ASX ANNOUNCEMENT

MIRAMAR RESOURCES LTD.

SHALLOW REE MINERALISATION DISCOVERED AT LANG WELL PROJECT

- **Reconnaissance aircore drilling intersects extensive shallow REE mineralisation beneath two separate historic auger anomalies**
- **A significant area remains untested with follow-up aircore drilling planned**

Miramar Resources Limited (ASX:M2R, "Miramar" or "the Company") is pleased to announce the discovery of shallow rare earth element (REE) mineralisation at the Company's 100%-owned Lang Well Project in the Murchison region of WA ("Lang Well" or "the Project").

Reconnaissance aircore drilling beneath two historical auger anomalies has intersected shallow REE mineralisation in several holes over a significant lateral extent.

Miramar Resources Executive Chairman, Mr Allan Kelly, said the drilling confirmed the existence of REE mineralisation at Lang Well and had tested a tiny portion of the extensive auger anomalism at the Project.

> *"Each of the historic auger anomalies stretches over several kilometres, with some of the best new aircore results at the southern end of the previously untested Boundary Bore target," he said.*
>
> *"Given the very large spatial extent of the historic auger anomalism, there is potential for a significant amount of shallow REE mineralisation to be outlined at Lang Well," he added.*

The initial reconnaissance aircore programme tested beneath historic samarium and gold auger anomalies at the Toben Bore and Boundary Bore targets with a single line of 100m-spaced aircore holes drilled across each target utilising existing station tracks and fence lines (Figure 1).

At Toben Bore, the REE mineralisation extends over a horizontal distance of approximately 400m whilst, at Boundary Bore, the REE mineralisation is at least 200m wide and open to the south (Figures 2 and 3).

Results as high as **4m @ 930ppm TREO** and **8m @ 765ppm TREO** have been obtained from this initial programme however it should be noted that the samples were assayed using an aqua-regia digest which under-reports the total REE content when compared with a stronger 4-acid digest or Lithium Borate fusion.

When compared with the historical sample from Toben Bore, which returned **4m @ 1500ppm TREO**, it appears the aqua-regia digest may under-report the actual TREO results by as much as 30 to 40%.

All samples reporting over 500ppm TREO have therefore been resubmitted for priority analysis using the Lithium Borate Fusion technique.

Significant aqua-regia results from the initial aircore programme include:

- **LWAC002 – 4m @ 930ppm TREO from 20m (incl. 145ppm Nd_2O_3)**
- **LWAC011 – 4m @ 671ppm TREO from 24m**
- **LWAC013 – 12m @ 533ppm TREO from 16m**
- **LWAC015 - 4m @ 697ppm TREO from 24m**
- **LWAC016 – 4m @ 830ppm TREO from 16m**
- **LWAC017 - 8m @ 765ppm TREO from 8m**
- **LWAC022 – 4m @ 646ppm TREO from 12m**

Follow-up aircore drilling has been planned to further test the extensive historic auger anomalism, including on the adjacent tenement application once granted.

