



Report for the Quarter Ending 31st March, 2010

30th April, 2010

Highlights

- ◆ Initial reconnaissance surface sampling and preliminary geological mapping has confirmed encouraging iron mineralisation at twelve prospect sites investigated within the Robinson Range Iron Ore project area located in the Midwest Region of Western Australia. Very encouraging surface sample assay results of up to 67.3% Fe have been reported with samples >60% Fe at the twelve prospective sites.
- ◆ Seventy eight shallow vacuum boreholes, totaling 471.3m were completed during the quarter within EL3931 located within the Musgrave Province of South Australia. Nickel, copper and cobalt geochemical anomalies have been identified and are being investigated by diamond drilling. The nickel and copper anomalies coincide with a region of low magnetic resonance which is interpreted to reflect relatively unevolved (low Fe) and potentially Ni-Cu-rich mafic-ultramafic rocks.
- ◆ An independent JORC compliant estimate of the mining recoverable uranium resources of the Crocker Well Uranium Project has been prepared by Hellman & Schofield (H&S). At a cutoff grade of 150ppm U₃O₈ the combined deposits at Crocker Well consists of an Indicated Resource totaling 13,250,000 tonnes at 283 ppm U₃O₈ for 3,750 tonnes (8.27 Mlbs) U₃O₈, and an Inferred Resource totaling 5,590,000 tonnes at 275 ppm U₃O₈ for 1,537 tonnes (3.39 Mlbs) U₃O₈.
- ◆ The joint venture alliance between Sinosteel Corporation and PepinNini Minerals Limited has commenced the investigation of the mineralisation potential other than uranium within the Curnamona Province Project area. Under the Joint Venture Agreement Sinosteel Corporation has a commitment to spend \$6million investigating the non uranium mineral potential within the tenements. A detailed ground gravity survey has been undertaken within EL 3587 Scott Hill and the new data has identified a number of discrete positive gravity anomalies as well as enabling the identification of regional structures and the mapping of potential palaeo-channels.
- ◆ A drilling program of 27 RC boreholes has been designed to investigate the high grade gold and copper mineralization identified in surface samples collected from EPM15457 The Return and over portions of EPM15440 Percyville located in north Queensland.
- ◆ At the end of the quarter the Company held \$7.0 million in cash.



SOUTH AUSTRALIA

Musgrave Province Project

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 ~5,669km² and four exploration licence applications (ELA118/96, ELA185/96, ELA278/82, ELA491/94) covering ~3,852km² (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.

During the quarter exploration activity was focused on 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 EL3931 – Woodroffe

Field-based exploration activities commenced within EL3931 during the Quarter ended 31st December 2009. Exploration activities have been focused on the northern regions of the Giles Complex Caroline Intrusion. The Caroline Intrusion is considered highly prospective for Ni-Cu(-PGE) mineralisation. During the Quarter to 30th March 2010, a further 78 vacuum boreholes were completed, totaling 471.3m. These boreholes have been drilled as part of a broader infill drilling program adjacent to previously identified vacuum anomalies.

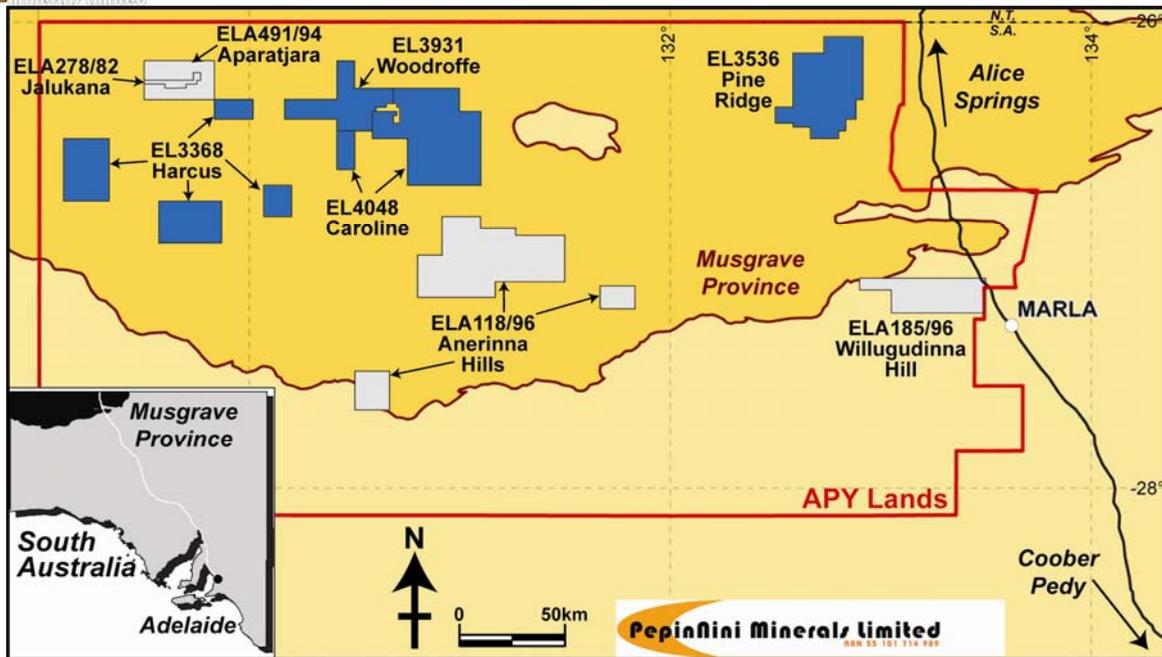


Figure 1. PepinNini tenement distribution in the Musgrave Province, South Australia

A total of 151 vacuum boreholes have now been completed within EL3931 over the interpreted Caroline Intrusion, totaling 1128m. Assay results from 323 samples have been received to date. Results from an additional 121 samples collected during the infill drilling program are pending. Maximum assay results received to date are listed in Table 1 and shown in Figure 2. Currently the vacuum rig is completing the infill drilling program over the interpreted Caroline Intrusion.

