

Hole Number: ES08-140

Units: METRIC

Project Name: Norway - Espedalen	Primary Coordinates Grid: UTM84-32N	Destination Coordinates Grid: UTM:	Collar Dip: -88.30
Project Number: 201	North: 6805133.00	North: 61.38	Collar Az: 230.00
Location: Surface	East: 533931.00	East: 9.63	Length: 183.51 (m)
	Elev: 737.00	Elev: 737.00	Start Depth: 0.00 (m)
Date Started: Mar 09, 2008	Collar Survey: N	Plugged: N	Contractor: Arctic Drilling A/S
Date Completed: Mar 12, 2008	Multishot Survey: N	Hole Size: BQ	Core Storage: tyristrand
Logged By: pmnor	Pulse EM Survey: N	Casing: Left in Hole	Final Depth: 183.51 (m)

Comments: Hole designed to test approximately 90m down-dip of well mineralized pyroxenite in ES08-135.

Results:

13.22-87.44: Mg to Cg pyroxenite contains 3-12% fg Po +/- Pn with minor amounts of Cpy locally. Mineralization is predominantly 5% and disseminated, however stringer and blebs occur when mineralization is roughly 12-15%.

Sample Averages

Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
0	6.25	O/B, Overburden							
6.25	7.30	ANOR, Anorthosite white grey, fg, heterogenous (dirty anorthosite), moderately deformed/foliated ~45-50 dtca. Abundant plagioclase.							
7.30	13.20	MD, Mafic Dike Green, light green, fg. Homogenous and massive. Mineralization 10.90 - 13.20 : PO Pyrrhotite, DIS Disseminated, 2% fg disseminated	PG05990	8.00	9.00	1.00	0.0030	0.0090	0.0030
			PG05991	9.00	10.00	1.00	0.0020	0.0070	0.0020
			PG05992	10.00	11.00	1.00	0.0160	0.0210	0.0040
			PG05993	11.00	12.00	1.00	0.1280	0.0610	0.0120
			PG05994	12.00	13.20	1.20	0.0610	0.0550	0.0070

