ABOUT

PepinNini Minerals Limited is a diversified ASX listed Australian Exploration Company focused on exploring, discovering and developing a significant mineral resource. PepinNini has exploration tenements prospective for Kaolin on the Eyre Peninsula and nickel-copper-cobalt-PGE in the Musgrave Province of South Australia and hold a Minerals brine resource in Salta Province, Argentina. The company also holds a copper-gold exploration project in Salta Province, Argentina

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ASX RELEASE 28 July 2021 ASX: **PNN**

Promising Sample Results at Eyre Peninsula Kaolin Project

PepinNini Minerals Ltd (PepinNini, PNN) Directors today reported promising results from analysis of four samples from its kaolin project in the Eyre Peninsula, South Australia.

Three of the samples were taken during a preliminary field reconnaissance trip in May (see ASX announcement 5 July). The fourth sample was part of drill core stored at the SA Dept of Energy and Mines core library in Adelaide, collected from drilling conducted in 1993 of boreholes located within ground subject to PepinNini's ELA 2020/175.

Analysis was carried out by Bureau Veritas Minerals using XRF(X-Ray Fluorescence) and by CSIRO using XRD(X-Ray Diffraction Mineral Identification). Kaolinite was reported in three samples with preliminary identification of halloysite by XRD in one of these samples, to be confirmed by SEM (Scanning Electron Microscope) at Adelaide university.

See Figure 1 and Table 1 for sample locations and Tables 2 and 3 for sample analysis results.

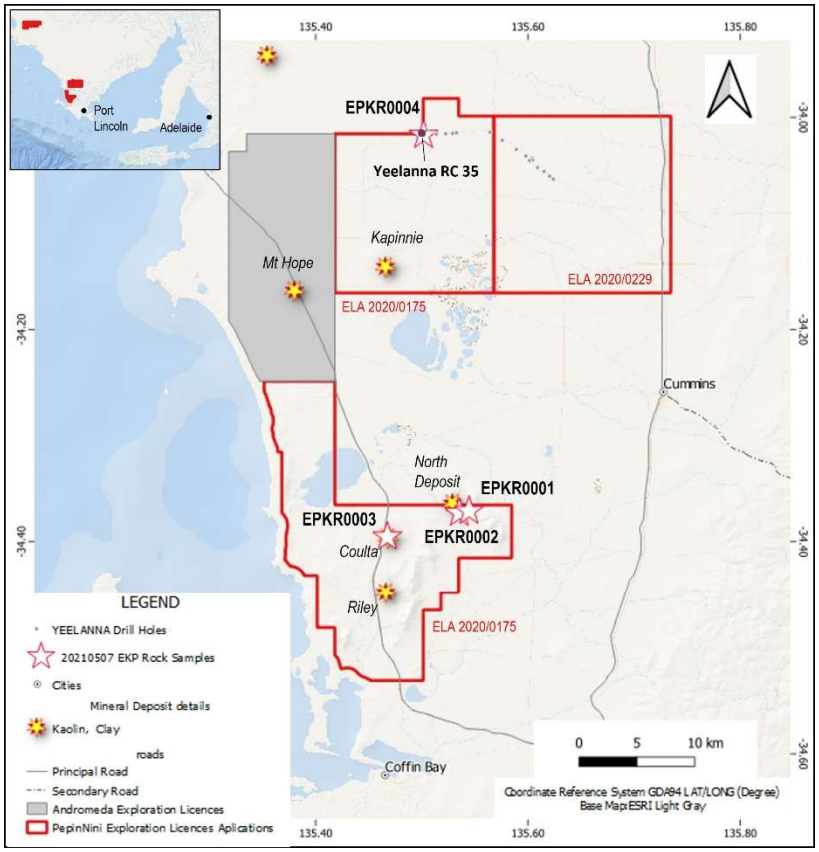

Figure 1 – Sample locations reconnaissance field visit May 2021

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The reconnaissance trip and preliminary sampling were carried out by PepinNini Exploration Manager Suziany Rocha de Souza and consultant industrial minerals expert Sue Border, as part of work underway by the company to prepare for exploration activities to commence as soon as the exploration licences are granted by the SA Department of Energy and Mines.

PepinNini Managing Director Rebecca Holland-Kennedy said that following this confirmation of the presence of kaolin at its Eyre Peninsula Kaolin Project, systematic reconnaissance drilling is the next step for the company at the project.

Table 1 Sample Location and Details

Sample number	Location X E	Location Y S	Sample details
EPKR0001	135.548752º	34.37686º	Grab sample from the road cutting near North Block Deposit - In situ sample – ELA 2020/175 southern block
EPKR0002	135.535384º	34.372771º	Road cutting grab sample not in-situ – ELA 2020/175 southern block
EPKR0003	135.467566º	34.395224º	Grab samples from outcrop – Coulta Quarry – ELA 2020/175 southern block
EPKR0004	135.501691º	34.016459º	Core sample from borehole Yeelanna 35 drilled by SA Dept of Mines & Energy located ELA2020/175 northern block

Samples 1 and 2 confirm the presence of a blanket of fine carbonate soil and calcrete which obscures the underlying geology over much of this ELA. Sample 3 from Coulta quarry is promising, showing the presence of kaolin in a surface sample; drilling will be required to give any indication of the quality of the kaolin in this deposit. Sample 4 is very encouraging, showing the presence of kaolinite and probable halloysite in probable palaeochannel sediments. This area will be a priority for follow up drilling.

