



ASX ANNOUNCEMENT

20th January, 2010

Musgrave Nickel Project Update

- Regional vacuum drilling over the Caroline Intrusion within EL3931 Woodroffe has been successful in identifying areas prospective for Ni-Cu sulphide mineralisation.
- Initial assay results from the vacuum drilling have defined a number of encouraging anomalies that have increased the perceived prospectivity of the northern parts of the Caroline Intrusion. Nickel and copper anomalies coincide with a region of low magnetic resonance which is interpreted to reflect relatively unevolved (low Fe) mafic-ultramafic rocks.
- Nine hundred and thirty one shallow vacuum boreholes, totaling 10,252.05m, have now been completed within EL4048 and EL3931. Nickel, copper and cobalt geochemical anomalies have been identified over the Caroline Intrusion, including 81 samples ≥ 230 ppm Ni (max. 1880ppm); 83 samples ≥ 160 ppm Cu (max. 950ppm); and 83 samples ≥ 65 ppm Co (max. 1660ppm).
- Conductive zones, potentially indicating sulphide accumulations, have been identified from Tempest EM data within EL4048 and EL3931. Coincident conductive and chargeable zones have also been identified by induced polarisation traverses within EL4048.
- Twenty diamond boreholes, totaling 7,930.77m, have been completed within EL4048. Disseminated sulphides and favourable lithologies for Ni-Cu sulphide mineralisation have been intersected in all boreholes.

PepinNini Minerals Limited is currently undertaking exploration programs designed to target nickel-copper sulphide mineralisation and base metal mineralisation in the Musgrave Province, South Australia. PepinNini has four granted exploration licences (EL3368, EL3536, EL4048, EL3931) covering ~5,669 km² and four exploration licence applications (ELA118/96, ELA185/96, ELA278/82, ELA491/94) covering ~3,852 km² (Fig. 1). PepinNini subsidiary PepinNini Resources Pty Limited is earning a 51% interest in EL3931 and ELAs 278/82 and 491/94 under a Farm-in and Joint Venture Agreement with Rio Tinto Ltd subsidiary Rio Tinto Exploration Pty Limited.

Exploration activities have recently been focused on EL4048 'Mt Caroline' and EL3931 'Woodroffe', predominantly within the vicinity of the Giles Complex layered mafic-ultramafic Caroline Intrusion. The Giles Complex is considered to be highly prospective for nickel-copper sulphide and platinum group element mineralisation following the discovery of the Nebo-Babel deposit in Western Australia by WMC (392Mt @ 0.3%Ni and 0.33%Cu).

Exploration Licence EL4048 – Mt Caroline

Recent exploration activities within EL4048 have included reinterpretation of historic Tempest electromagnetic (EM) data and aeromagnetic data, seven dipole-dipole induced polarisation traverses (14.1 line kilometres), shallow vacuum drilling and diamond drilling (Fig. 2). Diamond collar locations are listed in Table 1.

In total, 856 vacuum boreholes have been completed within EL4048, totaling 9595.35m. 1854 samples have been submitted for assaying. Twenty (20) diamond boreholes (7,930.77m) have been completed within EL4048, sixteen of which have specifically targeted the Caroline Intrusion. Disseminated sulphides and favourable lithologies for Ni-Cu sulphide mineralisation have been observed in all boreholes.