Diamond drilling recommenced in the New Year on 28th February. During the Quarter, 3 diamond boreholes were completed and a fourth was commenced (Table 2). The diamond boreholes targeted geochemical and geophysical anomalies identified over the interpreted Caroline Intrusion (Fig. 2). Cumulate textures within pyroxenite and mela-gabbronorite lithologies have been intersected in all boreholes. Inter-cumulate sulphides have also been observed and suggest that primary sulphides existed in the melt. These features are considered highly favourable for hosting Ni-Cu sulphide mineralisation. Assay results from 126 core samples collected during the Quarter are pending.

Table 1. Vacuum drilling maximum assay results, EL3931 'Woodroffe' (Datum: MGA GDA94 z52).

Hole ID	Sample	Easting	Northing	From (m)	To (m)	Co (ppm)	Cu (ppm)	Ni (ppm)
WVC001	106644	664734	7084279	7.5	8.1	20.5	330	250
WVC002	106647	664432	7084550	12	12.9	130	370	950
WVC002	106646	664432	7084550	10.2	11.1	95	120	600
WVC002	106645	664432	7084550	5.7	6.6	390	250	490
WVC015	106669	663387	7084038	8.4	9.3	37.5	365	700
WVC020	106677	662645	7084032	5.7	6.6	44	950	1600
WVC020	106678	662645	7084032	10.2	11.1	28	600	700
WVC037	106713	662113	7083175	3.9	4.8	210	18	21
WVC037	106715	662113	7083175	11.1	12	230	17	21
WVC038	106717	662388	7082884	6.6	7.5	185	200	1500
WVC038	106716	662388	7082884	3.9	4.8	185	295	1400
WVC038	106718	662388	7082884	7.5	8.4	95	145	800
WVC050	106744	660169	7083483	3.9	4.8	75	500	500
WVC064	106777	659186	7082869	6.6	7.5	245	175	230
WVC064	106776	659186	7082869	4.8	5.7	250	240	220
WVC066	106782	659724	7082266	6.6	7.5	650	360	315
WVC066	106783	659724	7082266	10.2	11	220	245	195

Table 2. Diamond borehole collar details, EL3931 'Woodroffe' (*Datum: MGA GDA94 z52*).

Hole ID	Easting	Northing	Angle	Azimuth	EOH depth (m)
DD09WOD001	663680	7083273	-60°	150°	309.07
DD10WOD002	662638	7084052	-60°	160°	288
DD10WOD003	663384	7084063	-60°	160°	247.57
DD10WOD004	664422	7084578	-60°	160°	current