Table 2 – XRF Mineral Analysis Results

Sample/Elemen	Fe_2O_3 %	SiO_2 %	Al_2O_3 %	CaO %	K_2O %	Mn %	Na_2O %	MgO %	P %	S %	TiO_2 %	Cl %	LOI %
+45um fraction													
EPKR0001	0.45	7.05	0.72	48.7	0.12	<0.01	0.08	1.12	0.004	0.111	0.05	<0.001	41.3
EPKR0002	0.31	3.7	0.58	49.6	0.14	<0.01	0.22	1.96	0.024	0.12	0.03	0.027	42.8
EPKR0003	0.33	74.53	16.5	0.69	1.3	<0.01	0.12	0.29	0.014	0.004	0.53	0.01	5.61
EPKR0004	0.8	82.62	9.05	0.11	6.31	<0.01	0.21	0.06	0.032	0.009	0.15	0.003	0.33
-45um fraction													
EPKR0001	0.76	3.12	0.91	50.1	0.11	0.02	0.1	1.13	0.008	0.124	0.05	0.004	0.76
EPKR0002	0.46	1.93	0.71	50	0.1	<0.01	0.14	1.37	0.025	0.116	0.04	0.023	0.46
EPKR0003	0.48	53.79	29.8	1.48	2.09	<0.01	0.14	0.39	0.022	0.003	0.76	0.02	0.48
EPKR0004	0.68	48.94	35.5	0.04	1.77	<0.01	0.08	0.03	0.009	0.005	0.48	0.003	0.68

Table 3 – XRD Quantitative Mineralogy by CSIRO

Sample /Mineral	Quartz	Kaolinite	Halloysite	Muscovite	Microcline	Anastase	Florencite	Calcite	Aragonite	Hinckley Index	Crystallite Size Halloysite (nm)	Crystallite Size Kaolinite (nm)
EPKR001	2	1						97		-	-	-
EPKR002	1							98	<1	-	-	-
EPKR003	10	66		20		1		4		0.91	25	75
EPKR004	8	55	8	12	16	1	<1			0.68	21	36

This announcement was authorised for issue by the Board of PepinNini Minerals Ltd

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Note: Additional information on PNN is available at www.pepinnini.com.au

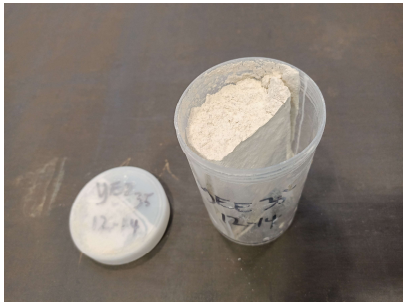
The information in this document that relates to analytical results from samples for the kaolin project has been reviewed by Sue Border, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Ms Sue Border is a Consultant with Geos Minerals Consultants and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Ms Sue Border consents to the inclusion in the announcement of the matters based on her information in the form and context in which it appears

JORC TABLE 1

JORC Code, 2012 Edition – Table 1 Eyre Peninsula Kaolin Project, South Australia

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• Three grab samples from road cutting and outcrop and an abandoned quarry site have been collected and submitted for X-RAY FLUORESCENCE(XRF) and X-RAY DIFFRACTION MINERAL IDENTIFICATION (XRD) ANALYSIS Sampling was designed to identify minerals present from accessible and public locations before exploration licence applications were granted. • One sample EPKR0004 was from Borehole Yeelanna RC 35 drilled by the SA Dept of Mines and Energy completed 4 June 1993 • Drilling was conducted with the Department's Investigator RC drillrig using NQ drillrod and watermist. Samples were collected every 2 metres until fresh basement was intersected. Drilling was then continued until either a piece of fresh core or adequate quantities of drillchips were collected. Samples were collected in plastic sample jars and stored in core trays • 
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• One sample from reverse circulation borehole, drilled by the Department's Investigator RC drill rig using NQ drill rods and watermist • core sample from core stored at SA Dept of Mines and Energy Core library at Tonsley, SA.