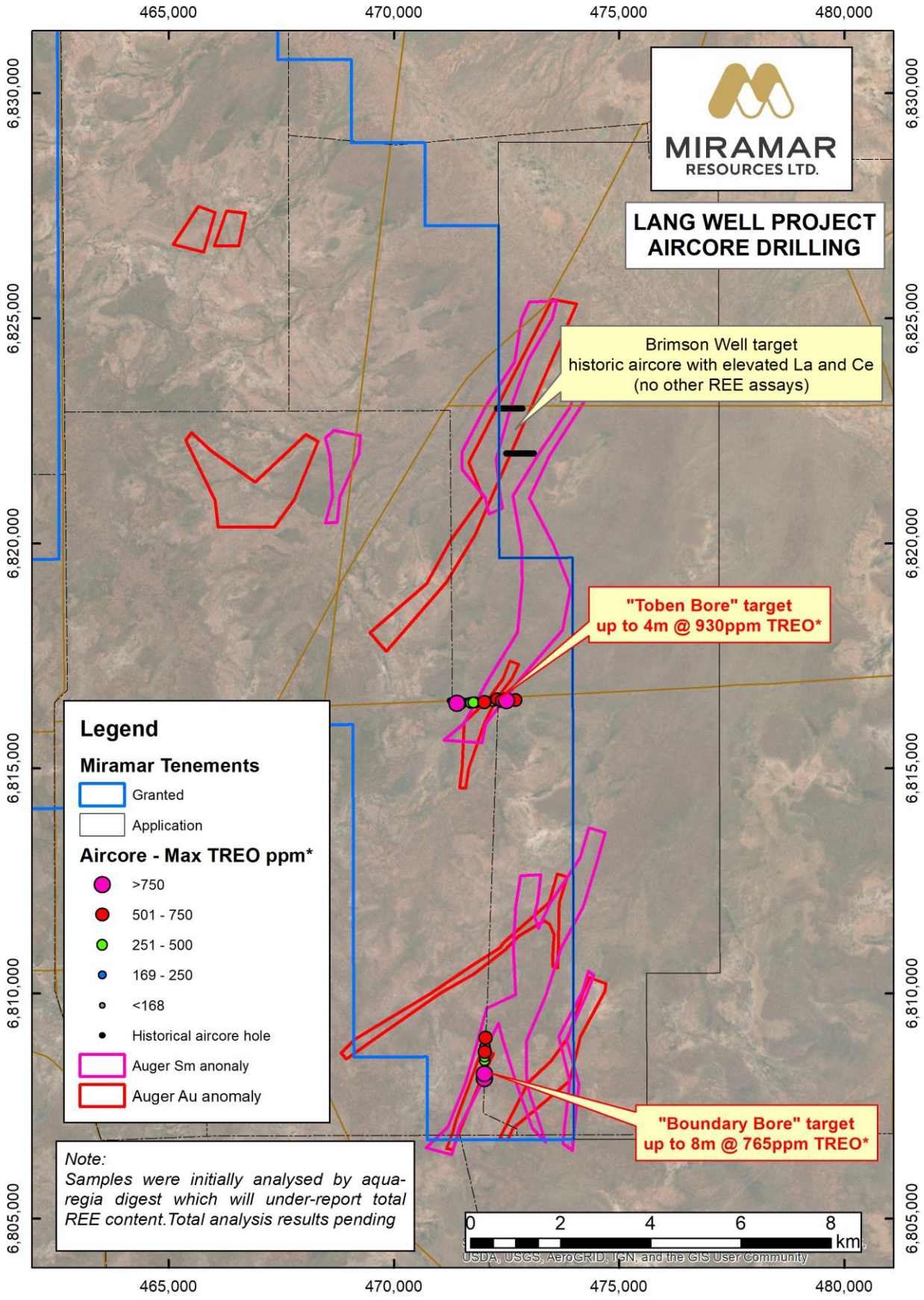

Figure 1. *Lang Well Project showing aircore results in relation to historic auger anomalism.*

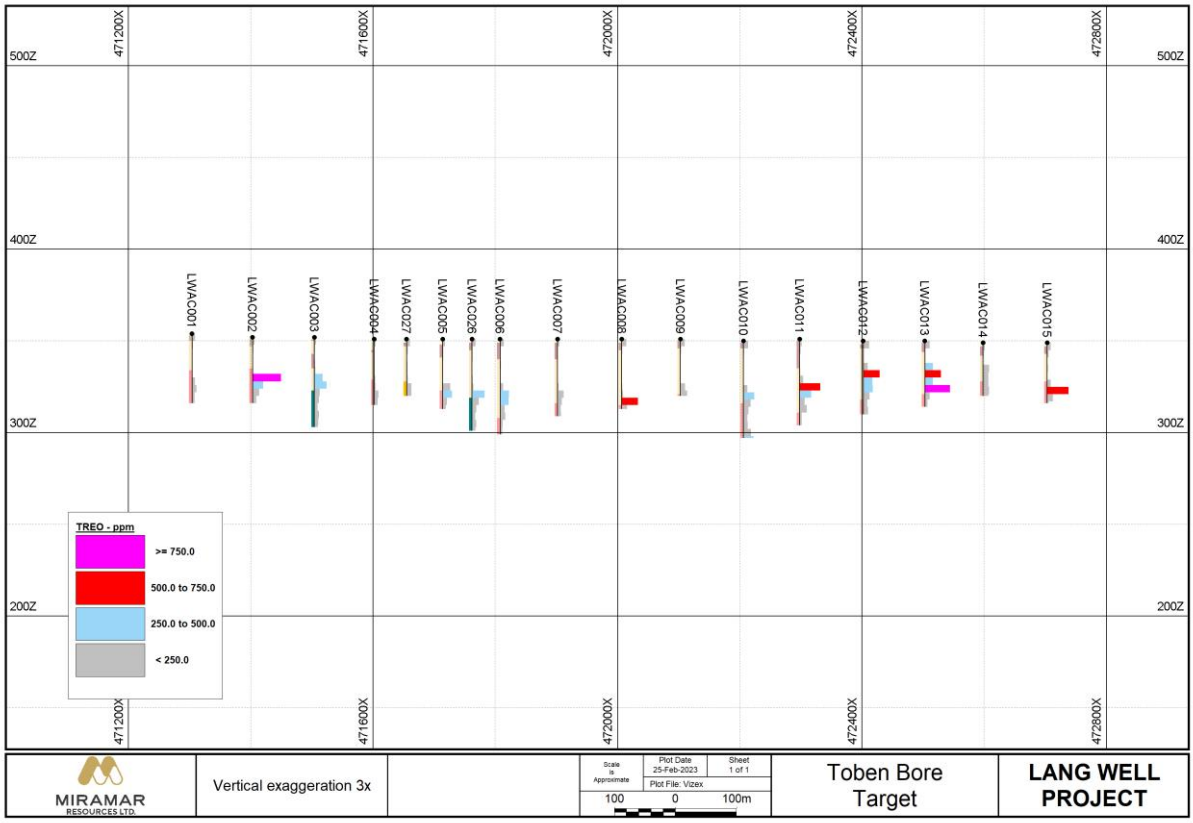

Figure 2. *Toben Bore cross section, looking north (see Table 2 for assay results).*