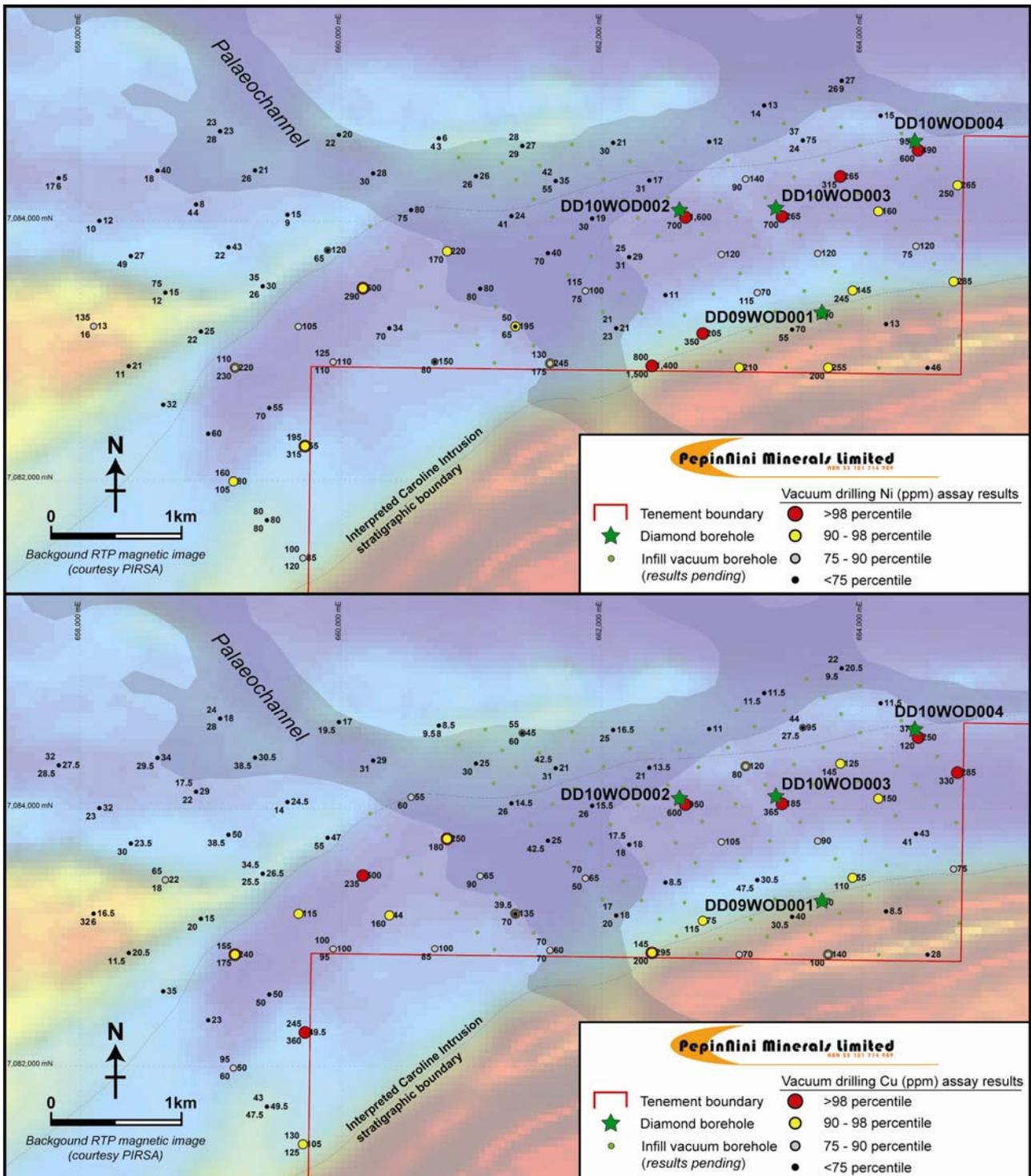


Figure 2. Vacuum drilling assay results and diamond borehole localities, EL3931 Woodroffe.

Curnamona Province Project

The development of the Crocker Well Uranium Deposit by Sinosteel Corporation (60%) and PepinNini Minerals (40%) is being managed by Sinosteel PepinNini Curnamona Management Pty Limited (SPCM) on behalf of the Joint Venture partners. The project has its own dedicated website at www.crockerwell.com.au.

An independent JORC compliant estimate of the mining recoverable uranium resources of the Crocker Well Uranium Project has been prepared by Hellman & Schofield (H&S). At a cutoff grade of 150ppm U₃O₈ the combined deposits at Crocker Well consists of an Indicated Resource totaling 13,250,000 tonnes at 283 ppm U₃O₈ for 3,750 tonnes (8.27 Mlbs) U₃O₈, and an Inferred Resource totaling 5,590,000 tonnes at 275 ppm U₃O₈ for 1,537 tonnes (3.39 Mlbs) U₃O₈.

The combined Indicated and Inferred Uranium Recoverable Resource estimate for the Crocker Well Project at a cutoff grade of 150ppm U₃O₈ is 18,840,000 tonnes at 281 ppm U₃O₈ for 5,290 tonnes (11.66 Mlbs) U₃O₈.

Combined deposit resource includes resources in four separate deposits namely Crocker East, Crocker Central, Crocker Original and Crocker Junction. The location of the four deposits and resource estimates is presented in Figure 4.

This resource has been estimated using data from 31 diamond drill holes and 542 Reverse Circulation (RC) holes across four deposits in a combined area totaling approximately 45 hectares to an approximate depth of 160m. A bulk density SG (Specific Gravity) of 2.65gms/cc has been estimated for the granodiorite, alaskite, adamellite and biotite-alaskite lithologies at Crocker Well.