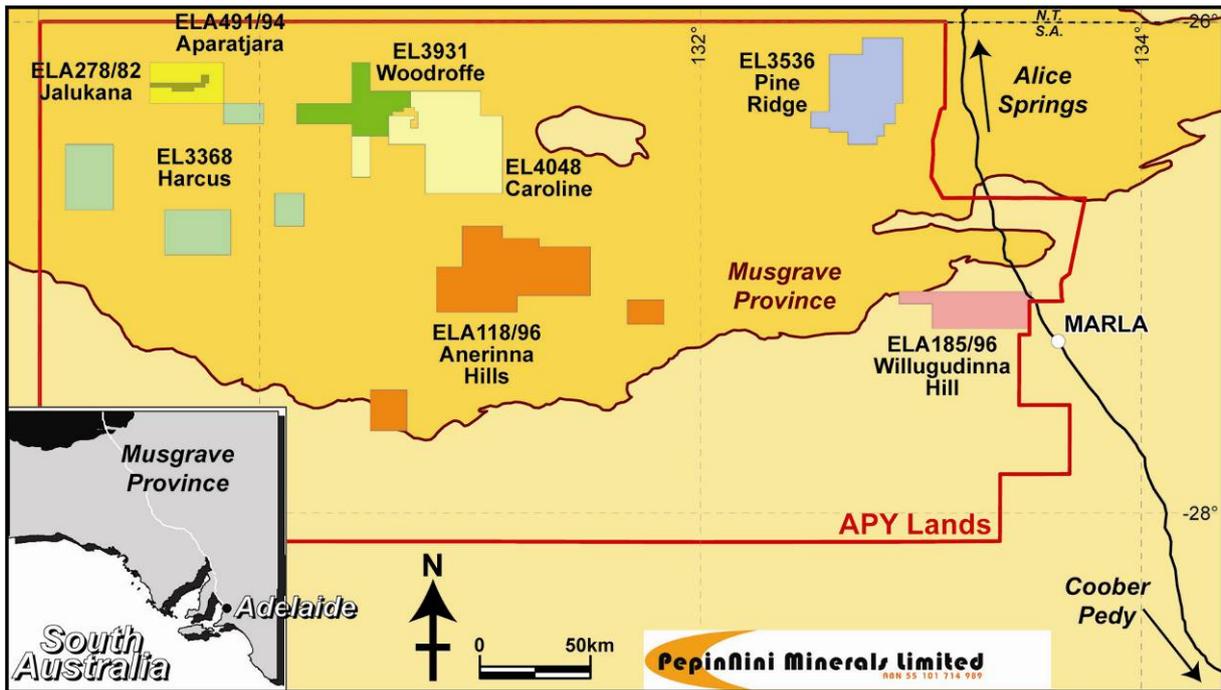


Figure 1. PepinNini tenement distribution in the Musgrave Province, South Australia.

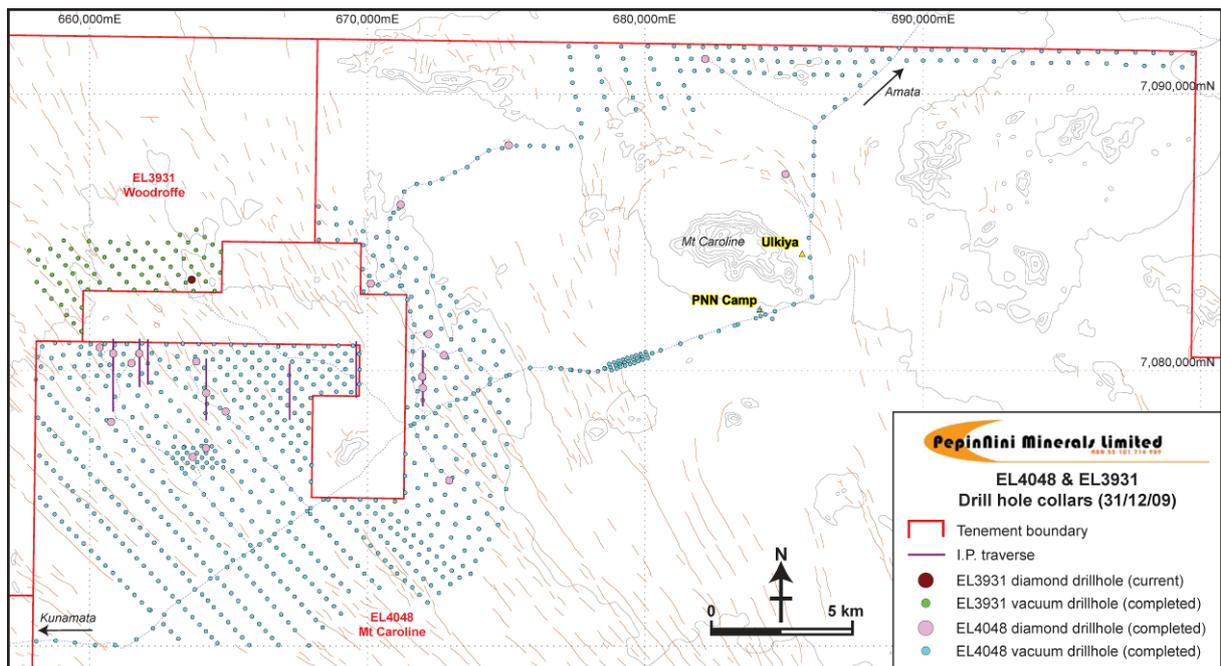


Figure 2. Exploration activities within EL4048 Mt Caroline and EL3931 Woodroffe.