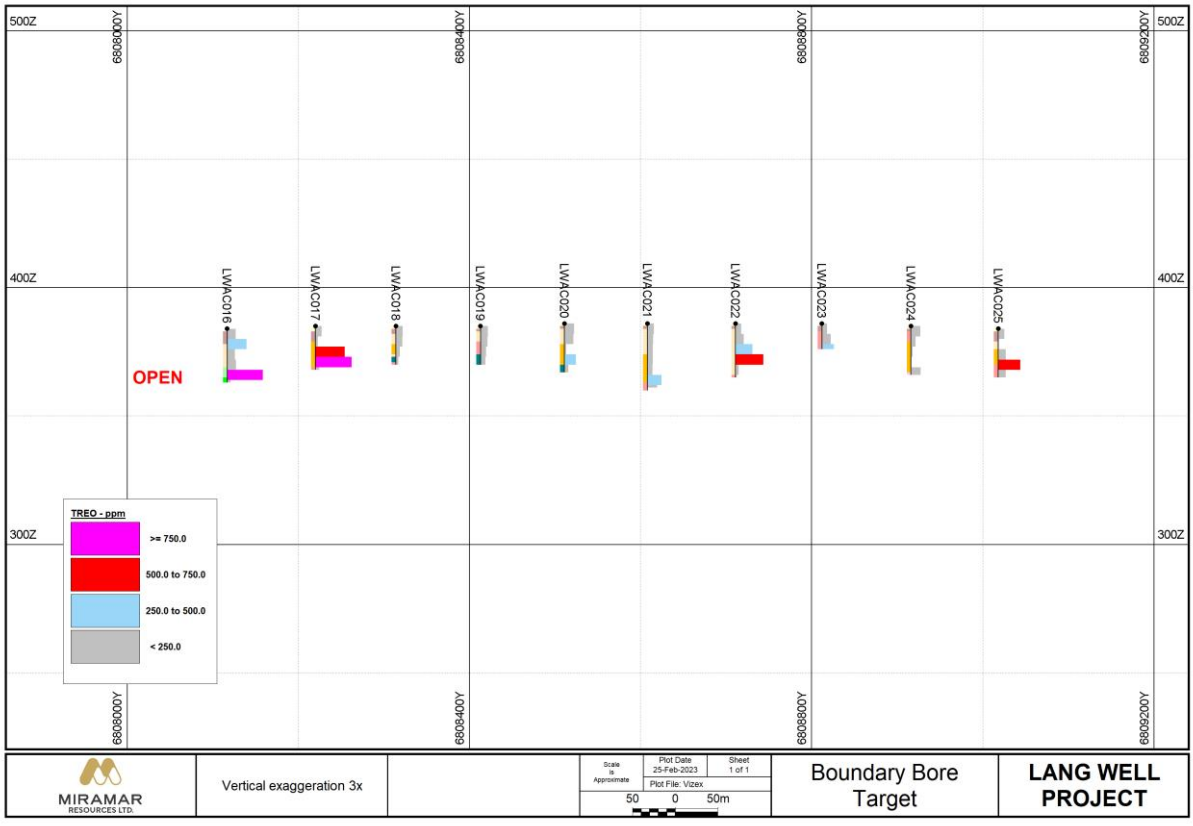

Figure 3. *Boundary Bore cross section, looking west (see Table 2 for assay results).*

Table 1. Lang Well drill hole information

Hole ID	MGA_E	MGA_N	RL	EOH Depth
LWAC001	471304	6816447	354	38
LWAC002	471403	6816450	352	36
LWAC003	471504	6816457	352	49
LWAC004	471602	6816461	351	36
LWAC005	471714	6816464	351	38
LWAC006	471808	6816472	351	52
LWAC007	471902	6816475	351	42
LWAC008	472007	6816481	351	38
LWAC009	472103	6816495	351	31
LWAC010	472206	6816495	350	53
LWAC011	472298	6816534	351	47
LWAC012	472402	6816506	350	40
LWAC013	472503	6816510	350	36
LWAC014	472598	6816515	349	29
LWAC015	472703	6816520	349	33
LWAC016	472007	6808117	384	21
LWAC017	472008	6808220	385	17
LWAC018	472015	6808314	385	15
LWAC019	472020	6808413	385	15
LWAC020	472018	6808511	386	19
LWAC021	472021	6808608	386	26
LWAC022	472023	6808711	386	21
LWAC023	472031	6808812	386	10
LWAC024	472032	6808916	385	19
LWAC025	472034	6809018	384	19
LWAC026	471762	6816473	351	50
LWAC027	471655	6816469	351	31

Notes:

- All holes drilled vertically to “blade refusal”
- Collar coordinates given with reference to MGA zone 50S
- Collar RL’s from handheld GPS

For more information on Miramar Resources Limited, visit the Company’s website at www.miramarresources.com.au, follow the Company on social media (Twitter @MiramarRes and LinkedIn @Miramar Resources Ltd) or contact:

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This announcement has been authorised for release by Mr Allan Kelly, Executive Chairman, on behalf of the Board of Miramar Resources Limited.

COMPETENT PERSON STATEMENT

The information in this report that relates to Exploration Targets or Exploration Results is based on information compiled by Allan Kelly, a "Competent Person" who is a Member of The Australian Institute of Geoscientists. Mr Kelly is the Executive Chairman of Miramar Resources Ltd. He is a full-time employee of Miramar Resources Ltd and holds shares and options in the company.

Mr Kelly has sufficient experience that is relevant to the style of mineralisation and type of deposits 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'.

Mr Kelly consents to the inclusion in this Announcement of the matters based on his information and in the form and context in which it appears.

Historical exploration results for the Lang Well Project, including JORC Table 1 and 2 information, is included in the Miramar Prospectus dated 4 September 2020.