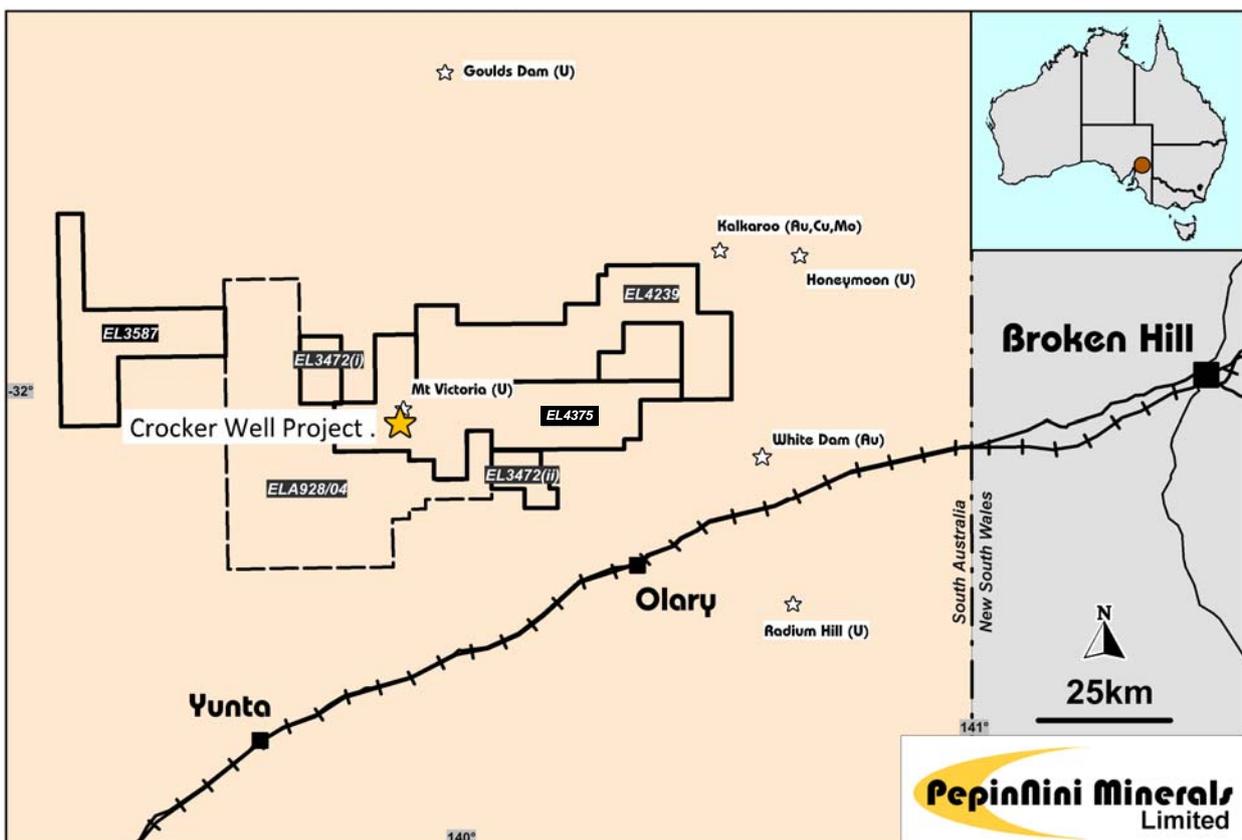


Figure 3 Crocker Well Project Location Plan

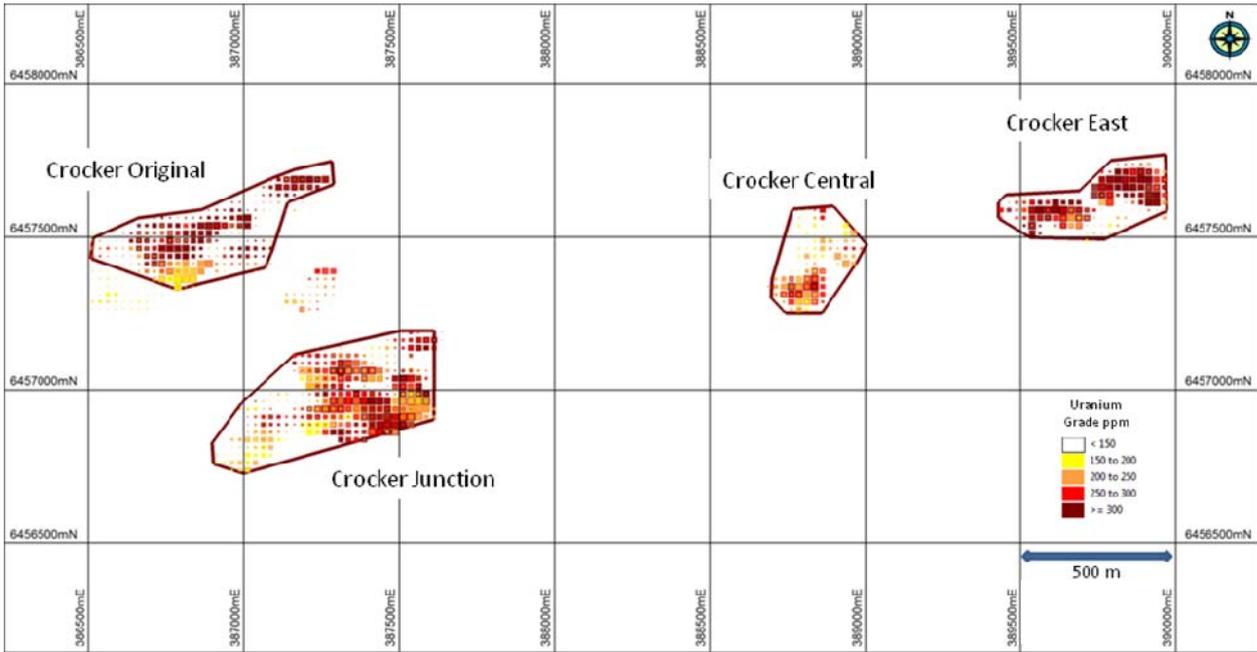


Figure 4 Crocker Well Deposits and plan of resource block models

Investigation of potential additional uranium resource targets

The potential for additional resources from other uranium prospects within the vicinity of Crocker Well is currently being investigated. Five fully cored diamond drill holes have been completed for a total of 648.1m to verify the previously identified resource at the historic Mt Victoria Uranium Deposit. A reverse circulation drilling program of 23 boreholes for 2,236m has also been completed to investigate other regional prospects including Becaroo, Anomaly A and NE Extension. Results from laboratory analysis of core samples from Mt Victoria are yet to be received. A total of 1,201 samples, inclusive of standards (42) and duplicates (37), have been submitted for multi-element analysis. All holes have been geophysically logged for total gamma as well as magnetic deviation and magnetic susceptibility.

