot	OK	
10.00	235.28	-43.51	MShot	OK		15.00	235.42	-43.48	MShot	OK	
20.00	235.06	-43.76	MShot	OK		25.00	235.59	-43.91	MShot	OK	
30.00	236.49	-43.66	MShot	OK		35.00	235.90	-43.55	MShot	OK	
40.00	235.10	-43.49	MShot	OK		45.00	236.59	-43.52	MShot	OK	
50.00	237.13	-43.47	MShot	OK		55.00	235.29	-43.32	MShot	OK	
60.00	237.71	-43.33	MShot	OK		65.00	237.57	-43.31	MShot	OK	
70.00	236.65	-43.25	MShot	OK		75.00	238.01	-43.21	MShot	OK	
80.00	238.32	-43.05	MShot	OK		83.00	238.40	-43.00	MShot	OK	

Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
0	3.55	C, Casing							

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Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
3.55	56.25	4s, Sausseritized/Tectonized Anorthosite	PG03109	52.00	52.85	0.85	0.0250	0.0250	0.0100
		Medium grained, well foliated, banded sausseritized and tectonized anorthosite. Unit is cross cut by mm to cm scale foliation parallel quartz veins.	PG03110	52.85	54.00	1.15	0.5100	0.3000	0.0300
			PG03111	54.00	55.00	1.00	0.0250	0.0250	0.0100
		Dm to m scale mafic dykes intrude the unit (see Minor Units).	PG03112	55.00	55.80	0.80	0.0250	0.0250	0.0100
			PG00224	55.80	56.30	0.50	0.2200	0.0800	0.0100
		Mineralization: Minor disseminated pyrite can be seen throughout. From 53.8m to 56.25m, patchy stringers of po, py mineralization (<3%) can be seen (related to the mineralized mafic unit below).							
		Trace amounts of very bright green mineral (fuchsite or chloritoid?) observed (eg. 48.8m).							
		Foliation is between 65-85 degrees to core axis.							
		Mineralization							
		52.85 - 54.00 : Po Pyrrhotite, STR Stringers, 4% 3-5% po stringers							
		Structure							
		14.40 - 14.41 : Sm General Foliation, 85 Deg to CA							
		41.50 - 41.51 : Sm General Foliation, 75 Deg to CA							
		54.50 - 54.51 : Sm General Foliation, 90 Deg to CA							
		RQD							
		3.55 - 6.00 : 71.00 % RQD 100.00 % Core							
		6.00 - 9.00 : 70.00 % RQD 100.00 % Core							
		9.00 - 12.00 : 61.00 % RQD 100.00 % Core							
		12.00 - 15.00 : 53.00 % RQD 100.00 % Core							
		15.00 - 18.00 : 48.00 % RQD 100.00 % Core							
		18.00 - 21.00 : 51.00 % RQD 98.00 % Core							
		21.00 - 24.00 : 52.00 % RQD 100.00 % Core							
		24.00 - 27.00 : 40.00 % RQD 100.00 % Core							
		27.00 - 30.00 : 35.00 % RQD 100.00 % Core							
		30.00 - 33.00 : 62.00 % RQD 100.00 % Core							
		33.00 - 36.00 : 29.00 % RQD 98.00 % Core							
		36.00 - 39.00 : 40.00 % RQD 100.00 % Core							
		39.00 - 42.00 : 37.00 % RQD 100.00 % Core							
		42.00 - 45.00 : 34.00 % RQD 100.00 % Core							
		45.00 - 48.00 : 20.00 % RQD 100.00 % Core							
		48.00 - 51.00 : 29.00 % RQD 100.00 % Core							
		51.00 - 54.00 : 36.00 % RQD 100.00 % Core							
		54.00 - 57.00 : 16.00 % 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%
		<p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>36 - 39.5 MD, Mafic Dike</p> <p>Unmineralized, fine-medium grained mafic dyke/flow.</p> <p>Upper contact near perpendicular to core axis. Lower contact ~75 degrees to core axis.</p> <p>Fragments of anorthosite observed especially in the vicinity of the contacts.</p> <p>Alteration</p> <p>36.00 - 39.50 :CH Chlorite, BL Bleached, M Moderate</p> <p>Structure</p> <p>36.00 - 39.50 : LC Lower Contact, 75 Deg to CA</p> <p>36.00 - 39.50 : UC Upper Contact, 90 Deg to CA</p> <p>Minor Interval:</p> <p>51.5 - 53 6, Undivided Ultramafic Intrusive</p> <p>Ultramafic schist containing po stringers up to 1.5cm in width. Upper and lower contacts near perpendicular to core axis.</p> <p>Alteration</p> <p>51.50 - 53.00 :CH Chlorite, BL Bleached, M Moderate</p> <p>Structure</p> <p>51.50 - 53.00 : LC Lower Contact, 90 Deg to CA</p> <p>51.50 - 53.00 : UC Upper Contact, 90 Deg to CA</p>							