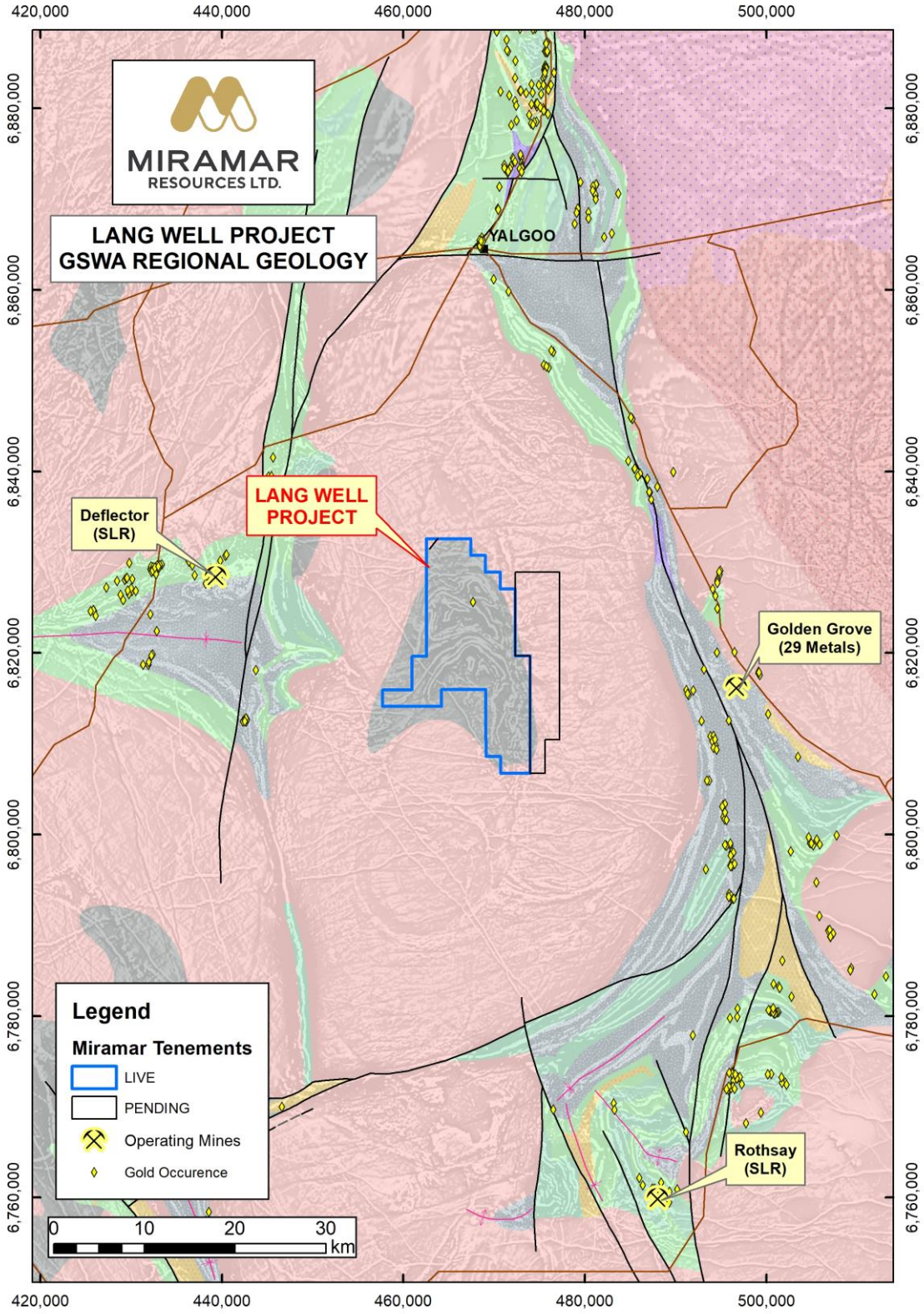
Recent exploration results for Lang Well, including JORC Table 1 and 2 information, is included in the following ASX Releases:

- 31 January 2023 – "*Drilling Underway at Lang Well REE Target*"
- 20 September 2022 – *"Large REE Targets Identified at Lang Well Project"*
- 17 June 2022 – "*Lang Well Project - Exploration Update"*
- 21 April 2022 – *"Detailed Magnetic Survey Underway at Lang Well"*
- 5 April 2022 – *"Multiple Pegmatites & REE Potential Identified at Lang Well"*

About the Lang Well Project

The Lang Well Project is located in the Murchison region of Western Australia, roughly halfway between the Deflector and Golden Grove mining operations.

The Project consists of one granted and one pending Exploration Licence, covering 291 square km, and is considered prospective for gold and/or REE mineralisation.



About Miramar Resources Limited

Miramar Resources Limited is an active, WA-focused mineral exploration company exploring for gold, IOCG, Ni-Cu-PGE and REE deposits in the Eastern Goldfields, Murchison and Gascoyne regions of WA.

Miramar's Board has a track record of discovery, development and production within Australia, Africa, and North America, and aims to create shareholder value through discovery of high-quality mineral deposits.

