

DETAILED LOG

Hole Number: ES2004-06

Units: METRIC

Project Name: Norway - Espedalen	Primary Coordinates Grid: UTM84-32N	Destination Coordinates Grid: UTM:	Collar Dip: -75.00
Project Number: 201	North: 6805105.25	North: 61.38	Collar Az: 229.00
Location: Surface	East: 533827.49	East: 9.63	Length: 62.40 (m)
	Elev: 727.79	Elev: 727.79	Start Depth: 0.00 (m)
Date Started: Aug 18, 2004	Collar Survey: Y	Plugged: N	Contractor: Geo Drilling A/S
Date Completed: Aug 19, 2004	Multishot Survey: N	Hole Size: TT46	Core Storage: Strand Fjellstue
Logged By: Yannick Beaudoin	Pulse EM Survey: N	Casing: Left in Hole, capped	Final Depth: 62.40 (m)

Comments: Purpose: Follow up mineralization intersected in ES2004-05 and further test UTEM conductor ESP_15_15

Result: Intersected mineralized (5-15% sulphides) ultramafic body from 15.57-46.35m bounded by mafic dykes. Also intersected anorthositic rocks and a dolerite dyke downhole of the ultramafic.

Assays: 0.40% Ni, 0.14% Cu, 0.03% Co / 1.0m (40.00-41.00m) (best).

Lithological interpretation: Anorthositic rocks extensively intruded by mafic to ultramafic dykes and intrusions.

Sample Averages

Average Type	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
WEIGHTED	15.60	33.70	18.10	0.2388	0.1070	0.0194
WEIGHTED	15.60	44.00	28.40	0.2312	0.1101	0.0197
WEIGHTED	36.50	44.00	7.50	0.2900	0.1493	0.0240