Criteria	JORC Code explanation	Commentary
		•
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Single core sample from stored core -sample from 12-14m depth stored in a sealed container.  •
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Core was logged in two metre intervals - Samples were collected every 2 metres until fresh basement was intersected. Drilling was then continued until either a piece of fresh core or adequate quantities of drillchips were collected. Samples were collected in plastic sample jars and stored in core trays
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Rock samples were received, weighed and the mass of each recorded. Samples were then crushed using a Jaw crusher to reduce sample size to p100 -10mm, Samples were then dried in an oven at low temperature, samples then weighed to determine moisture content by calculation. Samples separated into fractions based on size ie +5.6mm and -5.6mm. • For the -5.6mm samples a Rotary Sample Splitter was utilised. This comprises a mass flow hopper feeding through a variable outlet, to a vibrating feeder. The steady material flow passes to a divider head rotating at constant speed. sampling is done while the receiver system is rotating under the vibrating feeder at constant speed. • The test charge was then 'sized' into 3 size fractions using sieve sizes of 180um and 45um on a Kason Screen deck to obtain 3 x Size fractions at +180um, -180+45um and -45um
Quality of assay data and	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument*	• XRF analysis is carried out on the -45um product 'XRF' subsample to obtain results for Fe2O3, SiO2, Al2O3, CaO, K2O, Mn, Na2O, MgO, P, S, TiO2, Cl and LOI • X-RAY DIFFRACTION ANALYSIS DETAILS (was provided by CSIRO)

Criteria	JORC Code explanation	Commentary
laboratory tests	*make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Approximately 3g of each <45µm sample was ground for 10 minutes in a McCrone micronizing mill with approximately 15ml of deionized water for quantitative XRD analysis. The resulting slurries were transferred into a 20 ml glass jar, attached to a small compressed air driven spray paint device. The slurry was gently agitated whilst spraying the contents into a cylindrical chamber heated to 150°C with a thermocouple controlled belt heater, The spray dried samples were prepared for X-ray diffraction analysis by gently pouring the materials into stainless steel sample holders. The holders were lightly tapped on the bench to evenly distribute the spheres then the excess was scraped the off using the edge of a glass slide. • Quantitative analysis was performed on the XRD data using the commercial package TOPAS V6 from Bruker AXS. The results are normalised to 100%, and hence do not include estimates of unidentified or amorphous materials. • Estimates of the proportion of halloysite and kaolinite were determined using the profile fitting capabilities of TOPAS (TOtal Pattern Analysis Software) from Bruker AXS. Calibration of the technique was determined from a suite of 20, -2 µm fractions of samples from the same locality analysed by XRD, SEM and FTIR (CSIRO Divisional Report Number 129, Janik and Keeling, 1996).
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• CSIRO Samples - Sample N9680-1-1-1 EPKR004 showed minor (8.5%) possible halloysite by profile fitting, however, the crystallite size for halloysite (20.8nm) and kaolinite (36.3nm) may suggest the peaks fitted very fine kaolinite rather than halloysite. This sample also shows a low Hinckley Index (0.68) indicating a moderately disordered kaolinite.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Sample locations for samples EPKR0001 to 3 were collected using handheld GPS. • Grid system GDA94 with units in degree • For Sample EPKR0004 location Lat & Long Decimal degrees
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Sampling was not designed to constrain resources.

Criteria	JORC Code explanation	Commentary
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Rock samples were not taken from outcrop only not designed to verify or describe possible geological structures.
Sample security	• *The measures taken to ensure sample security.*	• Samples were delivered to Bureau Veritas Laboratory in Adelaide
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• None undertaken at this early stage.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• ELA 2020/175 – exploration licence application held by PepinNini Kaolin Pty Ltd, a wholly owned subsidiary of PepinNini Minerals Limited • ELA2020/00175 affects registered native title claim application, Nauo Native Title Claim • No known impediment to the granting of an Exploration Licence
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Previous exploration Dept of Mines & Energy Geological Survey South Australia, Yeelanna RC drillhole project Well Completion Report Book 93/44, by LR Rankin Nov 1993 DME 460/81
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Archaean/Proterozoic-aged Kiana Granite crops out extensively on southwestern Eyre Peninsula,and is well exposed in the southern portion of ELA2020/00175, where it is unconformably overlain by the Warrow Quartzite. At Mt Dutton and Mt Hope, the Kiana Granite contains enclaves of Coulta Granodiorite. • The northern tenement block of ELA2020/00175 is dominated by Cenozoic cover overlying in part interpreted Kiana Granite at shallow depth below surface • The southern tenement block of ELA2020/00175 is marked by extensive outcrop of Archaean Kiana Granite and Early Proterozoic

Criteria	JORC Code explanation	Commentary
		Warrow Quartzite • Weathering and alteration of granite to kaolin represents the target mineralisation

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		• Sample EPKR0004 from Borehole Yeelanna RC 35 drilled to TD of 24.8m
		• Collar – Lat -34.0179 Long 135.5003 – dip -90
		• Completed 4 Jun 1993.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Not applicable as no weighted averages, aggregates or metal equivalents have been used at this early stage of exploration.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Not applicable as no drilling has been undertaken nor has systematic channel sampling of surface workings been carried out.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Geological map with significant grab sample results provided.

Criteria	JORC Code explanation	Commentary
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• No exploration results are reported, results reported relate to analysis of grab samples and one core sample from drilling carried out by SA Dep of Mines & Energy in 1993.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• A preliminary interpretation of kaolinised alteration from hyperspectral analysis of Aster satellite data and hand samples, as well as from geochemical analyses, has been undertaken.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• Exploratory shallow RC drilling is planned to examine surface mineralisation when ELA is granted .