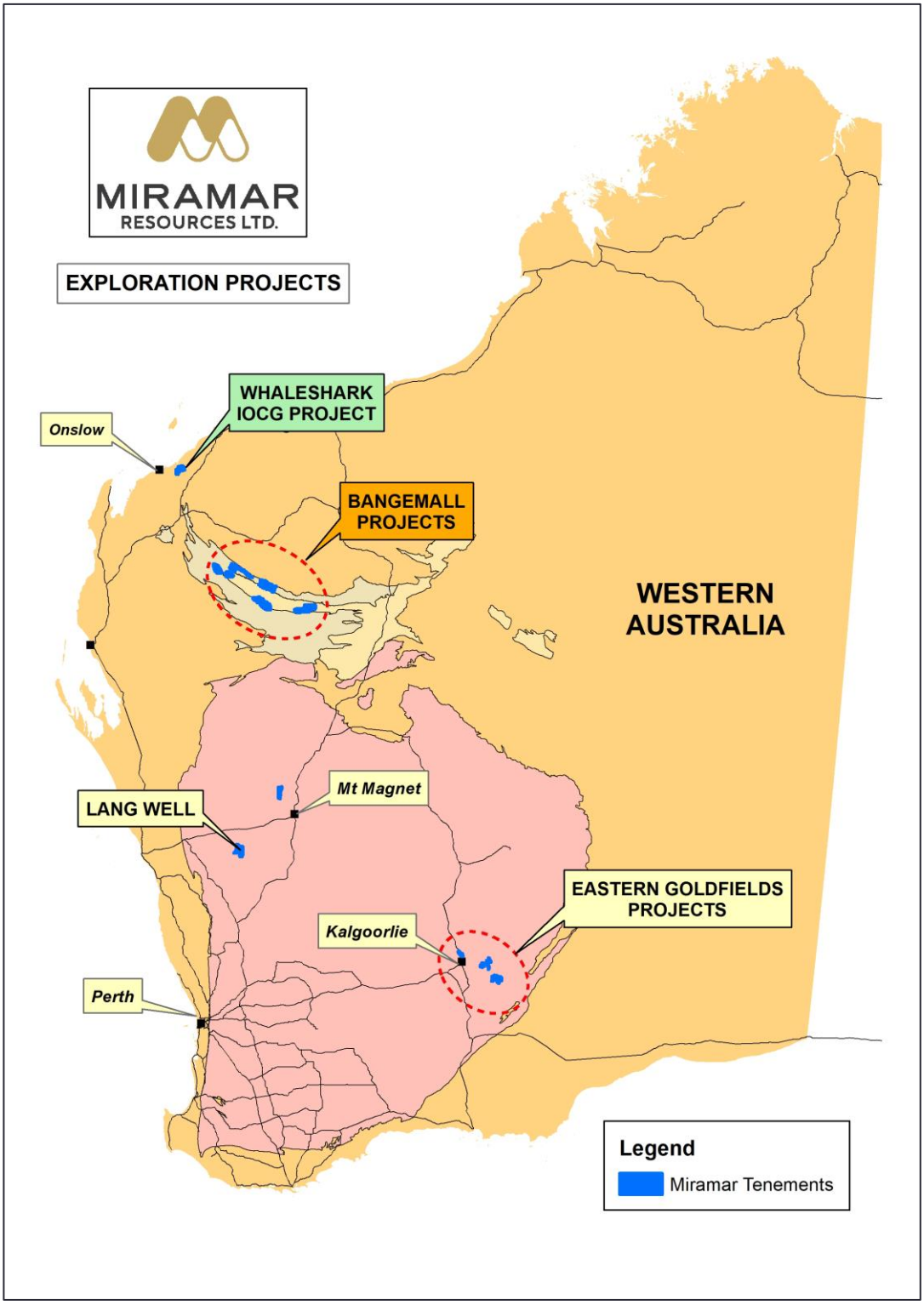


Table 2. REE Results for Lang Well aircore drilling

Hole ID	From	To	La2O3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Y2O3	Sc2O3	TREO
LWAC001	0	4	19.72	37.41	4.50	15.96	2.80	0.61	2.32	0.33	1.82	0.34	0.89	0.13	0.74	0.11	9.36	12.42	**97**
LWAC001	4	8	5.54	9.88	1.07	3.63	0.63	0.14	0.59	0.09	0.51	0.10	0.28	0.04	0.25	0.04	3.40	6.90	**26**
LWAC001	8	12	1.49	3.13	0.31	1.12	0.16	0.04	0.16	0.02	0.14	0.02	0.06	0.01	0.05	0.01	0.66	10.89	**7**
LWAC001	12	16	0.76	1.79	0.19	0.59	0.13	0.03	0.09	0.02	0.09	0.02	0.05	-0.01	0.04	-0.01	0.30	13.80	**4**
LWAC001	16	20	1.85	4.98	0.56	1.93	0.39	0.10	0.31	0.05	0.28	0.05	0.13	0.02	0.13	0.02	0.89	18.41	**12**
LWAC001	20	24	1.45	1.82	0.29	0.86	0.14	0.03	0.08	0.01	0.06	0.01	0.03	-0.01	0.03	-0.01	0.29	3.22	**5**
LWAC001	24	28	29.48	42.58	4.80	15.38	2.17	0.52	1.37	0.17	0.74	0.12	0.28	0.04	0.20	0.02	2.97	2.15	**101**
LWAC001	28	32	34.64	69.42	5.97	19.26	2.97	0.69	1.89	0.24	1.14	0.19	0.45	0.06	0.35	0.04	5.03	3.22	**142**
LWAC001	32	36	21.15	38.39	3.76	12.99	2.23	0.50	1.71	0.22	1.04	0.18	0.49	0.07	0.37	0.06	5.83	3.83	**89**
LWAC001	36	38	20.30	36.58	3.42	11.63	1.75	0.44	1.24	0.15	0.72	0.13	0.33	0.04	0.22	0.03	4.51	2.45	**81**
LWAC002	0	4	13.02	28.11	2.71	9.64	1.71	0.39	1.44	0.22	1.25	0.24	0.62	0.09	0.56	0.09	6.35	11.81	**66**
LWAC002	4	8	6.12	6.01	1.09	3.84	0.58	0.15	0.50	0.07	0.42	0.09	0.24	0.03	0.21	0.03	2.95	7.82	**22**
LWAC002	8	12	2.62	6.54	0.49	1.76	0.30	0.08	0.21	0.03	0.18	0.03	0.08	0.01	0.09	0.01	0.71	32.21	**13**
LWAC002	12	16	0.87	2.47	0.22	0.79	0.16	0.04	0.12	0.02	0.10	0.02	0.05	0.01	0.06	0.01	0.30	19.17	**5**
LWAC002	16	20	0.57	2.83	0.15	0.52	0.11	0.04	0.10	0.02	0.11	0.02	0.06	0.01	0.05	-0.01	0.44	4.91	**5**
LWAC002	20	24	239.08	431.07	46.59	145.82	21.87	6.16	11.96	1.41	6.03	0.82	1.60	0.18	0.86	0.10	16.14	4.60	**930**
