

## 17 September 2014

## **ASX Announcement**

## **Further Radiometric Anomalism intersected at Mintaka Prospect**

- Nine RC Percussion drill completed at the Mintaka Prospect on the Tin Camp Creek Project
- ➤ Radiometric anomalism detected in six drillholes at Mintaka, coincident with SAM/MMR anomalies.
- Strongly anomalous radiometric responses detected in drillholes OBR14-120 and OBR14-122.
- > Drilling to recommence in late September.

Alligator Energy Ltd (AGE) are pleased to provide a further update on exploration activities at the Tin Camp Creek and Mamadawerre Projects in the Northern Territory.

#### TIN CAMP CREEK PROJECT

Planned drilling has been completed on the Mintaka prospect, the third of five prospect targets to be drill tested in 2014. Nine RC Percussion drill holes have been completed in the Mintaka Prospect area for a total of 1538 metres. In total, 24 drill holes have been completed in 2014 on the Tin Camp Creek Project for a total of 4276 meters.

Radiometric anomalism has been detected in 6 of the Mintaka drill holes. Strong radiometric responses were intersected in drill holes OBR14-120 (maximum 9250 counts per second from 38-39 metres) and OBR14-122 (maximum 3910 counts per second from 86-87 metres). Anomalism is closely associated with the peak of SAM/MMR anomalies. Detailed field radiometric screening results are provided in Table 2. Laboratory assay results are expected in the first week of October.

Radiometric anomalism is primarily associated with strongly chlorite altered dolerite. Drilling has defined a NW trending and SE dipping zone of alteration and radiometric anomalism. Radiometric anomalism was detected in strongly altered

Cahill formation lithologies underlying the dolerite in OBR14-122 indicating that the zone of

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**ASX Code: AGE** 

#### Number of Shares:

304M Ordinary Shares 12.0M Unlisted Options

#### **Board of Directors:**

Mr John Main (Chairman)

Mr Robert Sowerby (CEO, Director)

Mr Paul Dickson (Non Exec. Director)

Mr Peter McIntyre (Non Exec. Director)

Mr Andrew Vigar (Non Exec. Director)



alteration and radiometric anomalism may extend into prospective basement lithologies to the NE of current drilling.

Recent modelling of the electromagnetic response (TFEM) from SAM/MMR data indicates a northerly dip of conductive bodies, consistent with the results of drilling to date. A prominent TFEM anomaly has been defined to the immediate NE of Mintaka. This anomaly is consistent with the interpretation of a NE dipping mineralised structure extending into the prospective Cahill Formation basement.

This area is considered a prospective target for further drilling following completion of the remaining phase 1 priority targets.

### Sampling and Field Screening

RC chip samples were obtained at one metre intervals on each hole and scintillometer readings taken of each drill sample using a RS-125 Spectrometer. Field screening results are provided as a guide only and are subject to sample variability and the sensitivity of the instrument. Uranium grades cannot be assumed from field screening and results are therefore provided as raw counts per second (cps) data. Anomalous samples have been submitted for laboratory analysis and assay results for the NE Myra drilling are expected by late-September. Drill hole locations are provided on Figure 1 and a summary of all drill hole radiometric screening results is provided in Table 1. Drill hole survey information is provided in Table 2.

### **Current Exploration Activities**

Drilling activities have been paused until **28 September** to allow for refinement of geophysical drill targets and to establish access to remaining drill pads. This two week pause will also allow for a focused field program to be completed on the Mamdawerre Project area.

Drilling is planned to re-commence on the Orion South target area.

#### **MAMADAWERRE PROJECT**

A two week heli-supported reconnaissance surface sampling and auger sampling survey has commenced on the Mamadawerre Project area, including both EL24992 (Cameco JV) and EL27251(100% AGE). In excess of 40 radiometric anomalies identified by previous airborne geophysical surveys, will be assessed and sampled over the coming weeks.