Table 1. Diamond borehole collar details for EL4048 Mt Caroline.

Hole ID	MGA East	MGA North	Elevation	Dip	Azimuth	EOH Depth
DD08CAR001	672000	7079350	593	-60°	225°	432.05m
DD08CAR002	672950	7076000	586	-60°	180°	404.9m
DD08CAR003	671200	7086000	601	-90°	—	444.17m
DD08CAR004	664900	7078500	578	-60°	180°	488.97m
DD08CAR005	663847	7080315	578	-60°	315°	402.02m
DD08CAR006	685050	7087100	674	-90°	-	251.85m
DD08CAR007	660773	7078121	577	-60°	180°	440.97m
DD08CAR008	660369	7080812	590	-60°	135°	353.97m
DD09CAR009	663713	7076856	583	-90°	-	252.2m
DD09CAR010	664190	7077176	579	-90°	-	291.25m
DD09CAR011	670125	7083135	595	-60°	225°	452.87m
DD09CAR012	672201	7081297	591	-60°	225°	450.17m
DD09CAR013	661511	7080252	588	-90°	-	498.4m
DD09CAR014	672762	7080538	593	-60°	225°	450m
DD09CAR015	671979	7079772	589	-60°	180°	425.97m
DD09CAR016	675089	7088151	634	-60°	360°	465m
DD09CAR017	682162	7091275	676	-90°	-	277.3m
DD09CAR018	664199	7079174	586	-65°	180°	395.57m
DD09CAR019	660854	7080601	584	-60°	180°	402.07m
DD09CAR020	661795	7080600	590	-55°	180°	351.07m

Exploration Licence EL3931 – Woodroffe

A Work Program Clearance on EL3931 occurred during October 2009 in which ~800 vacuum boreholes and 12 diamond boreholes were approved for drilling by Traditional Owners. Vacuum drilling commenced on 11 November 2009. A total of 73 vacuum boreholes have been completed, totaling 656.7m. 157 samples were submitted for assaying. Diamond drilling within EL3931 commenced on 28 November, 2009. Borehole DD09WOD001 is currently at a depth of 128.56m (Table 2). Diamond and vacuum drilling will resume on the recommencement of exploration activities after the summer break when weather conditions improve.

Table 2. Diamond borehole collar details for EL3931 Woodroffe.

Hole ID	MGA East	MGA North	Elevation	Dip	Azimuth	EOH Depth
DD09WOD001	663680	7083273	606	-60°	150°	current

Vacuum Assay Data Summary – EL4048 Mt Caroline and EL3931 Woodroffe

Regional vacuum drilling over the Caroline Intrusion has been successful in identifying areas prospective for Ni-Cu(-Co) sulphide mineralisation which will be further tested by infill vacuum drilling and diamond drilling. It has been determined that the regolith geochemistry is affected by the presence of palaeochannels which partly obscures the geochemical footprint of the underlying bedrock. This observation provides encouragement where the margins of the palaeochannels are flanked by anomalies such as within EL3931. A selection of highest vacuum assay results from EL4048 and EL3931 are listed in Table 3. Spatial images of nickel, copper and cobalt assay results are displayed in Figures 3 – 6. The magnitude of the anomalies within EL3931 and their spatial relationship to the Caroline Intrusion stratigraphy is considered to be highly encouraging. This is because the anomalous results are associated with a region of relatively low magnetic resonance, which is likely reflecting low-Fe, high-Mg magmatic differentiates. These differentiates are more likely to be Ni-Cu enriched.

Table 3. Selection of vacuum drilling assay results from EL4048 and EL3931.