LWAC002	24	28	83.64	173.95	13.66	47.83	7.78	2.26	5.31	0.66	3.12	0.47	1.06	0.13	0.72	0.09	10.27	3.53	**351**
LWAC002	28	32	54.84	93.12	8.71	29.81	4.74	1.22	3.58	0.45	2.29	0.40	0.97	0.13	0.73	0.10	10.63	2.30	**212**
LWAC002	32	36	31.75	52.85	4.97	16.86	2.46	0.56	1.74	0.21	1.02	0.19	0.49	0.06	0.36	0.05	6.02	2.76	**120**
LWAC003	0	4	12.59	27.92	2.58	8.87	1.60	0.38	1.36	0.20	1.12	0.21	0.55	0.09	0.53	0.08	4.91	9.05	**63**
LWAC003	4	8	5.00	10.71	1.04	3.81	0.72	0.17	0.64	0.09	0.53	0.11	0.28	0.04	0.24	0.04	3.02	23.16	**26**
LWAC003	8	12	1.86	4.02	0.49	1.91	0.49	0.15	0.48	0.08	0.54	0.11	0.31	0.05	0.33	0.05	2.30	23.16	**13**
LWAC003	12	16	1.94	4.01	0.57	2.46	0.73	0.24	0.79	0.14	0.97	0.19	0.57	0.09	0.66	0.10	4.08	36.50	**18**
LWAC003	16	20	3.33	6.63	0.83	3.59	0.96	0.32	1.23	0.23	1.51	0.31	0.91	0.15	1.00	0.16	7.30	56.60	**28**
LWAC003	20	24	49.16	103.44	12.49	47.92	10.29	2.94	8.04	1.23	6.34	1.04	2.59	0.35	2.15	0.30	20.84	75.46	**269**
LWAC003	24	28	66.19	132.97	15.89	66.40	15.70	4.77	15.71	2.39	13.16	2.36	5.84	0.83	4.96	0.70	54.14	57.36	**402**
LWAC003	28	32	22.72	33.06	5.73	26.76	6.95	1.94	8.61	1.38	8.22	1.67	4.50	0.63	3.82	0.59	47.16	47.39	**174**
LWAC003	32	36	17.05	33.62	5.13	24.22	6.66	1.82	8.12	1.29	7.59	1.51	3.88	0.53	3.15	0.47	42.58	46.47	**158**
LWAC003	36	40	11.10	24.78	3.69	17.56	4.79	1.33	5.72	0.90	5.34	1.01	2.62	0.36	2.20	0.34	26.33	52.61	**108**
LWAC003	40	44	16.86	38.95	5.60	26.67	7.05	1.88	7.91	1.24	7.21	1.35	3.42	0.47	2.77	0.41	34.45	43.25	**156**
LWAC003	44	48	12.84	33.25	4.47	21.48	5.77	1.46	6.78	1.07	6.13	1.18	2.99	0.42	2.40	0.37	30.97	42.33	**132**
LWAC003	48	49	12.07	30.60	4.03	19.67	5.37	1.38	6.18	0.98	5.65	1.08	2.76	0.38	2.22	0.33	27.87	36.96	**121**
LWAC004	0	4	8.12	14.90	1.68	5.92	1.08	0.22	0.90	0.13	0.74	0.14	0.36	0.05	0.31	0.04	4.04	8.59	**39**
LWAC004	4	8	2.06	4.20	0.43	1.54	0.31	0.08	0.28	0.04	0.26	0.05	0.13	0.02	0.11	0.02	1.10	14.26	**11**