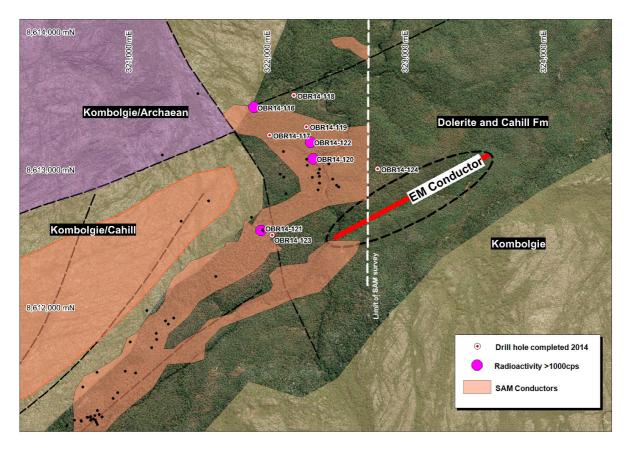


Figure 1: Location map showing completed drilling at Mintaka and holes with >1000cps measured radioactivity



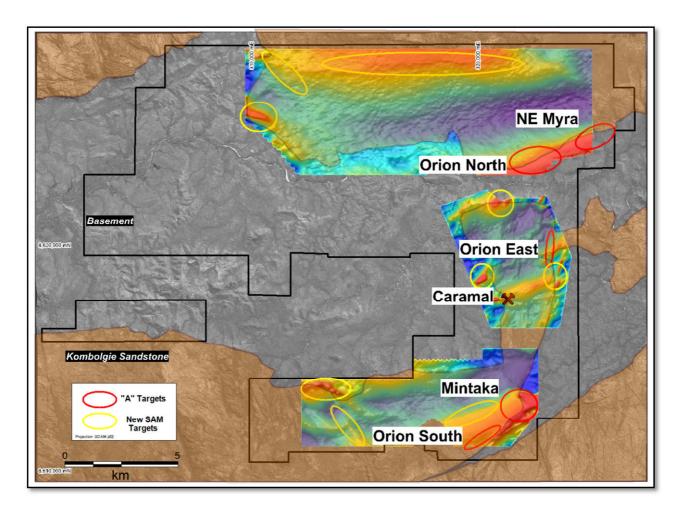


Figure 2: Tin Camp Creek Project - Prospect Location on SAM/MMR image.



Table 1: Field radiometric screening results

Drill Hole	Depth	Depth to	Counts per
Dillitiole	From	(m)	second
	(m)	(,	(CPS)
OBR14-116	0	48	<300
021121 220	48	49	2000
	49	50	1000
	50	51	<300
	51	53	860
	53	54	550
	54	55	650
	55	84	<300
	84	85	460
	85	175	<300
OBR14-117	0	35	<300
	35	36	600
	36	37	300
	37	67	<300
	67	68	360
	68	69	600
	69	70	300
	70	162	<300
OBR14-118	0	175	<300
OBR14-119	0	172	<300
OBR14-120	0	6	<300
	6	7	310
	7	8	320
	8	9	455
	9	10	330
	10	11	458
	11	31	<300
	31	32	345
	32	33	920
	33	34	<300
	34	35	330
	35	36	640
	36	37	790
	37	38	1075
	38	39	9250
	39	40	2950
	40	41	730
	41	42	3605
	42	43	3450
	43	44	1495
	44	45	655
	45	46	1125
	46	47	1350
	47	48	650



	1	1	1
	48	49	455
	49	50	425
	50	51	460
	51	52	700
	52	53	890
	53	54	955
	54	55	1566
	55	56	1500
	56	57	1075
	57	58	765
	58	59	849
	59	60	585
	60	74	<300
	74	75	475
	75	76	660
	76	77	560
	77	175	<300
OBR14-121	0	71	<300
	71	72	850
	72	73	560
	73	74	600
	74	75	730
	75	79	<300
	79	80	465
	80	81	570
	81	82	380
	82	83	660
	83	84	1160
	84	85	800
	85	86	670
	86	87	1090
	87	88	850
	88	89	770
	89	90	690
	90	91	380
	91	92	440
	92	93	500
	93	94	600
	94	95	470
	95	150	<300
OBR14-122	0	63	<300
	63	64	560
	64	65	450
	65	66	590
	66	67	390
	67	68	440
	68	69	1045
	69	70	1430
	70	71	1220
	71	72	460