Investigation of non uranium targets

During the quarter SPCM initiated field exploration activities to investigate the potential for non uranium mineralization within the tenements. Under the Joint Venture Agreement Sinosteel Corporation has a commitment to spend \$6million investigating the non uranium mineral potential within the tenements. The tenements are considered prospective for copper/gold and lead/zinc mineralization with at least 30 prospects identified from previous investigation. Previous explorers have reported encouraging intersections such as 10m @ 2.07g/t Au, 0.74% Cu, 5.6m @ 8.5% Cu and 32m @ 0.66% Zn.

A detailed ground gravity survey has been undertaken by the Joint Venture within EL 3587 Scott Hill and the new data has identified a number of discrete positive gravity anomalies as well as enabling the identification of regional structures and the mapping of potential palaeo-channels.

A detailed airborne magnetic and radiometric survey is scheduled to be completed during the next quarter over EL 4239 Kalabity.

Robinson Range Iron Ore Project

During the quarter the results from a detailed reconnaissance surface mapping and sampling program undertaken at the end of the previous quarter were assessed. The field program included the collection of 302 surface samples from 12 outcropping prospects.

The Robinson Range Iron Ore Project lies in the Midwest region of Western Australia (Figure 5). The project is located 850kms north of Perth and 550kms north east of the planned Oakajee Port and Rail development near Geraldton. The region has emerged as Western Australia’s next major iron ore province (second to the Pilbara) and holds considerable potential for the discovery of both iron-ore and manganese deposits. Sinosteel-Midwest in particular has been actively exploring adjoining exploration licences to identify iron ore resources during 2009.

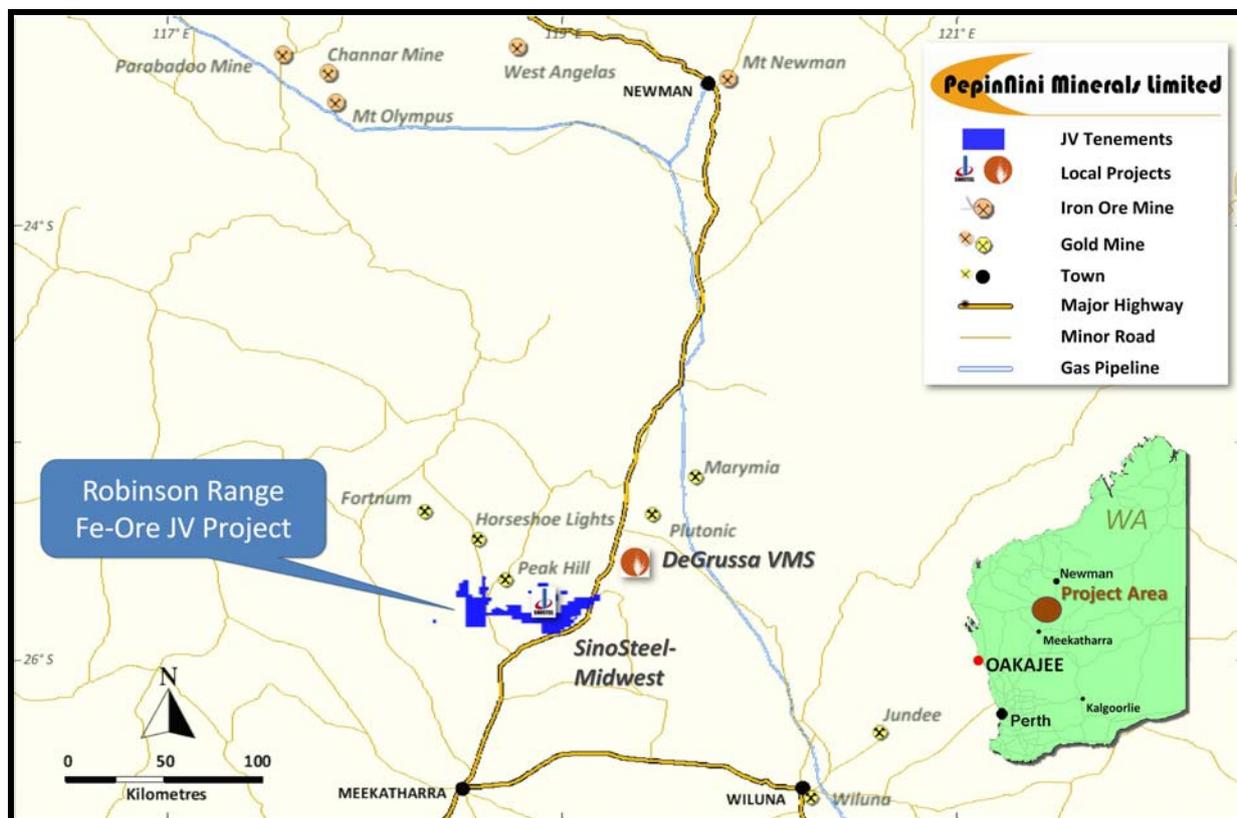


Figure 5. Location of the Robinson Range Iron Ore Project.

The Robinson Range Iron Ore Project covers part of the Bryah-Padbury Basin and contains approximately 40km strike length of Robinson Range Formation considered highly prospective for iron ore. The sequence includes banded iron and granular iron formation units which variably outcrop within the licences. Supergene enriched Hematite and Hematite-Goethite mineralisation associated with these units form the primary target of the project.