Hole ID	From	To	La2O3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Y2O3	Sc2O3	TREO
LWAC004	8	12	1.28	1.77	0.26	1.04	0.20	0.05	0.18	0.03	0.17	0.03	0.09	0.01	0.09	0.01	1.00	7.82	**6**
LWAC004	12	16	1.66	2.65	0.30	1.12	0.20	0.05	0.17	0.02	0.13	0.02	0.05	0.01	0.06	0.01	0.64	7.67	**7**
LWAC004	16	20	2.26	3.40	0.48	1.71	0.32	0.09	0.22	0.04	0.20	0.04	0.11	0.02	0.10	0.02	0.91	5.52	**10**
LWAC004	20	24	9.51	12.87	1.84	6.15	1.05	0.32	0.76	0.09	0.46	0.07	0.18	0.02	0.14	0.02	1.75	4.14	**35**
LWAC004	24	28	8.37	17.01	1.60	5.39	0.93	0.30	0.74	0.10	0.55	0.10	0.24	0.03	0.24	0.03	2.31	3.37	**38**
LWAC004	28	32	30.93	66.32	5.08	17.81	3.01	0.84	2.65	0.35	1.90	0.36	0.88	0.13	0.73	0.10	9.13	3.68	**140**
LWAC004	32	36	23.72	52.44	4.38	15.29	2.63	0.71	2.15	0.29	1.65	0.31	0.78	0.11	0.64	0.10	8.80	2.91	**114**
LWAC005	0	4	12.89	34.03	3.09	10.79	1.98	0.45	1.56	0.23	1.23	0.24	0.63	0.09	0.57	0.09	5.99	9.51	**74**
LWAC005	4	8	4.88	11.48	0.92	3.09	0.54	0.14	0.42	0.06	0.35	0.06	0.17	0.03	0.16	0.02	1.65	7.67	**24**
LWAC005	8	12	1.80	7.92	0.53	2.05	0.52	0.16	0.42	0.07	0.41	0.07	0.20	0.03	0.20	0.03	1.38	15.18	**16**
LWAC005	12	16	0.86	2.30	0.21	0.73	0.15	0.03	0.12	0.02	0.10	0.02	0.06	0.01	0.06	0.01	0.51	3.22	**5**
LWAC005	16	20	0.75	1.11	0.15	0.47	0.09	0.03	0.08	0.01	0.06	0.01	0.03	-0.01	0.03	-0.01	0.37	2.45	**3**
LWAC005	20	24	0.72	4.00	0.18	0.68	0.15	0.06	0.15	0.02	0.16	0.03	0.09	0.01	0.11	0.02	0.57	5.21	**7**
LWAC005	24	28	55.22	114.67	11.52	38.51	6.42	1.93	4.03	0.53	2.73	0.44	1.03	0.15	0.87	0.11	8.20	4.60	**246**
LWAC005	28	32	71.36	152.57	11.55	39.39	6.30	2.14	5.14	0.71	3.78	0.64	1.54	0.21	1.20	0.15	12.62	1.99	**309**
LWAC005	32	36	39.30	61.42	5.56	17.98	2.27	0.67	1.75	0.22	1.18	0.21	0.54	0.07	0.40	0.06	6.07	2.15	**138**
LWAC005	36	38	27.36	49.78	4.42	13.83	1.77	0.42	0.99	0.10	0.50	0.08	0.19	0.02	0.12	0.02	2.50	2.45	**102**
LWAC006	0	4	26.00	52.99	5.44	19.06	3.29	0.82	2.66	0.38	2.09	0.38	1.02	0.14	0.87	0.13	10.64	8.74	**126**
LWAC006	4	8	4.15	6.59	0.82	2.66	0.46	0.09	0.32	0.04	0.24	0.04	0.10	0.02	0.10	0.01	0.95	7.98	**17**
LWAC006	8	12	3.75	7.69	0.73	2.47	0.39	0.10	0.31	0.05	0.25	0.05	0.12	0.02	0.12	0.01	1.27	7.67	**17**
LWAC006	12	16	8.31	12.59	1.39	4.52	0.68	0.18	0.45	0.07	0.30	0.05	0.12	0.01	0.08	0.01	1.21	1.23	**30**
LWAC006	16	20	2.22	2.90	0.42	1.38	0.18	0.04	0.13	0.01	0.08	0.02	0.04	-0.01	0.03	-0.01	0.42	0.77	**8**
LWAC006	20	24	5.06	8.06	0.76	2.38	0.30	0.09	0.18	0.02	0.09	0.01	0.03	-0.01	0.02	-0.01	0.43	1.23	**17**
LWAC006	24	28	24.11	46.53	4.11	12.60	1.69	0.50	0.94	0.11	0.47	0.06	0.13	0.01	0.08	0.01	1.57	3.07	**93**
LWAC006	28	32	73.36	140.73	12.99	39.55	5.39	1.58	2.94	0.35	1.55	0.22	0.44	0.05	0.24	0.03	5.11	9.66	**285**
LWAC006	32	36	71.30	132.64	12.27	37.75	5.10	1.44	2.71	0.32	1.35	0.18	0.34	0.04	0.19	0.02	4.24	5.37	**270**
LWAC006	36	40	37.23	69.80	6.71	22.06	3.23	1.15	2.00	0.24	1.13	0.17	0.36	0.04	0.24	0.03	4.08	4.14	**148**
LWAC006	40	44	44.56	78.67	7.52	25.37	3.64	1.21	2.56	0.30	1.36	0.22	0.49	0.05	0.32	0.04	5.93	8.74	**172**
LWAC006	44	48	23.51	43.61	3.87	12.49	1.75	0.71	1.05	0.12	0.52	0.08	0.20	0.02	0.15	0.02	2.30	3.99	**90**
LWAC006	48	52	17.99	33.16	2.97	9.55	1.35	0.55	0.80	0.09	0.38	0.06	0.14	0.02	0.10	0.01	1.63	2.15	**69**
LWAC007	0	4	10.45	25.87	2.40	8.42	1.53	0.32	1.16	0.16	0.90	0.17	0.43	0.07	0.39	0.05	4.22	9.36	**57**
LWAC007	4	8	3.17	4.93	0.56	1.93	0.31	0.07	0.20	0.03	0.16	0.02	0.06	0.01	0.06	0.01	0.61	7.52	**12**
LWAC007	8	12	2.00	3.36	0.40	1.35	0.23	0.07	0.17	0.02	0.14	0.03	0.08	0.01	0.07	0.01	0.72	5.06	**9**
LWAC007	12	16	0.89	1.34	0.17	0.62	0.10	0.02	0.08	0.01	0.07	0.01	0.03	-0.01	0.04	-0.01	0.32	5.98	**4**
LWAC007	16	20	0.34	0.64	0.08	0.26	0.04	0.01	0.03	-0.01	0.02	-0.01	0.01	-0.01	0.02	-0.01	0.13	5.06	**2**