Tenement	Hole ID	Sample	East GDA	North GDA	From (m)	To (m)	Ni (ppm)	Cu (ppm)	Co (ppm)
EL4048 Mt Caroline	VC021	104079	671567	7077991	2.3	3.2	480	44	65
		104080			3.2	3.8	510	65	75
	VC121	104256	660389	7080564	5.7	6.6	235	360	40
	VC131	104273	663741	7076852	3.9	4.8	1340	190	1660
		104274			4.8	5.7	1880	95	475
	VC249	104459	661572	7075807	7.5	8.4	260	335	47.5
	VC389	104776	661190	7080202	15.6	16.5	170	165	650
		104777			16.5	17.4	160	115	350
	VC396	104804	659798	7079778	18.3	19.2	750	305	1000
	VC415	104840	662256	7076340	12	1.9	430	190	415
	VC416	104842	662654	7075929	12	12.9	600	150	42.5
	VC418	104848	664420	7076470	8.4	9.3	215	80	340
	VC424	104864	664585	7076633	8.4	9.3	270	140	700
	VC425	104867	664410	7076796	4.8	5.7	440	455	75
		104868			5.7	6.6	395	365	65
	VC505	105834	672301	7074008	7.5	8.4	65	340	60
	VC550	105912	672858	7078009	6.6	7.5	210	185	385
	VC555	105927	674574	7076144	13.8	14.7	335	120	355
	VC558	105937	674623	7076916	12	12.9	550	170	110
	VC808	106510	665600	7080905	5.7	6.6	700	285	750
	106511			9.3	10.2	600	105	165	
VC813	106523	666883	7079534	8.4	8.9	400	85	50	
EL3931 Woodroffe	WVC001	106644	664734	7084279	7.5	8.1	250	330	20.5
	WVC002	106645	664432	7084550	5.7	6.6	490	250	390
		106646			10.2	11.1	600	120	95
		106647			12	12.9	950	370	130
	WVC015	106669	663387	7084038	8.4	9.3	700	365	37.5
	WVC020	106677	662645	7084032	5.7	6.6	1600	950	44
		106678			10.2	11.1	700	600	28
	WVC038	106716	662388	7082884	3.9	4.8	1400	295	185
		106717			6.6	7.5	1500	200	185
		106718			7.5	8.4	800	145	95
WVC050	106744	660169	7083483	3.9	4.8	500	500	75	
WVC066	106782	659724	7082266	6.6	7.5	315	360	650	