		Γ	
	72	77	<300
	77	78	470
	78	79	500
	79	80	515
	80	81	910
	81	82	470
	82	83	730
	83	85	<300
	85	86	420
	86	87	3910
	87	88	990
	88	89	930
	89	90	470
	90	95	<300
	95	96	525
	96	97	475
	97	98	2350
	98	99	890
	99	100	1110
	100	101	2375
	101	102	590
	102	103	415
		103	
	103 108	109	<300 470
	109	110	670
	110	111	680
	111	159	<300
	159	160	440
	160	161	360
	161	162	520
	162	163	320
	163	164	<300
	164	165	840
	165	166	1370
	166	167	305
	167	175	<300
OBR14-123	0	175	<300
OBR14-124	0	59	<300
	59	60	535
	60	171	<300
	171	172	345
	172	173	380
	173	174	410
	174	175	380
			2.40
	175	176	340



Table 2: Drill hole survey details

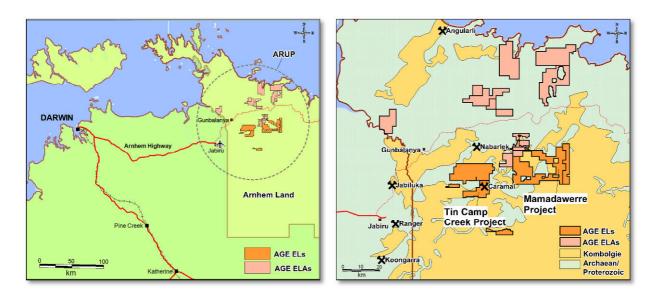
Hole ID	Prospect	MGA East (actual)	MGA North (actual)	Azim (Mag)	Dip	Depth (Final)
OBR14-116	Mintaka	321915	8613445	335	-70	175
OBR14-117	Mintaka	322030	8613244	335	-75	162
OBR14-118	Mintaka	322204	8613530	335	-75	174
OBR14-119	Mintaka	322296	8613304	335	-75	172
OBR14-120	Mintaka	322343	8613069	340	-75	175
OBR14-121	Mintaka	321968	8612550	290	-75	150
OBR14-122	Mintaka	322326	8613193	160	-60	175
OBR14-123	Mintaka	322048	8612517	290	-60	175
OBR14-124	Mintaka	322810	8612996	153	-60	180

#### **About Alligator Energy**

Alligator Energy Ltd is an Australian, ASX listed, exploration company with uranium exploration tenements in the world class Alligator Rivers Uranium Province in Arnhem Land, Northern Territory. The Alligator Rivers Uranium Province hosts nearly 1 billion pounds of high grade uranium resources and past production, including the Ranger Mine and Jabiluka. The company's flagship project is the Tin Camp Creek Project. Since listing in February 2011, the company has completed in excess of 15,000m of drilling, defined a maiden high grade, JORC compliant resource at Caramal (6.5Mlb U308 at 3100ppm U308) and discovered new mineralization at Mintaka and Orion East. High Grade mineralization also occurs at the historic South Horn and Gorrunghar prospect which remain only partially tested.

The company has in excess of 1000km<sup>2</sup> of Exploration Licence applications and is also in Joint Venture with Cameco Australia Pty Ltd for the Mamadawerre Project, also within the Alligator Rivers Uranium Province





**Project Location Diagrams** 

## FOR FURTHER INFORMATION, PLEASE CONTACT

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# **Appendix 1- JORC Code, 2012 Edition**