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Detailed Lithology		Lithology	Assay Data						
From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
56.25	59.00	6e, Ultramafic Schist	PG00226	56.30	57.00	0.70	0.7900	0.7200	0.0300
		<p>Fine to medium grained, dark green, schistose and highly altered (chlorite or talc/serpentinite), ultramafic. Secondary biotite (alteration of amphiboles?) is pervasive. Unit is very soft and can easily be scratched with a finger nail. Fragments of anorthosite are observed especially in the vicinity of the upper and lower contacts. Angular quartz fragment observed near upper contact.</p> <p>Mineralization: 20-25% sulphides (po-cpy-py-pn) over the length. Bright flecks within pyrrhotite may represent presence of pentlandite. Mineralization occurs as stringers and veinlets, and also as disseminated sulphide. From 58m to 59m, the presence of unmineralized anorthosite fragments reduces the overall sulphide content.</p> <p>Unit is moderately to strongly magnetic throughout; unmineralized portions are non magnetic.</p> <p>Foliation within unit is perpendicular to core axis.</p> <p>Lower contact is ~ 70-75 degrees to core axis. Upper contact angle cannot be determined due to missing core piece.</p> <p>Interpretation: Tectonized, mineralized ultramafic dyke (?).</p> <p>Mineralization</p> <p>56.25 - 57.00 : Po Pyrrhotite, STR Stringers, 23% with 25% cp and 5% py and 70% po</p> <p>57.00 - 58.00 : Po Pyrrhotite, STR Stringers, 38% with 25% cp and 5% py and 70% po</p> <p>58.00 - 59.00 : Po Pyrrhotite, STR Stringers, 10% less due to anorthosite fragments</p> <p>Alteration</p> <p>56.25 - 59.00 :BI Biotite, PT Patchy, M Moderate</p> <p>56.25 - 59.00 :CH Chlorite, P Pervasive, S Strong</p> <p>Structure</p> <p>56.25 - 59.00 : Sm General Foliation, 88 Deg to CA</p> <p>58.99 - 59.00 : LC Lower Contact, 73 Deg to CA</p> <p>RQD</p> <p>57.00 - 60.00 : 62.00 % RQD 100.00 % Core</p>	PG00227	57.00	58.00	1.00	3.3200	2.0100	0.1200
			PG00228	58.00	58.50	0.50	1.8000	0.7600	0.0500
			PG00229	58.50	59.00	0.50	1.6500	0.6900	0.0700

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Detailed Lithology		Lithology	Assay Data						
From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
59.00	85.30	4s, Sausseritized/Tectonized Anorthosite	PG00230	59.00	59.50	0.50	0.4100	0.2200	0.0300
		Medium grained, well foliated, banded, altered and tectonized anorthosite. Trace amounts of bright green mineral present (fuchsite or chloritoid?). Trace cp-po-py in fractures at 60.35m.	PG03113	59.50	60.40	0.90	0.1300	0.0600	0.0100
		Hematization observed from 60.45m to 63.4.							
		Alteration							
		60.45 - 63.40 :HM Hematite, P Pervasive, M Moderate							
		also another type of unrecognized alteration. Yellow green alteration (epidote?).							
		Structure							
		65.00 - 65.01 : Sm General Foliation, 90 Deg to CA							
		84.10 - 84.11 : Sm General Foliation, 68 Deg to CA							
		RQD							
		60.00 - 63.00 : 55.00 % RQD 100.00 % Core							
		63.00 - 66.00 : 60.00 % RQD 100.00 % Core							
		66.00 - 69.00 : 70.00 % RQD 100.00 % Core							
		69.00 - 72.00 : 52.00 % RQD 100.00 % Core							
		72.00 - 75.00 : 62.00 % RQD 100.00 % Core							
		75.00 - 78.00 : 33.00 % RQD 100.00 % Core							
		78.00 - 81.00 : 85.00 % RQD 100.00 % Core							
		81.00 - 84.00 : 29.00 % RQD 97.00 % Core							
		84.00 - 85.30 : 69.00 % RQD 100.00 % Core							
		85.3m End of Hole							
		MINOR INTERVALS:							
		Minor Interval:							
		70.1 - 70.5 4s, Sausseritized/Tectonized Anorthosite							
		Fine grained, chloritized, banded (layers?) anorthosite.							
		Minor pyrite mineralization.							
		Upper contact is at 45 degrees to core axis.							
		Lower contact is at 80 degrees to core axis.							
		Alteration							
		70.10 - 70.50 :CH Chlorite, D Disseminated, M Moderate							
		Structure							
		70.10 - 70.11 : UC Upper Contact, 45 Deg to CA							
		70.49 - 70.50 : LC Lower Contact, 80 Deg to CA							
		Minor Interval:							
		79 - 84 MD, Mafic Dike							
		Unmineralized, fine-medium grained mafic dyke/flow.							
		Upper contact near perpendicular to core axis.							

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Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG03109	52.00	52.85	0.0250	0.0250	0.0100
PG03110	52.85	54.00	0.5100	0.3000	0.0300
PG03111	54.00	55.00	0.0250	0.0250	0.0100
PG03112	55.00	55.80	0.0250	0.0250	0.0100
PG00224	55.80	56.30	0.2200	0.0800	0.0100
PG00226	56.30	57.00	0.7900	0.7200	0.0300
PG00227	57.00	58.00	3.3200	2.0100	0.1200
PG00228	58.00	58.50	1.8000	0.7600	0.0500
PG00229	58.50	59.00	1.6500	0.6900	0.0700
PG00230	59.00	59.50	0.4100	0.2200	0.0300
PG03113	59.50	60.40	0.1300	0.0600	0.0100