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Detailed Lithology		Lithology	Assay Data						
From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
13.20	87.44	PYXT, Pyroxenite	PG05995	13.20	14.00	0.80	0.0470	0.1870	0.0060
		Black. mg to vcg ultramafic, likely pyroxenite. Massive and homogenous.	PG05996	14.00	15.00	1.00	0.0430	0.0380	0.0060
		Contains altered olivines with mg and very coarse grained pyroxenes. Strongly magnetic. Approximately 2-3% cm wide talc veinlets. V thin magnetite veinlets.	PG05997	15.00	16.00	1.00	0.0780	0.0570	0.0080
			PG05998	16.00	17.00	1.00	0.1810	0.0920	0.0160
		Mineralized with throughout with 3-12% fg disseminated and blebby Po +/- Pn and ~1% fg Cpy. Po often occurs fracture coatings. mineralization abundance is predominantly ~3-5% but can be as high as 12% locally. Sulphides occurs as cm+ sized blebs when mineralization exceeds 10%.	PG05999	17.00	18.00	1.00	0.0920	0.0270	0.0090
		Structure	BL00001	18.00	19.00	1.00	0.1290	0.0520	0.0140
		86.55 - 87.44	BL00002	19.00	20.00	1.00	0.1240	0.0630	0.0130
		Strongly brecciated and fractured UM with numerous crosscutting talc and carbonate veinlets containing remobilized sulphides.	BL00003	20.00	21.00	1.00	0.2070	0.0720	0.0160
		MINOR INTERVALS:	BL00004	21.00	22.00	1.00	0.2130	0.0700	0.0170
		Minor Interval:	BL00005	22.00	23.00	1.00	0.1610	0.0590	0.0150
		77.15 - 79.4 MD, Mafic Dike	BL00006	23.00	24.00	1.00	0.1200	0.0510	0.0090
		Green, mg, massive, homogenous. Sharp upper and lower contact from 80-90 dtca. Not mineralized or magnetic,	BL00007	24.00	25.00	1.00	0.0670	0.0230	0.0090
			BL00008	25.00	26.00	1.00	0.0470	0.0480	0.0050
			BL00009	26.00	27.00	1.00	0.1580	0.0740	0.0120
			BL00010	27.00	28.00	1.00	0.1960	0.0730	0.0160
			BL00011	28.00	29.00	1.00	0.1850	0.0480	0.0190
			BL00012	29.00	30.00	1.00	0.1990	0.1070	0.0200
			BL00013	30.00	31.00	1.00	0.2320	0.0980	0.0200
			BL00014	31.00	32.00	1.00	0.1410	0.0830	0.0140
			BL00015	32.00	33.00	1.00	0.1490	0.1260	0.0120
			BL00016	33.00	34.00	1.00	0.2470	0.1340	0.0180
			BL00017	34.00	35.00	1.00	0.1880	0.0690	0.0130
			BL00018	35.00	36.00	1.00	0.2520	0.0930	0.0190
			BL00019	36.00	37.00	1.00	0.2180	0.0820	0.0170
			BL00021	37.00	38.00	1.00	0.1960	0.1300	0.0170
			BL00022	38.00	39.00	1.00	0.1440	0.1790	0.0110
			BL00023	39.00	40.00	1.00	0.1490	0.1010	0.0110
			BL00024	40.00	41.00	1.00	0.1830	0.0580	0.0160
			BL00025	41.00	42.00	1.00	0.2290	0.0610	0.0190
			BL00026	42.00	43.00	1.00	0.1900	0.0540	0.0170
			BL00027	43.00	44.00	1.00	0.1640	0.0660	0.0130
			BL00028	44.00	45.00	1.00	0.2590	0.1080	0.0210
			BL00029	45.00	46.00	1.00	0.2000	0.0510	0.0140
			BL00030	46.00	47.00	1.00	0.1980	0.0590	0.0150
			BL00032	47.00	48.00	1.00	0.2100	0.0670	0.0150
			BL00033	48.00	49.00	1.00	0.1980	0.0630	0.0160
			BL00034	49.00	50.00	1.00	0.1570	0.1470	0.0130
			BL00035	50.00	51.00	1.00	0.2200	0.1080	0.0170
			BL00036	51.00	52.00	1.00	0.2290	0.0740	0.0180
			BL00037	52.00	53.00	1.00	0.2130	0.0870	0.0190
			BL00038	53.00	54.00	1.00	0.2380	0.0680	0.0220
			BL00039	54.00	55.00	1.00	0.2040	0.0860	0.0180
			BL00041	55.00	56.00	1.00	0.1490	0.1730	0.0130

DETAILED LOG

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Detailed Lithology		Assay Data							
From (m)	To (m)	Lithology	Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
			BL00042	56.00	57.00	1.00	0.0630	0.0730	0.0070
			BL00043	57.00	58.00	1.00	0.1900	0.0640	0.0160
			BL00044	58.00	59.00	1.00	0.1770	0.0790	0.0150
			BL00045	59.00	60.00	1.00	0.0530	0.0180	0.0060
			BL00046	60.00	61.00	1.00	0.1870	0.1000	0.0150
			BL00047	61.00	62.00	1.00	0.0980	0.0370	0.0100
			BL00048	62.00	63.00	1.00	0.2050	0.0750	0.0180
			BL00049	63.00	64.00	1.00	0.2520	0.1540	0.0220
			BL00050	64.00	65.00	1.00	0.3100	0.2020	0.0250
			BL00051	65.00	66.00	1.00	0.2320	0.0940	0.0210
			BL00052	66.00	67.00	1.00	0.2610	0.1020	0.0230
			BL00053	67.00	68.00	1.00	0.2450	0.1050	0.0230
			BL00054	68.00	69.00	1.00	0.2880	0.1150	0.0260
			BL00055	69.00	70.00	1.00	0.2250	0.0750	0.0210
			BL00056	70.00	71.00	1.00	0.1850	0.0450	0.0190
			BL00057	71.00	72.00	1.00	0.1520	0.0290	0.0170
			BL00058	72.00	73.00	1.00	0.1100	0.0120	0.0150
			BL00059	73.00	74.00	1.00	0.1540	0.0480	0.0190
			BL00061	74.00	75.00	1.00	0.1640	0.0450	0.0200
			BL00062	75.00	76.00	1.00	0.1700	0.0330	0.0180
			BL00063	76.00	77.15	1.15	0.1240	0.0250	0.0150
			BL00064	77.15	78.25	1.10	0.0040	0.0240	0.0020
			BL00065	78.25	79.40	1.15	0.0040	0.0240	0.0020
			BL00066	79.40	80.50	1.10	0.1600	0.0310	0.0180
			BL00067	80.50	81.35	0.85	0.1780	0.0290	0.0190
			BL00068	81.35	82.25	0.90	0.1390	0.0280	0.0160
			BL00069	82.25	83.00	0.75	0.2260	0.0450	0.0230
			BL00070	83.00	83.65	0.65	0.2570	0.0830	0.0230
			BL00071	83.65	84.70	1.05	0.0470	0.0430	0.0060
			BL00072	84.70	85.60	0.90	0.1840	0.0290	0.0200
			BL00073	85.60	86.55	0.95	0.1960	0.0680	0.0200
			BL00074	86.55	87.44	0.89	0.2760	0.1470	0.0240

