

Hole Number: ES08-135

Units: METRIC

Project Name: Norway - Espedalen	Primary Coordinates Grid: UTM84-32N	Destination Coordinates Grid: UTM:	Collar Dip: -90.00
Project Number: 201	North: 6805063.00	North: 61.38	Collar Az: 230.00
Location: Surface	East: 533869.00	East: 9.63	Length: 176.61 (m)
	Elev: 735.00	Elev: 735.00	Start Depth: 0.00 (m)
Date Started: Feb 12, 2008	Collar Survey: N	Plugged: N	Contractor: Arctic Drilling A/S
Date Completed: Feb 16, 2008	Multishot Survey: N	Hole Size: BQ	Core Storage: tyristrand
Logged By: awnor	Pulse EM Survey: N	Casing: Left in Hole	Final Depth: 176.61 (m)

Comments: To test down-dip extension of approximately 35-40m of 2004-05 that intersected wide sulphide mineralization

Results.  
This hole intersected disseminated to net-textured sulphide mineralization immediately after casing from 9.05-41.25m in a coarse grained, highly magnetic pyroxenite. The mineralization is very similar to ES2004-05 with 10 up to 25% fg Po/Cpy/Pn.

## Sample Averages

Average Type	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
WEIGHTED	16.35	41.52	25.17	0.5569	0.2381	0.0410
WEIGHTED	19.00	41.12	22.12	0.5971	0.2456	0.0436
WEIGHTED	29.65	34.00	4.35	0.8103	0.3712	0.0577

Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
0	9.05	O/B, Overburden Casing							

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From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
9.05	41.52	PYXT, Pyroxenite	PG5807	9.05	10.00	0.95	0.1400	0.0460	0.0140
		Medium to coarse grained, weakly foliated to predominantly massive, strongly magnetic, dark grey-black, 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. Visually, the unit looks brecciated due to the distribution of the oikocrysts. However a weak breccia appearance when sulphides exceed 30%. Unit is cut by very thin mm sized, low angle veins that have abundant talk and serpentine.	PG5808	10.00	11.00	1.00	0.1090	0.0220	0.0150
		Sulphide content through out is approximately 15 with some local concentrations up to 20%. The mineralized is varies between net-textured and disseminated depending on abundance. The dominant sulphides are mainly Pyrrhotite and lesser amounts of Cpy ~1-3% and vfg flecks of Pn within Po. Sulphides ~3-5% up to 13.9m, 15% to 29.65, and 15-25% to bottom of unit.	PG5809	11.00	12.00	1.00	0.1890	0.0740	0.0200
		There are occasional 2-3cm blebs of Po with Pn scattered throughout.	PG5810	12.00	12.82	0.82	0.1930	0.0740	0.0180
		Mineralization	PG5811	12.82	13.90	1.08	0.2050	0.0900	0.0190
		9.05 - 13.90 : Cpy Chalcopyrite, DIS Disseminated, 0.5%	PG5812	13.90	14.50	0.60	0.1550	0.0750	0.0170
		9.05 - 13.90	PG5813	14.50	15.60	1.10	0.1600	0.0740	0.0160
		9.05 - 13.90 : PO Pyrrhotite, DIS Disseminated, 5%	PG5814	15.60	16.35	0.75	0.1700	0.0830	0.0170
		13.90 - 29.65 : POPNCP Pyrrhotite/Pentlandite/Chalcopyrite, Net Net Textured, 20%	PG5815	16.35	17.00	0.65	0.2260	0.1400	0.0200
		Mainly 15% but 20% locally and occasional large cm sized belbs of Po and vfg Pn. Less than 1% fg Cpy.	PG5816	17.00	18.00	1.00	0.2360	0.2380	0.0200
		29.65 - 31.35 : POPNCP Pyrrhotite/Pentlandite/Chalcopyrite, Net Net Textured, 25%	PG5817	18.00	19.00	1.00	0.3290	0.1480	0.0270
		Up to 30% mainly Po and up to 1% Cpy. Minor vfg Pn	PG5818	19.00	20.00	1.00	0.4120	0.1380	0.0330
			PG5819	20.00	21.00	1.00	0.4790	0.1720	0.0380
			PG5821	21.00	22.19	1.19	0.4640	0.1320	0.0350
			PG5822	22.19	22.85	0.66	0.4600	0.9330	0.0340
			PG5823	22.85	24.00	1.15	0.4280	0.1350	0.0320
			PG5824	24.00	25.00	1.00	0.6660	0.2390	0.0490
			PG5825	25.00	26.00	1.00	1.0660	0.3190	0.0760
			PG5827	26.00	27.15	1.15	0.4140	0.1430	0.0310
			PG5828	27.15	28.15	1.00	0.4010	0.1800	0.0300
			PG5829	28.15	28.87	0.72	0.3340	0.1490	0.0270
			PG5830	28.87	29.65	0.78	0.3870	0.1500	0.0300
			PG5831	29.65	30.60	0.95	0.8090	0.2440	0.0580
			PG5832	30.60	32.00	1.40	0.8960	0.4920	0.0650
			PG5833	32.00	33.00	1.00	0.7580	0.3670	0.0530
			PG5834	33.00	34.00	1.00	0.7440	0.3270	0.0520
			PG5835	34.00	35.10	1.10	0.6330	0.2490	0.0450
			PG5836	35.10	36.00	0.90	0.5780	0.2020	0.0420
			PG5837	36.00	37.00	1.00	0.6320	0.2020	0.0460
			PG5838	37.00	37.66	0.66	0.5860	0.1700	0.0440
			PG5839	37.66	38.28	0.62	0.6390	0.3100	0.0450
			PG5841	38.28	39.30	1.02	0.6120	0.1440	0.0440
			PG5842	39.30	40.24	0.94	0.5700	0.2070	0.0400
			PG5843	40.24	41.12	0.88	0.5690	0.1690	0.0390
			PG5844	41.12	41.52	0.40	0.2440	0.2100	0.0190