Fourteen prospect locations situated within the prospective terrain were targeted for initial field investigations. Twelve of the prospects were visited during field reconnaissance operations at the end of 2009. Surface outcrop mapping and sampling was undertaken to gather information for the prioritisation of the targets.

Initial reconnaissance surface sampling and preliminary geological mapping has confirmed strong iron mineralisation at twelve prospect sites investigated within the project area. Results of up to 67.3% Fe have been returned from rock chip samples with all prospect areas returning values in excess of 60% Fe. In total 179 samples returned results in excess of 55% Fe.

PepinNini has also undertaken reprocessing and 3D modelling of geophysical data to complement the detailed gravity surveying it commissioned in 2008. Modelling is aiding the ranking and identification of prospect areas.

The reconnaissance investigations identified considerable areas of outcropping and sub-cropping surface iron mineralisation at most of the prospect sites. True strike extent of the Hematite and Hematite-Goethite enriched units could not be accurately established due to discontinuous nature of outcrop and intermittent areas of sand, talus and colluvium. However, indications are encouraging that substantial bodies of mineralised rock will lie beneath the surface veneer and drilling is being planned to resolve this.

Table 3: Summary and distribution of rock chip sample results

	No. Samples	No. with Fe > 55%	Maximum Fe
PNN-Area Ai	9	8	65.5%
PNN-Area A	30	17	64.0%
PNN-Area B	32	8	64.5%
PNN-Area C	44	32	67.3%
PNN-Area C [east]	16	14	66.4%
PNN-Area D	23	21	65.1%
PNN-Area E	-	-	-
PNN-Area F	-	-	-
PNN-Area G	24	6	62.4%
PNN-Area H	17	8	62.8%
PNN-Area I	11	4	60.7%
PNN-Area J	25	16	64.3%
PNN-Area K	26	12	64.8%
PNN-Area L	44	32	66.5%

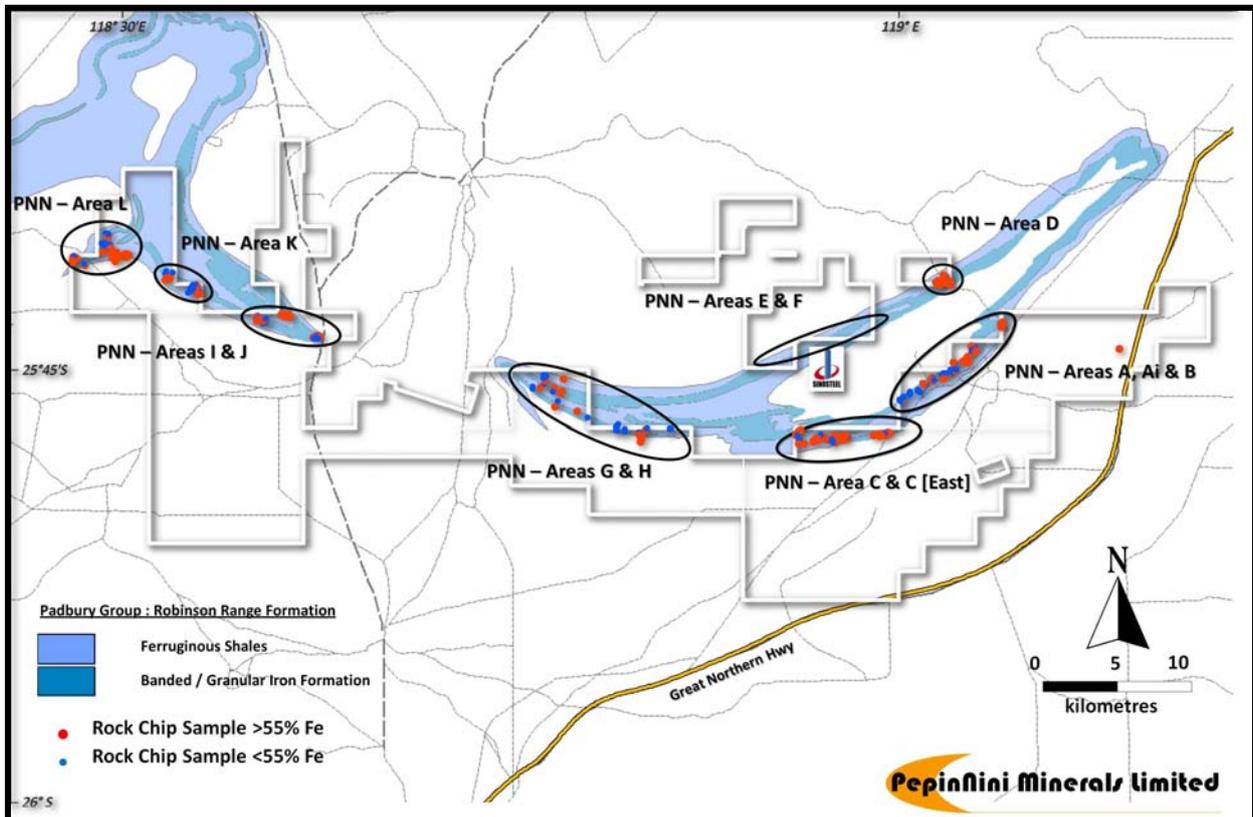


Figure 6. Robinson Range Iron Ore Project - Prospect Location & Surface Sample Results



Figure 7. PNN-Area C Prospect – Iron enriched outcrop

PepinNini is in discussions to finalise a Joint Venture Agreement to facilitate progressing the exploration and development of the identified Direct Shipping Ore (DSO) potential within the 7 tenements of approximately 700 km² comprising the project.