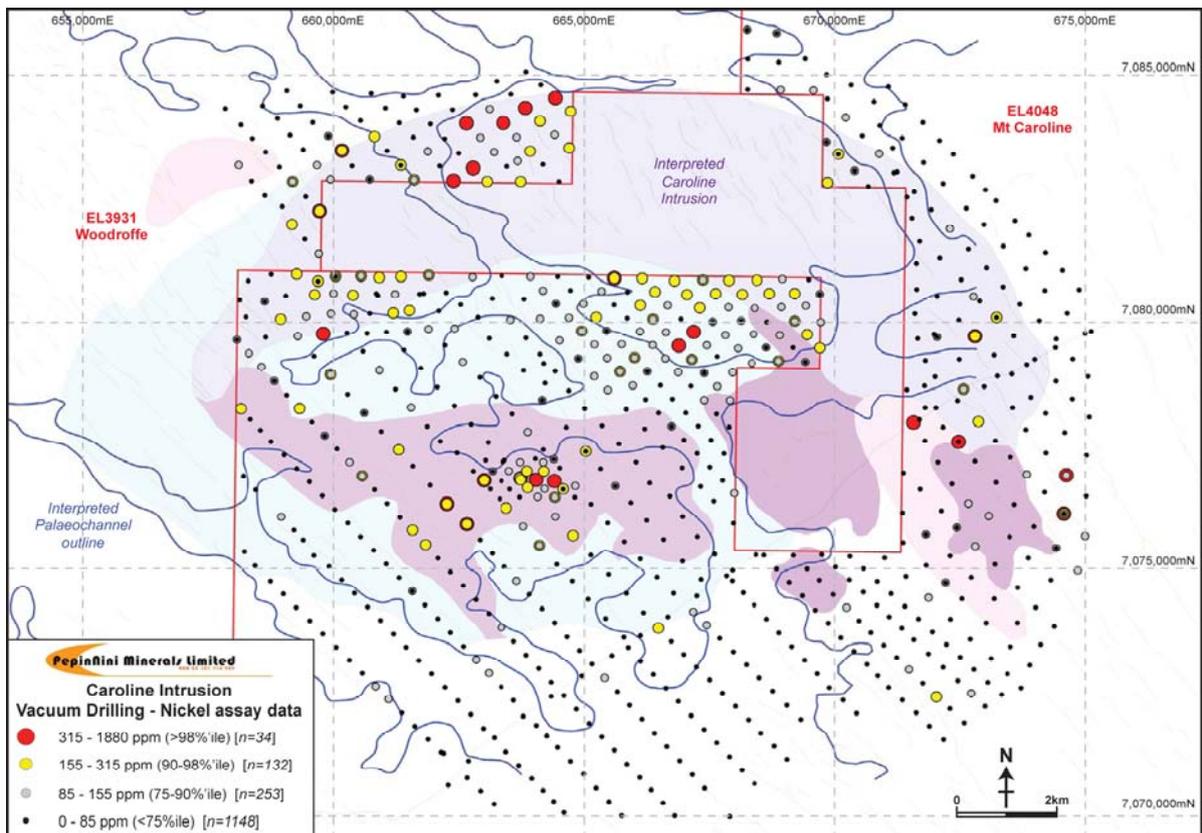


Figure 3. Nickel assay results from vacuum drilling over interpreted Caroline Intrusion.

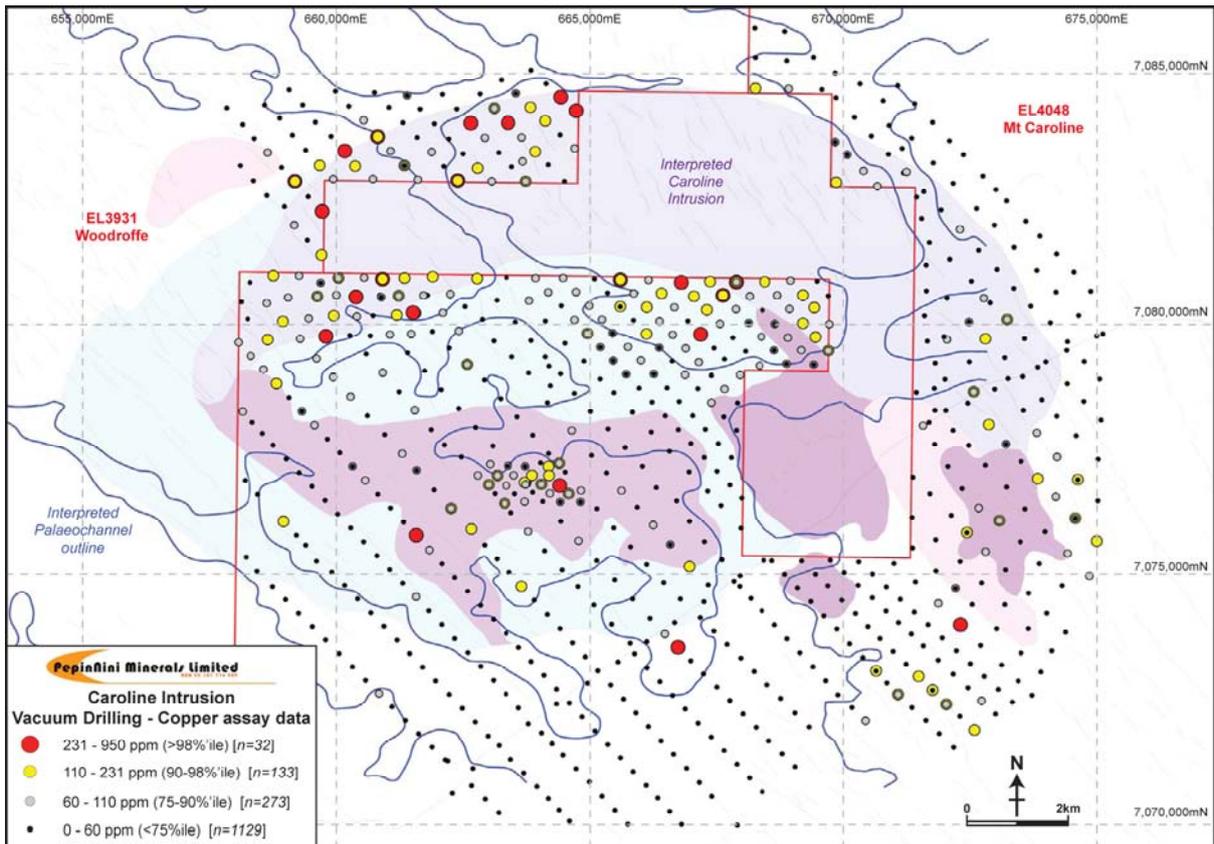


Figure 4. Copper assay results from vacuum drilling over interpreted Caroline Intrusion.