# Tin Camp Creek Project - Drilling update - September 2014.

# **Section 1 Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	A total of 1,538 samples (1,538 Reverse Circulation (RC) Spear samples) of 1 metre interval drill samples were obtained during the reported phase of work.  RC samples were collected in 1 metre intervals from bulk riffle split samples collected in plastic bags at the cyclone. A 3kg sample was subsequently obtained for assay from the riffle split sample by spear sampling.  The samples obtained are considered to be representative of the intervals from which they were obtained and sampling and sub-sampling techniques were appropriate for the sample type and for exploration purposes  A Radiation Solutions RS-125 spectrometer was used to measure radioactivity (in counts per second – cps) of each bulk 1m sample. Samples are selected for laboratory based geological observation and radioactivity (cps) relative to background.
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, facesampling bit or other type, whether core is oriented and if so, by what method, etc).	Drilling was undertaken using Reverse Circulation drilling with face sampling bit. The distribution of drilling for these results was 1,538 metres RC
Drill sample recovery	Method of recording and assessing core and chip sample recoveries	The project geologist remains at the rig during RC drilling activities, with logging occurring as drilled. RC Samples

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	<ul> <li>and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	were collected from the cyclone via a riffle splitter and transferred directly to a plastic sample bag for each 1 metre interval. For exploration drilling sample recovery quality is monitored visually by the geologist by volume of returned sample. Sample recovery is maximised during RC drilling by use of face sampling hammers. Sample recoveries were considered to be excellent and no significant sample bias is considered to have occurred.
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	All chip samples are logged systematically recording lithology, alteration and mineralization. Drilling was undertaken for exploratory purposes; however logging has been undertaken to a level sufficient to support future Mineral Resource estimation, mining studies and metallurgical studies.  Lithological logging is qualitative, geotechnical logging of drill core has been undertaken quantitatively  All (100%) drill intervals have been logged.
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	RC samples were collected in 1 metre intervals from riffle split drill cuttings collected at the cyclone. A 3kg sample was subsequently obtained for assay from the riffle split sample by spear sampling.  The samples obtained are considered to be representative of the intervals from which they were obtained and sampling and sub-sampling techniques were appropriate for the sample type and for exploration purposes  Field Blanks, duplicates and laboratory prepared standards are inserted into the sampling sequence. For exploration drilling, Blanks and standards are inserted whenever uranium mineralization is encountered as follows:  Blank sample of unmineralised material (immediately following a mineralised sample) 1 in each hole intersecting a mineralized zone  Mineralized zone.  Certified standard for each drill hole intersection of a mineralized zone.  Certified standard for each drill hole intersecting a mineralized zone.  Sampling of barren material either side of mineralised zones.  RC samples were submitted for analyses to Bureau Veritas' Laboratory in Darwin. Further sample preparation was undertaken by Bureau Veritas prior to assay. Drill samples were dried to a core temperature of approximately 100°C. Dried samples are then coarse crushed using a Boyd crusher to a sizing of approximately 5mm. The total sample is then milled in an LM5 pulveriser to 85% passing



		75µm. An analytical pulp of 250 g is taken from the bulk and the residue retained. The pulp sample is then delivered to Bureau Veritas' laboratory in Adelaide.
		Sample sizes were considered appropriate for the type of material being sampled.
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>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.</li> </ul>	A Radiation Solutions RS-125 spectrometer was used to measure radioactivity (in counts per second – cps) of each bulk 1m sample. Samples are selected for laboratory assay based geological observation and radioactivity (cps) relative to background.  Geochemical assay of representative samples is being undertaken at Bureau Veritas' Adelaide laboratory. Uranium analysis was undertaken utilising ICP-MS using Lithium Borate fusion of the pulp sample. This technique is considered a total analysis method and appropriate for the style of mineralisation intersected.  Field Standards, blanks and duplicates were included in the samples submitted to the laboratory; in addition Bureau Veritas also include quality control samples routinely to monitor the precision and accuracy of analysis. Acceptable levels of accuracy have been established.
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	Intersections reported for this phase of drilling have not been verified by an external party to date.  No twinning of holes has been undertaken  Logging, sampling and assay data is recorded and maintained digitally. Physical sample duplicates and core trays are maintained on site.  No adjustment of assay data is undertaken
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	Current drill hole locations were surveyed using GPS with accuracies of between 1-4 metres  All drill holes have been surveyed on Map Grid of Australia 94 (MGA94 Zone 53)  A digital Terrain model (DTM) derived from previous airborne geophysical surveys is used for topographic control. Vertical resolution for the DTM is considered to be within 1 metre.
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and</li> </ul>	Drilling during this phase of work has been broad spaced for exploratory purposes to test new structural targets and until significant mineralisation is identified is insufficient to