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From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
41.52	67.75	ANOR, Anorthosite Anorthosite to anorthositic gabbro (mainly anorthositic gabbro from ES2004-05_ Grey-dark grey. Predominantly medium grained with some local coarse grained sections of gabbro (mentioned in sub-litho). Moderately foliated to almost massive in some sections. Foliated ~65 dtca throughout. Not magnetic or mineralized. Weak chlorite alteration. Unit is crosscut by several light green mafic dykes. Locally, pyrite occurs as veinlets and also fills fracture planes. Strongly sheared and gaugy upper contact to coarse grained, mineralized Pyroxenite. Structure 41.52 - 41.72 : FLT Fault, 65 Deg to CA Sheared contact to pyroxenite.	PG5845	41.52	42.20	0.68	0.0350	0.0270	0.0040
			PG5846	42.20	42.77	0.57	0.0100	0.0060	0.0030
			PG5847	42.77	43.80	1.03	0.0050	0.0025	0.0020
67.75	71.22	GAB, Gabbro Very similar to Anorthosite. Coarse to very coarse grained. Semi-massive with weak foliation @65 dtca. Contains predominantly Plagioclase and amphiboles with 5% 2-3cm blebs of phlogopite/biotite? Sharp upper and lower contacts to anorthosite.							
71.22	75.60	MD, Mafic Dike Green. fg. Moderately foliated. Homogenous. Sharp upper contact @80 dtca and sharp, low angle lower contact @45 dtca. Not mineralized or magnetic. Chilled contact approximately 10-30 cm. Structure 75.12 - 75.35 : FLT Fault, 50 Deg to CA Thin fault zone with broken core and white veinlets.							
75.60	105.75	ANOR, Anorthosite Anorthosite to anorthositic gabbro (mainly anorthositic gabbro from ES2004-05_ Grey-dark grey. Predominantly medium grained with a coarse grained interval at top of unit. Moderately foliated to almost massive in some sections. Foliated ~65 dtca throughout. Not magnetic or mineralized. Weak chlorite alteration. Unit is crosscut by several light green mafic dykes. Locally, pyrite occurs as veinlets and also fills fracture planes. Strongly sheared and gaugy upper contact to coarse grained, mineralized Pyroxenite. Mineralization 104.44 - 105.10 : POPNCP Pyrrhotite/Pentlandite/Chalcopyrite, DIS Disseminated, 7% up to 10% locally but mainly 5% Po/Pn and approximately 1-2% Cpy. Very fine grained disseminated sulphides. MINOR INTERVALS: Minor Interval: 88.55 - 89.82 MD, Mafic Dike Green. fg. Homogenous and weakly foliated 65-70 dtca. Not mineralized/magnetic. Sharp upper and lower contact parallel to foliation. Minor Interval: 91.87 - 92.58 MD, Mafic Dike Green. fg. Homogenous and weakly foliated 65-70 dtca. Not mineralized/magnetic. Sharp upper and lower contact parallel to foliation.	PG5848	102.75	103.44	0.69	0.0060	0.0025	0.0020
			PG5849	103.44	104.44	1.00	0.0070	0.0025	0.0030
			PG5850	104.44	105.10	0.66	0.1020	0.0610	0.0100
			PG5851	105.10	105.75	0.65	0.0100	0.0090	0.0020