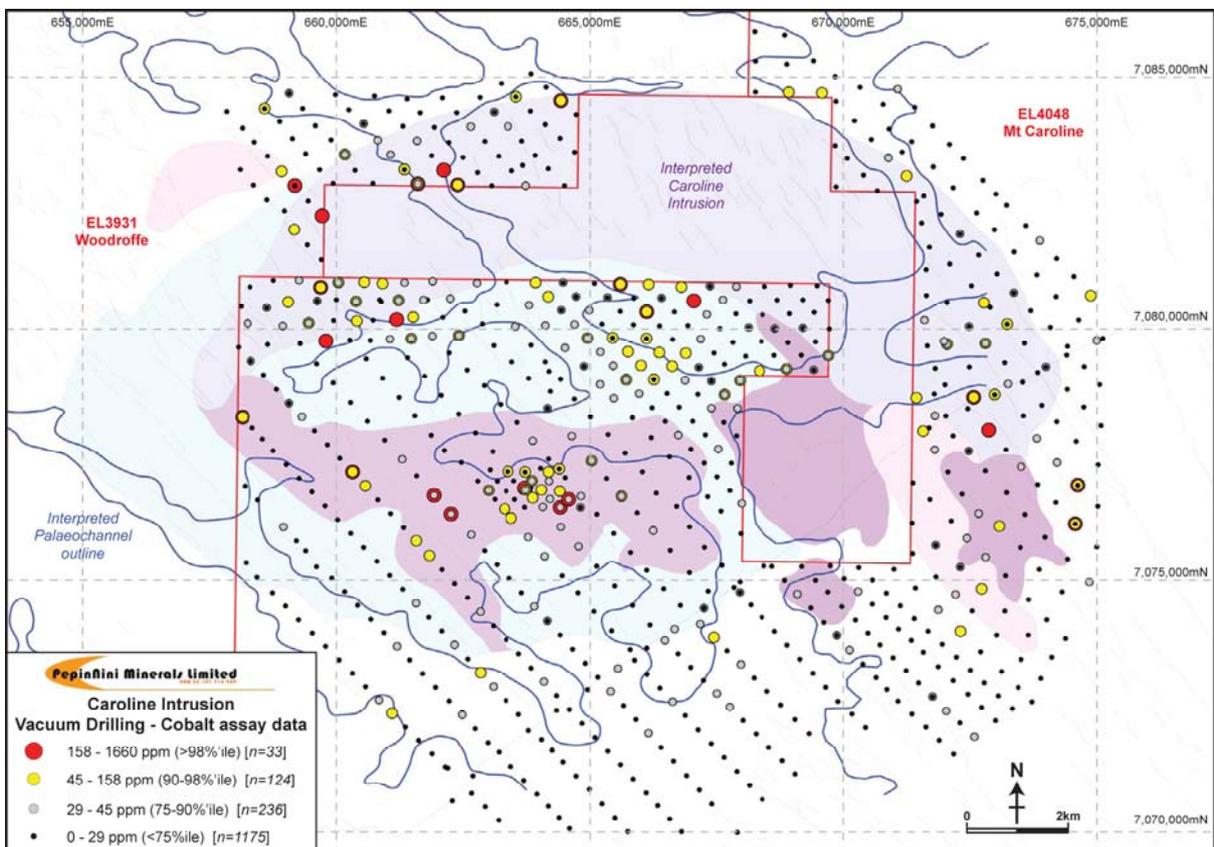


Figure 5. Cobalt assay results from vacuum drilling over interpreted Caroline Intrusion.