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Detailed Lithology		Lithology	Assay Data						
From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
87.44	110.22	MD, Mafic Dike Green, light green, fg, to mg, homogenous and predominantly massive and locally foliated. ~50dcta. Sheared and fractured upper and lower contacts. Unit has incorporated mineralized ultramafic xenoliths (see sub-litho) as well as local sections containing remobilized sulphides (see mineralization) Mineralization 100.65 - 101.67 : POPNCP Pyrrhotite/Pentlandite/Chalcopyrite, STR Stringers, 3% 3-5% vfg stringer po/pn with trace Cpy 107.75 - 110.22 : POPNCP Pyrrhotite/Pentlandite/Chalcopyrite, STR Stringers, 15% 5-25% vfg remobilized stringers of Po/Pn and ~1-2% vfg Cpy. MINOR INTERVALS: Minor Interval: 87.44 - 97.02 UM, Ultramafic dark grey-black, fg, homogenous inclusion of mineralized ultramafic. Strongly magnetic. Mineralized with 3-5% vfg to fg diss. Po and trace Cpy. Minor crosscutting sulphide veinlets. Minor Interval: 99.3 - 99.7 UM, Ultramafic As above. Mineralized with approximately 5% vfg to fg Po.	BL00075	87.44	89.15	1.71	0.0060	0.0100	0.0030
			BL00076	89.15	90.25	1.10	0.0060	0.0080	0.0020
			BL00077	90.25	91.70	1.45	0.0050	0.0080	0.0030
			BL00078	91.70	93.00	1.30	0.0050	0.0080	0.0030
			BL00079	93.00	94.35	1.35	0.0050	0.0070	0.0030
			BL00081	94.35	95.80	1.45	0.0060	0.0080	0.0030
			BL00082	95.80	97.02	1.22	0.0390	0.0130	0.0050
			BL00083	97.02	97.82	0.80	0.1630	0.0410	0.0180
			BL00084	97.82	99.10	1.28	0.0150	0.0090	0.0030
			BL00085	99.10	99.90	0.80	0.1140	0.0270	0.0130
			BL00086	99.90	100.65	0.75	0.0050	0.0025	0.0020
			BL00087	100.65	101.67	1.02	0.1330	0.0890	0.0140
			BL00088	101.67	103.00	1.33	0.0110	0.0090	0.0030
			BL00089	103.00	104.00	1.00	0.0100	0.0160	0.0030
			BL00090	104.00	105.00	1.00	0.0050	0.0080	0.0030
			BL00091	105.00	106.35	1.35	0.0050	0.0080	0.0020
			BL00092	106.35	107.75	1.40	0.0060	0.0080	0.0030
			BL00093	107.75	108.65	0.90	0.1640	0.0670	0.0160
			BL00095	108.65	109.35	0.70	0.4830	0.2010	0.0430
			BL00096	109.35	110.22	0.87	0.1860	0.0880	0.0170
110.22	116.73	ANOR, Anorthosite As above: white grey, fg, heterogenous (dirty anorthosite), moderately deformed/foliated ~45-50 dtca. Abundant plagioclase and minor epidote and chlorite alteration. Mineralized locally with Po and Cpy stringers (see min'n) Mineralization 110.68 - 111.40 : POPNCP Pyrrhotite/Pentlandite/Chalcopyrite, SM Semi-Massive, 5% ~5% vfg strings of Po and Minor Cpy	BL00097	110.22	110.68	0.46	0.0060	0.0110	0.0005
			BL00098	110.68	111.40	0.72	0.0510	0.2540	0.0040
			BL00099	111.40	112.40	1.00	0.0130	0.0060	0.0010
			BL00101	112.40	113.40	1.00	0.0060	0.0025	0.0005
116.73	123.24	MD, Mafic Dike Green, vfg to fg, homogenous. Weakly deformed indicated by thin bands of epidote at 55 dtca. not mineralized. Sharp upper and lower contacts at 65 and 80 tca, respectively.							