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From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
105.75	108.92	MD, Mafic Dike Green. fg. Homogenous. Moderately foliated @60 dtca. Mineralized within top 0.5m of unit with fractures filled with vfg Py and Po and about 2% Cpy within top 2 cm of contact. Sharp contacts parallel to foliation.	PG5852	105.75	106.24	0.49	0.0230	0.0310	0.0050
			PG5853	106.24	107.20	0.96	0.0005	0.0025	0.0030
			PG5854	107.20	107.77	0.57	0.0010	0.0025	0.0020
108.92	131.67	ANOR, Anorthosite White-grey-green. Fg. with mg sections. Very heterogenous with localy homogenous sections. Strongly deformed and sheared 55-65 dtca. Epidote and chlorite and minor fuchsite bands. Mineralized locally with 5-7% Po/Pn/Cpy from 104.44-105.10m. Crosscut by thin mafic dykes. Sporadic dm wide silicified sections. Structure 119.24 - 119.43 minor scale folding over 1-2 cm. Highly convoluted fabric between chlorite/epidote bands and anorthositic bands. MINOR INTERVALS: Minor Interval: 110.44 - 111.58 MD, Mafic Dike Green. fg. homogenous. Strongly foliated and sheared at 60 dtca. On very fine scale fabric is slightly crenulated indicating strong deformation. Not mineralized. Sharp, irregular upper and lower contacts. Minor Interval: 115.85 - 116.52 MD, Mafic Dike Green. Fg. Homogenous. Weakly foliated at 65-70 dtca. Not mineralized or magnetic. Contains 3% cm wide qtz/plag veins parallel to foliation.							
131.67	141.28	MD, Mafic Dike Green. vfg. homogenous. Moderately foliated at 65 dtca. Not mineralized. Sharp upper and lower contacts paralle to foliation. Contains silicified anorthositic inclusions from 132.04-132.20m 133.59-134.65m Not magnetic. Strongly sheared lower contact with many thin slivers of anothorso and mafic dykes. Intercalated area. Not mineralized.	PG5855	140.00	140.50	0.50			
			PG5856	140.50	141.28	0.78			
141.28	143.79	UM, Ultramafic Ultramafic dyke. Black. VFG to fg. Strongly magnetic. Mineralized. Strongly sheared and altered with serpentine talc and magnetite. Foliated ~60-65 dtca. 5% breccaited talc veinlets and disseminated to blebby fg magnetite.  Mineralized with 2-3% vfg to fg diss Po and trace amounts of vfg cpy from 142.22-143.79. Po in places is sometimes assoicated with v thin blebs of magnetite. Sharp and undulating upper and lower contacts. Mineralization 142.22 - 143.79 : POPNCP Pyrrhotite/Pentlandite/Chalcopyrite, DIS Disseminated, 2% vfg Po and Cpy...potentially Pn. None visible	PG5857	141.28	142.20	0.92			
			PG5858	142.20	142.85	0.65			
			PG5859	142.85	143.79	0.94			

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From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
143.79	165.30	ANOR, Anorthosite White-grey-green. Fg. with mg sections. Very heterogenous with locally homogenous sections. Strongly deformed and sheared 55-65 dtca. Epidote and chlorite and minor fuchsite undulating bands. Crosscut by thin mafic dykes (see sub-litho). Strength of foliation decrease to leave almost a massive appearance. Below MD below anorthosite is mg-cg and massive (see descr.)  MINOR INTERVALS: Minor Interval: 143.79 - 147.47 MD, Mafic Dike Green. Fg. Homogenous. Weakly foliated 65-70 dtca. Not mineralized or magnetic. sharp upper and lower contacts parallel to foliation. Minor Interval: 149.2 - 151.63 MD, Mafic Dike Green. Fg. Homogenous. Weakly foliated 65-70 dtca. Not mineralized or magnetic. sharp upper and lower contacts parallel to foliation. Minor Interval: 151.63 - 154.4 MD, Mafic Dike Green. Fg. Homogenous. Weakly foliated 65-70 dtca. Not mineralized or magnetic. sharp upper and lower contacts parallel to foliation.	PG5860	143.79	144.20	0.41			
			PG5861	144.20	144.80	0.60			
165.30	169.39	MD, Mafic Dike Green. Fg to mg towards centre. Homogenous. Weakly foliated 65-70 dtca. Not mineralized or magnetic. sharp upper and lower contacts parallel to foliation. <1%, <1mm v. thin chloritized veinlets locally with vfg diss Po.							
169.39	176.60	ANOR, Anorthosite White-grey-green. mg with v. local cg sections. Heterogenous with locally homogenous sections. Less deformed than overlying units with weak fabric at 65 dtca. Almost massive towards base. Predominantly plagioclase with interstitial chlorite and epidote. Crosscut by thin mafic dykes (see sub-litho). Not magnetic and mineralized. Dm wide silicified sections with abundant quartz overprinting.  MINOR INTERVALS: Minor Interval: 172.19 - 173.73 MD, Mafic Dike Green. Fg to mg in centre. Homogenous. Weakly foliated 65-70 dtca. Not mineralized or magnetic. sharp upper and lower contacts parallel to foliation.							
176.60	176.61	EOH, End of Hole							

## Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG5807	9.05	10.00	0.1400	0.0460	0.0140
PG5808	10.00	11.00	0.1090	0.0220	0.0150
PG5809	11.00	12.00	0.1890	0.0740	0.0200
PG5810	12.00	12.82	0.1930	0.0740	0.0180

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## Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG5811	12.82	13.90	0.2050	0.0900	0.0190
PG5812	13.90	14.50	0.1550	0.0750	0.0170
PG5813	14.50	15.60	0.1600	0.0740	0.0160
PG5814	15.60	16.35	0.1700	0.0830	0.0170
PG5815	16.35	17.00	0.2260	0.1400	0.0200
PG5816	17.00	18.00	0.2360	0.2380	0.0200
PG5817	18.00	19.00	0.3290	0.1480	0.0270
PG5818	19.00	20.00	0.4120	0.1380	0.0330
PG5819	20.00	21.00	0.4790	0.1720	0.0380
PG5821	21.00	22.19	0.4640	0.1320	0.0350
PG5822	22.19	22.85	0.4600	0.9330	0.0340
PG5823	22.85	24.00	0.4280	0.1350	0.0320
PG5824	24.00	25.00	0.6660	0.2390	0.0490
PG5825	25.00	26.00	1.0660	0.3190	0.0760
PG5827	26.00	27.15	0.4140	0.1430	0.0310
PG5828	27.15	28.15	0.4010	0.1800	0.0300
PG5829	28.15	28.87	0.3340	0.1490	0.0270
PG5830	28.87	29.65	0.3870	0.1500	0.0300
PG5831	29.65	30.60	0.8090	0.2440	0.0580
PG5832	30.60	32.00	0.8960	0.4920	0.0650
PG5833	32.00	33.00	0.7580	0.3670	0.0530
PG5834	33.00	34.00	0.7440	0.3270	0.0520
PG5835	34.00	35.10	0.6330	0.2490	0.0450
PG5836	35.10	36.00	0.5780	0.2020	0.0420
PG5837	36.00	37.00	0.6320	0.2020	0.0460
PG5838	37.00	37.66	0.5860	0.1700	0.0440
PG5839	37.66	38.28	0.6390	0.3100	0.0450
PG5841	38.28	39.30	0.6120	0.1440	0.0440
PG5842	39.30	40.24	0.5700	0.2070	0.0400
PG5843	40.24	41.12	0.5690	0.1690	0.0390
PG5844	41.12	41.52	0.2440	0.2100	0.0190
PG5845	41.52	42.20	0.0350	0.0270	0.0040
PG5846	42.20	42.77	0.0100	0.0060	0.0030
PG5847	42.77	43.80	0.0050	0.0025	0.0020
PG5848	102.75	103.44	0.0060	0.0025	0.0020
PG5849	103.44	104.44	0.0070	0.0025	0.0030
PG5850	104.44	105.10	0.1020	0.0610	0.0100

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Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG5851	105.10	105.75	0.0100	0.0090	0.0020
PG5852	105.75	106.24	0.0230	0.0310	0.0050
PG5853	106.24	107.20	0.0005	0.0025	0.0030
PG5854	107.20	107.77	0.0010	0.0025	0.0020
PG5855	140.00	140.50			
PG5856	140.50	141.28			
PG5857	141.28	142.20			
PG5858	142.20	142.85			
PG5859	142.85	143.79			
PG5860	143.79	144.20			
PG5861	144.20	144.80			