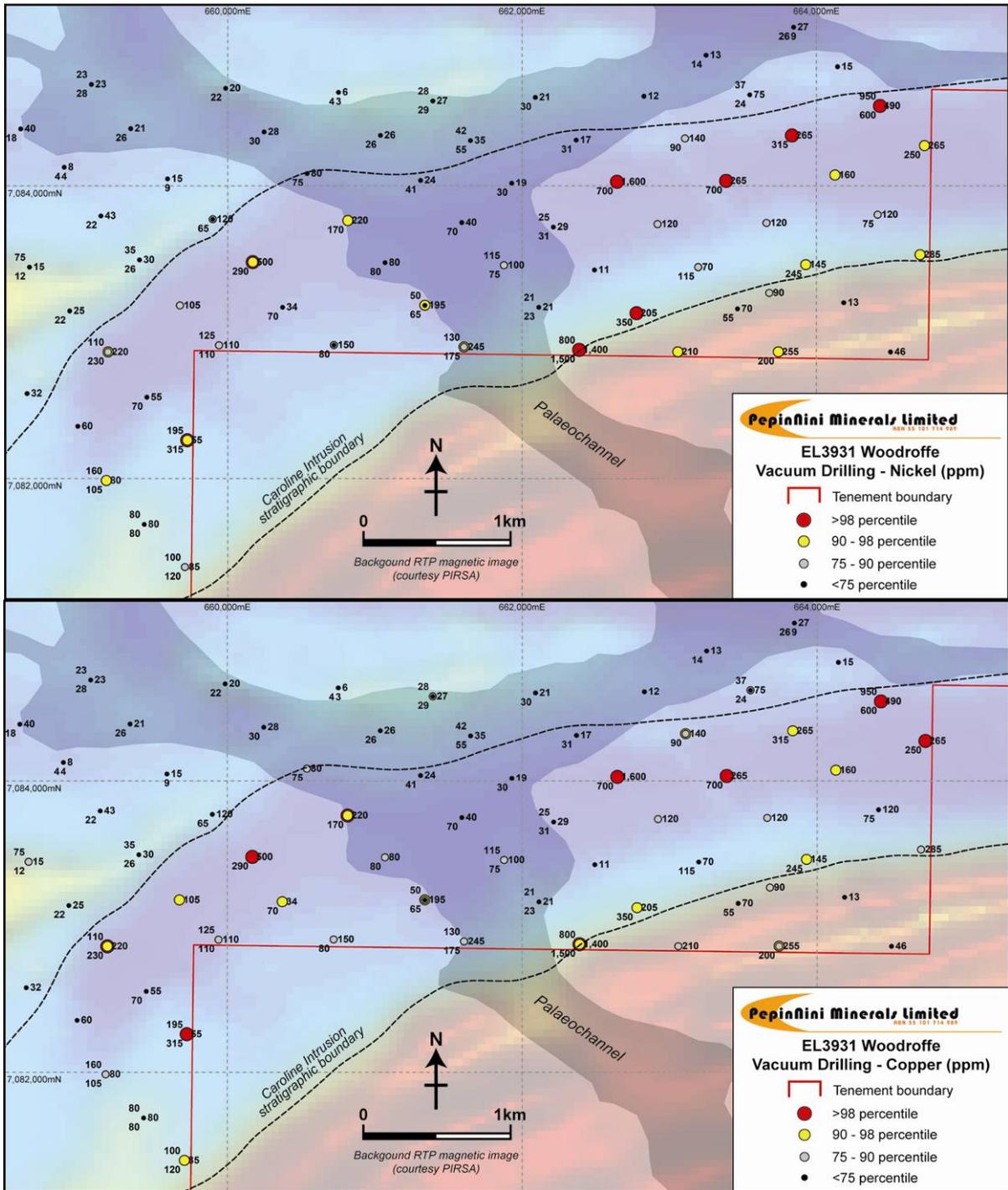


Figure 6. Nickel and copper assay results from vacuum drilling over interpreted Caroline Intrusion within EL3931 Woodroffe.

The information in this report that relates to Exploration Results is based on information compiled by Norman Kennedy BSc MAusIMM. Norman Kennedy is the Chairman and Managing Director of PepinNini Minerals Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2004 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Norman Kennedy consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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Note: Additional information on PepinNini Minerals Limited can be found on the website:

www.pepinnini.com.au