Detailed Lithology			Assay Data						
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
0	14.70	C, Casing							
14.70	15.57	MD, Mafic Dike Fine grained, chloritized mafic volcanic. Cross cut by late, mm scale quartz veins. <1% sulphides. Lower contact, with peridotite unit, is at 60 degrees from the core axis. Alteration 14.70 - 15.57 :CH Chlorite, P Pervasive, M Moderate Structure 15.56 - 15.57 : LC Lower Contact, 60 Deg to CA RQD 14.70 - 18.00 : 59.00 % 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%
15.57	46.35	PRDT, Peridotite	PG00165	15.60	17.00	1.40	0.2300	0.0800	0.0100
		Medium to coarse grained, weakly foliated, strongly magnetic, dark grey, moderately serpentinized peridotite with large cm scale sub-hedral to sub-rounded pyroxene oikocrysts. Oikocrysts are light to dark grey and are partially replaced by serpentine and magnetite. Unit is transitional between a 'good' oikocrystic pyroxenite and a 'good' peridotite.	PG00166	17.00	18.00	1.00	0.2300	0.0900	0.0300
		Unit is cut by cm to dm scale talc/serpentine veins.	PG00167	18.00	19.00	1.00	0.2400	0.0600	0.0200
		The lower contact is at 85 degrees relative to the core axis.	PG00168	19.00	20.00	1.00	0.2700	0.1500	0.0200
		From 23.58m to 45.38m, grain size is reduced and a well developed fabric appears. From this point the unit is defined as an ultramafic schist. (See minor unit for description).	PG00169	20.00	21.00	1.00	0.2700	0.0900	0.0400
		Unit is strongly magnetic until 23.58m.	PG00170	21.00	22.00	1.00	0.2600	0.0900	0.0300
		Sulphide mineralization averages 10-15% from 15.57m to 23.58m. Mineralization type is mostly disseminated to somewhat blebby with minor stringers and veinlets. Pyrrhotite is the dominant sulphide with trace to minor chalcopyrite and what appears to be flecks of pentlandite within the pyrrhotite.	PG00171	22.00	23.00	1.00	0.2800	0.1000	0.0200
		Interpretation: Consistent with Heim's Rock Suite 2b (Peridotite - Pyroxenite).	PG00172	23.00	23.60	0.60	0.2300	0.1000	0.0300
		Mineralization	PG00173	23.60	25.00	1.40	0.2300	0.1200	0.0200
		15.57 - 23.58 : Po Pyrrhotite, D Disseminated, 11% some blebby; veinlets and stringers; pentlandite flecks visible?; locally up to 15% sulphides	PG00174	25.00	26.00	1.00	0.2200	0.1700	0.0100
		Alteration	PG00176	26.00	27.00	1.00	0.2300	0.1200	0.0100
		15.57 - 23.58 :SERP Serpentine, F Fracture Controlled, W Weak	PG00177	27.00	28.00	1.00	0.2600	0.1900	0.0200
		15.57 - 23.58 :TL Talc, F Fracture Controlled, M Moderate	PG00178	28.00	29.00	1.00	0.2800	0.0800	0.0100
		Structure	PG00179	29.00	30.00	1.00	0.2400	0.0800	0.0300
		46.34 - 46.35 : LC Lower Contact, 85 Deg to CA	PG00180	30.00	31.00	1.00	0.2200	0.0700	0.0100
		RQD	PG00181	31.00	32.00	1.00	0.1500	0.0700	0.0100
		18.00 - 21.00 : 67.00 % RQD 100.00 % Core	PG00182	32.00	33.00	1.00	0.2500	0.1800	0.0100
		21.00 - 24.00 : 46.00 % RQD 100.00 % Core	PG00183	33.00	33.70	0.70	0.2000	0.0800	0.0300
		24.00 - 27.00 : 54.00 % RQD 100.00 % Core	PG00184	33.70	35.00	1.30	0.0250	0.0250	0.0100
		27.00 - 30.00 : 65.00 % RQD 100.00 % Core	PG00185	35.00	36.00	1.00	0.0250	0.0250	0.0100
		30.00 - 33.00 : 78.00 % RQD 100.00 % Core	PG00186	36.00	36.50	0.50	0.0250	0.0250	0.0100
		33.00 - 36.00 : 81.00 % RQD 100.00 % Core	PG00187	36.50	38.00	1.50	0.2300	0.1200	0.0200
		36.00 - 39.00 : 56.00 % RQD 100.00 % Core	PG00188	38.00	39.00	1.00	0.2500	0.1100	0.0300
		39.00 - 42.00 : 38.00 % RQD 100.00 % Core	PG00189	39.00	40.00	1.00	0.3600	0.1900	0.0300
		42.00 - 45.00 : 61.00 % RQD 100.00 % Core	PG00190	40.00	41.00	1.00	0.4000	0.1400	0.0300
		45.00 - 48.00 : 32.00 % RQD 100.00 % Core	PG00191	41.00	42.00	1.00	0.2500	0.2400	0.0100
			PG00192	42.00	43.00	1.00	0.3300	0.1200	0.0300
			PG00193	43.00	44.00	1.00	0.2400	0.1400	0.0200
			PG00194	44.00	45.00	1.00	0.1800	0.1600	0.0200
			PG00195	45.00	46.30	1.30	0.1400	0.1000	0.0100
			PG00196	46.30	47.00	0.70	0.0800	0.2000	0.0100