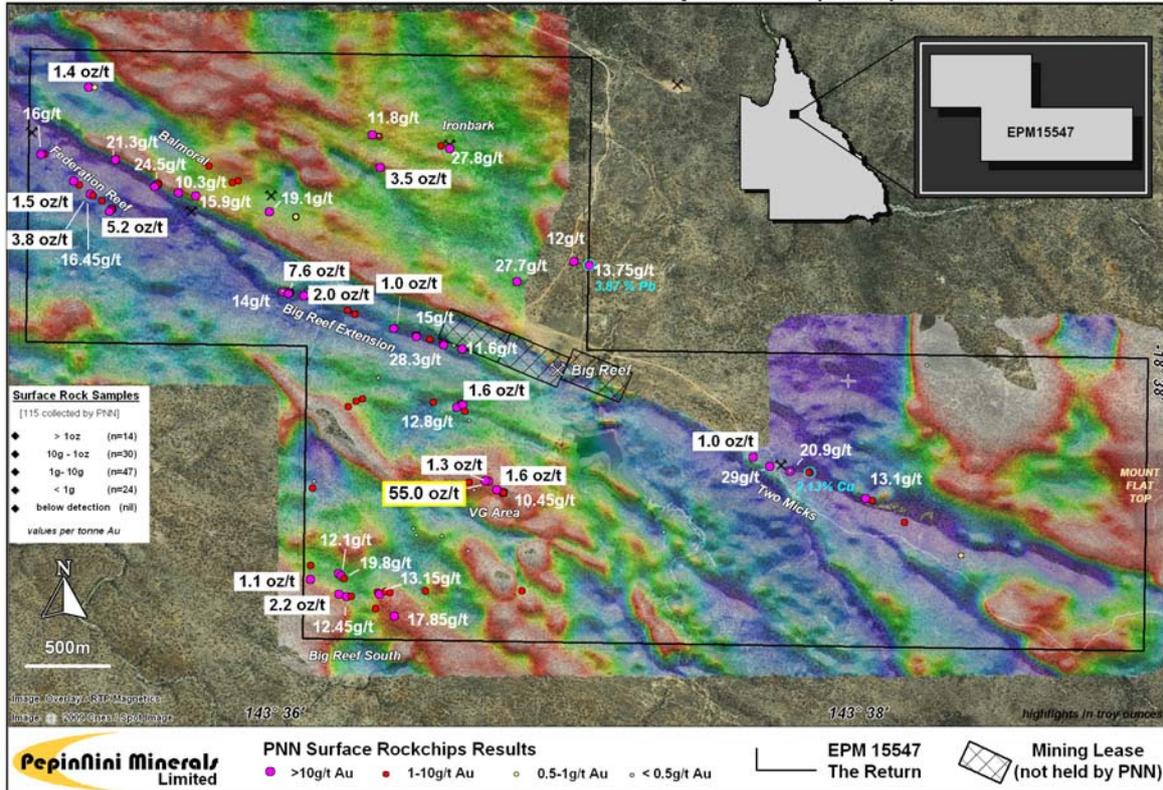
The proposed Joint Venture would undertake reverse circulation drilling across at least seven prospects where iron mineralisation has been confirmed and where potential extensions to the mineralisation may be concealed by the shallow alluvial sediments. The intention of the drilling will be to define the depth, thickness, volume, grade and quality of the confirmed and interpreted zones of supergene iron enrichment.

During the initial reconnaissance program PepinNini opened dialogue with the Jidi Jidi Aboriginal Corporation which represents the native title holders of the land. It is the intention of the proposed Joint Venture to seek land access agreements and approval for drilling from the Nharnuwangga, Wajarri and Ngarla Native Title Holders through the Jidi Jidi Aboriginal Corporation in preparation of Heritage Clearance and protection work prior to the implementation of the proposed drilling program.

NORTH QUEENSLAND

A drilling program of 27 RC holes for 3,450m has been prepared to investigate high grade gold and copper mineralisation within EPM15547 The Return and EPM15440 Percyville. Subject to obtaining statutory approvals and heritage clearances it is scheduled for the field activities to be completed during the next quarter.

The Return EPM15547 - Rock Chip Results (Gold)



The information in this report that relates to Exploration Results and Mineral Resources 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.

For further information please contact:

Mr Norman Kennedy
Chairman and Managing Director, PepinNini Minerals Limited
Phone: (08) 8218 5000

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

www.pepinnini.com.au

Additional information for the Crocker Well Uranium Project can be found on the website:

www.crockerwell.com.au

Appendix 5B

Mining exploration entity quarterly report

Introduced 1/7/96. Origin: Appendix 8. Amended 1/7/97, 1/7/98, 30/9/2001.