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Detailed Lithology		Lithology	Assay Data						
From (m)	To (m)		Sample Number	From (m)	To (m)	Length (m)	Ni%	Cu%	Co%
123.24	183.50	ANOR, Anorthosite white grey, fg, heterogenous (dirty anorthosite), moderately deformed/foliated ~55 dtca (strong locally). Abundant plagioclase and minor epidote and chlorite alteration. Pervasive, light grey alteration (silicification?). Not mineralized or magnetic, Texture 150.90 - 152.30 : BC Broken Core moderately to strongly broken core. soft, Chloritized fracture MINOR INTERVALS: Minor Interval: 143.2 - 143.81 MD, Mafic Dike light green, vfg, homogenous. Moderately oflaited @60 dtca. Sharp upper and lower contact parallel to foliation. Not mineralized.							
183.50	183.51	EOH, End of Hole							

Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
PG05990	8.00	9.00	0.0030	0.0090	0.0030
PG05991	9.00	10.00	0.0020	0.0070	0.0020
PG05992	10.00	11.00	0.0160	0.0210	0.0040
PG05993	11.00	12.00	0.1280	0.0610	0.0120
PG05994	12.00	13.20	0.0610	0.0550	0.0070
PG05995	13.20	14.00	0.0470	0.1870	0.0060
PG05996	14.00	15.00	0.0430	0.0380	0.0060
PG05997	15.00	16.00	0.0780	0.0570	0.0080
PG05998	16.00	17.00	0.1810	0.0920	0.0160
PG05999	17.00	18.00	0.0920	0.0270	0.0090
BL00001	18.00	19.00	0.1290	0.0520	0.0140
BL00002	19.00	20.00	0.1240	0.0630	0.0130
BL00003	20.00	21.00	0.2070	0.0720	0.0160
BL00004	21.00	22.00	0.2130	0.0700	0.0170
BL00005	22.00	23.00	0.1610	0.0590	0.0150
BL00006	23.00	24.00	0.1200	0.0510	0.0090
BL00007	24.00	25.00	0.0670	0.0230	0.0090
BL00008	25.00	26.00	0.0470	0.0480	0.0050
BL00009	26.00	27.00	0.1580	0.0740	0.0120
BL00010	27.00	28.00	0.1960	0.0730	0.0160
BL00011	28.00	29.00	0.1850	0.0480	0.0190

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Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
BL00012	29.00	30.00	0.1990	0.1070	0.0200
BL00013	30.00	31.00	0.2320	0.0980	0.0200
BL00014	31.00	32.00	0.1410	0.0830	0.0140
BL00015	32.00	33.00	0.1490	0.1260	0.0120
BL00016	33.00	34.00	0.2470	0.1340	0.0180
BL00017	34.00	35.00	0.1880	0.0690	0.0130
BL00018	35.00	36.00	0.2520	0.0930	0.0190
BL00019	36.00	37.00	0.2180	0.0820	0.0170
BL00021	37.00	38.00	0.1960	0.1300	0.0170
BL00022	38.00	39.00	0.1440	0.1790	0.0110
BL00023	39.00	40.00	0.1490	0.1010	0.0110
BL00024	40.00	41.00	0.1830	0.0580	0.0160
BL00025	41.00	42.00	0.2290	0.0610	0.0190
BL00026	42.00	43.00	0.1900	0.0540	0.0170
BL00027	43.00	44.00	0.1640	0.0660	0.0130
BL00028	44.00	45.00	0.2590	0.1080	0.0210
BL00029	45.00	46.00	0.2000	0.0510	0.0140
BL00030	46.00	47.00	0.1980	0.0590	0.0150
BL00032	47.00	48.00	0.2100	0.0670	0.0150
BL00033	48.00	49.00	0.1980	0.0630	0.0160
BL00034	49.00	50.00	0.1570	0.1470	0.0130
BL00035	50.00	51.00	0.2200	0.1080	0.0170
BL00036	51.00	52.00	0.2290	0.0740	0.0180
BL00037	52.00	53.00	0.2130	0.0870	0.0190
BL00038	53.00	54.00	0.2380	0.0680	0.0220
BL00039	54.00	55.00	0.2040	0.0860	0.0180
BL00041	55.00	56.00	0.1490	0.1730	0.0130
BL00042	56.00	57.00	0.0630	0.0730	0.0070
BL00043	57.00	58.00	0.1900	0.0640	0.0160
BL00044	58.00	59.00	0.1770	0.0790	0.0150
BL00045	59.00	60.00	0.0530	0.0180	0.0060
BL00046	60.00	61.00	0.1870	0.1000	0.0150
BL00047	61.00	62.00	0.0980	0.0370	0.0100
BL00048	62.00	63.00	0.2050	0.0750	0.0180
BL00049	63.00	64.00	0.2520	0.1540	0.0220
BL00050	64.00	65.00	0.3100	0.2020	0.0250
BL00051	65.00	66.00	0.2320	0.0940	0.0210