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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: 23.58 - 33.7 6e, Ultramafic Schist</p> <p>From this point, the oikocrystic peridotite is defined as a schist due to an increase in overall fabric intensity. Grain size is also notably reduced to medium. Within the ultramafic schist portion of the peridotite, a small <4m long mafic volcanic wrath is present. At the contact between the ultramafic schist and the mafic volcanic, brecciation can be seen with angular fragments of the volcanic lying within the ultramafic.</p> <p>Mineralization within this minor unit averages 5-8% with local pyrrhotite stringers. Trace to minor chalcopyrite can also be seen. Some pentlandite eyes (<1 mm) can be seen within the pyrrhotite.</p> <p>Talc/serpentine veins (mm to dm scale) cross cut the unit throughout its length.</p> <p>Unit is moderately magnetic.</p> <p>Mineralization 23.58 - 33.70 : Po Pyrrhotite, D Disseminated, 8% locally up to 10%</p> <p>Alteration 23.58 - 33.70 :SERP Serpentine, F Fracture Controlled, M Moderate 23.58 - 33.70 :TL Talc, F Fracture Controlled, M Moderate</p> <p>Minor Interval: 33.7 - 36.58 10a, Massive flows Fine grained, chloritized mafic volcanic. Cross cut by late, mm scale quartz veins. <1% sulphides.</p> <p>Alteration 33.70 - 36.58 :CH Chlorite, P Pervasive, M Moderate</p> <p>Minor Interval: 36.58 - 46.35 6e, Ultramafic Schist see previous description for ultramafic schist (for 23.58m to 33.70m)</p> <p>Mineralization 36.58 - 46.35 : Po Pyrrhotite, D Disseminated, 8% locally up to 10%</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%
46.35	49.74	MD, Mafic Dike Fine grained, chloritized mafic volcanic. Cross cut by late, mm scale quartz veins. <1% sulphides. Lower contact, with anorthosite is at 45 degrees with respect to core axis. Alteration 46.35 - 49.74 :CH Chlorite, P Pervasive, M Moderate Structure 49.73 - 49.74 : LC Lower Contact, 45 Deg to CA RQD 48.00 - 51.00 : 61.00 % RQD 100.00 % Core							
49.74	61.40	4, Anorthosite / Anorthosite Gabbro Anorthosite to anorthositic gabbro (mainly anorthositic gabbro). Medium-coarse to medium grained, mottled texture. Locally sheared/tectonized and sausseritized. Unit is cross cut by epidote-chlorite veins. Minor chlorite and epidote can be seen locally in the matrix. No mineralization is present. Unit is not magnetic. Interpretation: Unit classification based on observation and correlation with similar units from other drill holes (e.g. ES2004-08, 09). RQD 51.00 - 54.00 : 78.00 % RQD 100.00 % Core 54.00 - 57.00 : 63.00 % RQD 100.00 % Core 57.00 - 60.00 : 73.00 % RQD 100.00 % Core 60.00 - 62.40 : 70.00 % RQD 100.00 % Core 62.4m End of Hole							
61.40	62.40	DIA, Diabase Fine to medium grained, moderately magnetic mafic intrusive with diabasic (doloritic) texture. Upper contact with anorthosite is at 28 degrees with respect to core axis. Unmineralized.							

Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG00165	15.60	17.00	0.2300	0.0800	0.0100
PG00166	17.00	18.00	0.2300	0.0900	0.0300

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Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG00167	18.00	19.00	0.2400	0.0600	0.0200
PG00168	19.00	20.00	0.2700	0.1500	0.0200
PG00169	20.00	21.00	0.2700	0.0900	0.0400
PG00170	21.00	22.00	0.2600	0.0900	0.0300
PG00171	22.00	23.00	0.2800	0.1000	0.0200
PG00172	23.00	23.60	0.2300	0.1000	0.0300
PG00173	23.60	25.00	0.2300	0.1200	0.0200
PG00174	25.00	26.00	0.2200	0.1700	0.0100
PG00176	26.00	27.00	0.2300	0.1200	0.0100
PG00177	27.00	28.00	0.2600	0.1900	0.0200
PG00178	28.00	29.00	0.2800	0.0800	0.0100
PG00179	29.00	30.00	0.2400	0.0800	0.0300
PG00180	30.00	31.00	0.2200	0.0700	0.0100
PG00181	31.00	32.00	0.1500	0.0700	0.0100
PG00182	32.00	33.00	0.2500	0.1800	0.0100
PG00183	33.00	33.70	0.2000	0.0800	0.0300
PG00184	33.70	35.00	0.0250	0.0250	0.0100
PG00185	35.00	36.00	0.0250	0.0250	0.0100
PG00186	36.00	36.50	0.0250	0.0250	0.0100
PG00187	36.50	38.00	0.2300	0.1200	0.0200
PG00188	38.00	39.00	0.2500	0.1100	0.0300
PG00189	39.00	40.00	0.3600	0.1900	0.0300
PG00190	40.00	41.00	0.4000	0.1400	0.0300
PG00191	41.00	42.00	0.2500	0.2400	0.0100
PG00192	42.00	43.00	0.3300	0.1200	0.0300
PG00193	43.00	44.00	0.2400	0.1400	0.0200
PG00194	44.00	45.00	0.1800	0.1600	0.0200
PG00195	45.00	46.30	0.1400	0.1000	0.0100
PG00196	46.30	47.00	0.0800	0.2000	0.0100