Name of entity

PepinNini Minerals Limited

ABN

55 101 714 989

Quarter ended ("current quarter")

March 2010

Consolidated statement of cash flows

	Current quarter \$A'000	Year to date (... 9... months) \$A'000
Cash flows related to operating activities		
1.1 Receipts from product sales and related debtors	9	9
1.2 Payments for (a) exploration and evaluation (b) development (c) production (d) administration	(794)	(3,924)
1.3 Dividends received	(133)	(667)
1.4 Interest and other items of a similar nature received	76	283
1.5 Interest and other costs of finance paid		
1.6 Income taxes paid		
1.7 Other (Government Grants)	3	3
Net Operating Cash Flows	(839)	(4,296)
Cash flows related to investing activities		
1.8 Payment for purchases of: (a)prospects (b)equity investments (c)other fixed assets		(111)
1.9 Proceeds from sale of: (a)prospects (b)equity investments (c)other fixed assets		
1.10 Loans to other entities		
1.11 Loans repaid by other entities		
1.12 Other (provide details if material) – controlled entity contributing cash		
Net investing cash flows	-	(111)
1.13 Total operating and investing cash flows (carried forward)	(839)	(4,407)

+ See chapter 19 for defined terms.

Appendix 5B
Mining exploration entity quarterly report

1.13	Total operating and investing cash flows (brought forward)	(839)	(4,407)
	Cash flows related to financing activities		
1.14	Proceeds from issues of shares, options, etc.	-	-
1.15	Proceeds from sale of forfeited shares		
1.16	Proceeds from borrowings		
1.17	Repayment of borrowings		
1.18	Dividends paid		
1.19	Other – On market Share Buy-back	-	-
	Net financing cash flows	-	-
	Net increase (decrease) in cash held	(839)	(4,407)
1.20	Cash at beginning of quarter/year to date	7,826	11,394
1.21	Exchange rate adjustments to item 1.20		
1.22	Cash at end of quarter	6,987	6,987

Payments to directors of the entity and associates of the directors

Payments to related entities of the entity and associates of the related entities

		Current quarter \$A'000
1.23	Aggregate amount of payments to the parties included in item 1.2	115
1.24	Aggregate amount of loans to the parties included in item 1.10	

1.25 Explanation necessary for an understanding of the transactions

Within Item 1.2	
1. Managing Director, Administration Director and non-executive directors' remuneration	\$115,000
2. Reimbursement of Directors' expenses	\$0

Non-cash financing and investing activities

2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows

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2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

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Financing facilities available

Add notes as necessary for an understanding of the position.

		Amount available \$A'000	Amount used \$A'000
3.1	Loan facilities		
3.2	Credit standby arrangements		

+ See chapter 19 for defined terms.

Estimated cash outflows for next quarter

		\$A'000
4.1	Exploration and evaluation	1,000
4.2	Development	
Total		1,000

Reconciliation of cash

Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts is as follows.		Current quarter \$A'000	Previous quarter \$A'000
5.1	Cash on hand and at bank	1,487	3,294
5.2	Deposits at call	5,500	4,532
5.3	Bank overdraft		
5.4	Other (provide details)		
Total: cash at end of quarter (item 1.22)		6,987	7,826

Changes in interests in mining tenements

	Tenement reference	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1	Interests in mining tenements relinquished, reduced or lapsed	EPM 15160 Surrender EPM 15167 Surrender EPM 15170 Statutory partial relinquishment EPM 15990 Statutory partial relinquishment	4 sub-blocks 3 sub-blocks 11 sub-blocks 99 sub-blocks	0 sub-blocks 0 sub-blocks 6 sub-blocks 45 sub-blocks
6.2	Interests in mining tenements acquired or increased	nil	nil	nil

+ See chapter 19 for defined terms.

Appendix 5B
Mining exploration entity quarterly report

Issued and quoted securities at end of current quarter

Description includes rate of interest and any redemption or conversion rights together with prices and dates.

	Total number	Number quoted	Issue price per security (see note 3) (cents)	Amount paid up per security (see note 3) (cents)
7.1 Preference securities <i>(description)</i>				
7.2 Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs, redemptions				
7.3 +Ordinary securities	78,202,499	78,202,499	N/A	N/A
7.4 Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs				
7.5 +Convertible debt securities <i>(description)</i>				
7.6 Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted				
7.7 Options <i>(description and conversion factor)</i>	500,000 600,000 100,000		<i>Exercise price</i> 138 cents 130 to 230 cents 35 cents	<i>Expiry date</i> 30 Nov 2010 31 Jan 2011 31 Dec 2010
7.8 Issued during quarter				
7.9 Exercised during quarter				
7.10 Expired during quarter				
7.11 Debentures <i>(totals only)</i>				
7.12 Unsecured notes <i>(totals only)</i>				

+ See chapter 19 for defined terms.

Compliance statement

- 1 This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act or other standards acceptable to ASX (see note 4).
- 2 This statement does give a true and fair view of the matters disclosed.



Sign here:

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Date **Friday 30th April 2010.**

Print name:

.....**Rebecca Holland-Kennedy**.....

Notes

- 1 The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.
- 2 The "Nature of interest" (items 6.1 and 6.2) includes options in respect of interests in mining tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.
- 3 **Issued and quoted securities** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.
- 4 The definitions in, and provisions of, *AASB 1022: Accounting for Extractive Industries* and *AASB 1026: Statement of Cash Flows* apply to this report.
- 5 **Accounting Standards** ASX will accept, for example, the use of International Accounting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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