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Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
BL00052	66.00	67.00	0.2610	0.1020	0.0230
BL00053	67.00	68.00	0.2450	0.1050	0.0230
BL00054	68.00	69.00	0.2880	0.1150	0.0260
BL00055	69.00	70.00	0.2250	0.0750	0.0210
BL00056	70.00	71.00	0.1850	0.0450	0.0190
BL00057	71.00	72.00	0.1520	0.0290	0.0170
BL00058	72.00	73.00	0.1100	0.0120	0.0150
BL00059	73.00	74.00	0.1540	0.0480	0.0190
BL00061	74.00	75.00	0.1640	0.0450	0.0200
BL00062	75.00	76.00	0.1700	0.0330	0.0180
BL00063	76.00	77.15	0.1240	0.0250	0.0150
BL00064	77.15	78.25	0.0040	0.0240	0.0020
BL00065	78.25	79.40	0.0040	0.0240	0.0020
BL00066	79.40	80.50	0.1600	0.0310	0.0180
BL00067	80.50	81.35	0.1780	0.0290	0.0190
BL00068	81.35	82.25	0.1390	0.0280	0.0160
BL00069	82.25	83.00	0.2260	0.0450	0.0230
BL00070	83.00	83.65	0.2570	0.0830	0.0230
BL00071	83.65	84.70	0.0470	0.0430	0.0060
BL00072	84.70	85.60	0.1840	0.0290	0.0200
BL00073	85.60	86.55	0.1960	0.0680	0.0200
BL00074	86.55	87.44	0.2760	0.1470	0.0240
BL00075	87.44	89.15	0.0060	0.0100	0.0030
BL00076	89.15	90.25	0.0060	0.0080	0.0020
BL00077	90.25	91.70	0.0050	0.0080	0.0030
BL00078	91.70	93.00	0.0050	0.0080	0.0030
BL00079	93.00	94.35	0.0050	0.0070	0.0030
BL00081	94.35	95.80	0.0060	0.0080	0.0030
BL00082	95.80	97.02	0.0390	0.0130	0.0050
BL00083	97.02	97.82	0.1630	0.0410	0.0180
BL00084	97.82	99.10	0.0150	0.0090	0.0030
BL00085	99.10	99.90	0.1140	0.0270	0.0130
BL00086	99.90	100.65	0.0050	0.0025	0.0020
BL00087	100.65	101.67	0.1330	0.0890	0.0140
BL00088	101.67	103.00	0.0110	0.0090	0.0030
BL00089	103.00	104.00	0.0100	0.0160	0.0030
BL00090	104.00	105.00	0.0050	0.0080	0.0030

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Samples

Sample Number	From (m)	To (m)	Ni%	Cu%	Co%
Sample Type	ASSAY				
BL00091	105.00	106.35	0.0050	0.0080	0.0020
BL00092	106.35	107.75	0.0060	0.0080	0.0030
BL00093	107.75	108.65	0.1640	0.0670	0.0160
BL00095	108.65	109.35	0.4830	0.2010	0.0430
BL00096	109.35	110.22	0.1860	0.0880	0.0170
BL00097	110.22	110.68	0.0060	0.0110	0.0005
BL00098	110.68	111.40	0.0510	0.2540	0.0040
BL00099	111.40	112.40	0.0130	0.0060	0.0010
BL00101	112.40	113.40	0.0060	0.0025	0.0005