	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.	define mineral resources.  Sample compositing has not been applied.
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	Current drilling is of an exploratory nature. There is generally insufficient data in the areas drilled during this phase of work to determine the orientation of host structures.  No known sampling bias is known to have been introduced by the drilling orientation.
Sample security	The measures taken to ensure sample security.	Samples, each contained in zip tied, plastic sample bags were delivered by Alligator personnel in sealed 200 litre drums directly to the Bureau Veritas Laboratory in Darwin with Chain of Custody documentation
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits have been undertaken for this phase of drilling

# **Section 2 Reporting of Exploration Results**

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>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.</li> <li>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.</li> </ul>	All drilling reported in this ASX release was undertaken on the Tin Camp Creek Project which is comprised of contiguous exploration licences EL24921 and EL24922 in the Northern Territory. The tenement is held by TCC Project Pty Ltd (98%), a wholly owned subsidiary of Alligator Energy Ltd (Alligator) and by West Arnhem Corporation Pty Ltd (2%). The tenements were recently renewed by the Northern Territory Department of Mines and Energy for a further 2 year period (until May 2015 whereby AGE may apply for additional 2 year renewal periods) and are in good standing. Exploration and Mining agreements with the Northern Land Council (NLC) on behalf of traditional owners are in place for these tenements in accordance with the Aboriginal Land Rights Act (1976).  The Tin Camp Creek Project is also subject to a uranium buy back agreement with Cameco Australia Pty Ltd whereby Cameco may buy 51% of a defined resource greater than 20,000t contained U3O8.  There are no known existing impediments to operating on

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		any tenement within the Tin Camp Creek Project area.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Regional exploration has previously been undertaken by other parties in the region by Queensland Mines Ltd (1970-1972), Afmeco (1996-2001) and Cameco Australia Pty Ltd (2001-2010).
Geology	Deposit type, geological setting and style of mineralisation.	Alligator is exploring for Unconformity Associated Style Uranium Deposits. The geology of the area being targeted is comprised primarily of Carpentarian aged sandstones of the Kombolgie Formation overlying multiply deformed meta-sediments of the lower-Proterozoic Cahill Fm and Archaean granite Gneiss Complexes.
Drill hole Information	<ul> <li>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:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	Drill hole survey information is provided in the Table 3 of the ASX release Collar positions were located by GPS with accuracies of 1-4metres. This accuracy is considered sufficient for exploration purposes and for the style of mineralisation targeted.
Data aggregation methods	<ul> <li>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.</li> <li>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.</li> <li>The assumptions used for any</li> </ul>	Radioactivity intercepts in cps as reported in Table 1 and 2 of ASX release were aggregated as follows:  Where radioactivity exceed 300cps cut-off samples are reported individually.  Where radioactivity <300cps intervals are grouped but not averaged.



	reporting of metal equivalent values should be clearly stated.	
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	The relationship between intercept lengths and mineralisation widths is uncertain for results reported in this release as the drilling is targeting new areas and the structural relationships of mineralisation have been shown to be complex in the broader region. Consequently, results are reported as drilled intercept lengths.
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.	Refer Figures 1 and Tables 1, 2 and 3 of ASX release.
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.	All results of significance have been reported within this report.  It is important to note that the field screening results reported are provided as a guide only and are subject to sample variability and the sensitivity of the instrument.
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.	No significant exploration data has been omitted
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	A number of targets have been identified on the Tin Camp Creek Project area. The drilling reported on in this release is the first part of what Alligator intends to be a systematic test of these targets. Further advice on this ongoing work will be provided following further assessment and ranking of these targets in the coming months.



## **Competent Persons Statement**

Information in this report is based on current and historic Exploration Results compiled by Mr Rob Sowerby who is a Member of the Australasian Institute of Geoscientists. Mr Sowerby is CEO and Director of Alligator Energy Ltd, and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking 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. Mr Sowerby consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.