Hole ID	From	To	La2O3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Y2O3	Sc2O3	TREO
LWAC007	20	24	0.74	5.91	0.15	0.49	0.08	0.03	0.05	-0.01	0.04	0.01	0.02	-0.01	0.02	-0.01	0.18	2.15	**8**
LWAC007	24	28	8.90	14.37	1.44	4.34	0.56	0.16	0.37	0.04	0.20	0.03	0.07	0.01	0.03	-0.01	0.86	2.15	**31**
LWAC007	28	32	44.09	120.41	7.07	21.54	2.84	0.76	1.55	0.18	0.78	0.12	0.25	0.03	0.17	0.02	2.79	1.38	**203**
LWAC007	32	36	33.84	64.97	5.69	17.95	2.47	0.73	1.53	0.19	0.90	0.15	0.32	0.04	0.22	0.03	4.09	2.15	**133**
LWAC007	36	40	29.41	53.29	4.83	14.88	1.84	0.45	0.98	0.09	0.35	0.05	0.11	0.01	0.05	0.01	1.60	1.99	**108**
LWAC007	40	42	29.63	55.37	5.11	15.88	2.04	0.54	1.10	0.11	0.46	0.07	0.13	0.01	0.08	0.01	1.85	2.45	**112**
LWAC008	0	4	31.53	60.07	6.24	21.92	3.61	0.90	2.92	0.42	2.39	0.45	1.20	0.18	1.07	0.17	13.35	10.43	**146**
LWAC008	4	8	3.14	8.43	0.63	2.16	0.35	0.09	0.25	0.04	0.20	0.04	0.10	0.01	0.11	0.01	0.99	6.90	**17**
LWAC008	8	12	2.28	2.80	0.34	1.25	0.17	0.04	0.11	0.02	0.09	0.01	0.04	-0.01	0.05	-0.01	0.48	7.36	**8**
LWAC008	12	16	1.20	2.96	0.31	1.07	0.21	0.06	0.14	0.02	0.13	0.02	0.06	0.01	0.06	0.01	0.48	8.59	**7**
LWAC008	16	20	3.01	3.41	0.39	1.33	0.17	0.04	0.12	0.02	0.08	0.02	0.04	-0.01	0.04	-0.01	0.46	5.52	**9**
LWAC008	20	24	0.59	3.21	0.14	0.54	0.09	0.03	0.07	0.01	0.08	0.01	0.05	-0.01	0.04	-0.01	0.37	2.30	**5**
LWAC008	24	28	4.17	11.08	0.39	1.10	0.19	0.05	0.13	0.02	0.12	0.02	0.07	0.01	0.07	0.01	0.56	5.37	**18**
LWAC008	28	32	11.26	24.56	1.20	3.16	0.53	0.15	0.31	0.04	0.28	0.05	0.14	0.02	0.13	0.02	1.02	4.45	**43**
LWAC008	32	36	145.87	264.32	22.25	63.85	8.14	2.74	5.08	0.66	3.01	0.43	0.83	0.09	0.45	0.06	9.97	7.98	**528**
LWAC008	36	38	59.39	80.19	5.60	14.38	1.71	0.60	1.16	0.18	1.05	0.22	0.52	0.06	0.28	0.04	7.20	4.45	**173**
LWAC009	0	4	23.56	69.20	5.24	18.71	3.47	0.86	2.78	0.42	2.40	0.46	1.19	0.17	1.07	0.16	12.15	9.66	**142**
LWAC009	4	8	3.80	5.91	0.73	2.43	0.43	0.10	0.32	0.04	0.24	0.04	0.12	0.02	0.13	0.01	1.22	7.36	**16**
LWAC009	8	12	1.60	2.82	0.31	1.01	0.16	0.05	0.12	0.02	0.12	0.02	0.05	0.01	0.05	0.01	0.41	9.36	**7**
LWAC009	12	16	1.40	2.89	0.33	1.09	0.22	0.06	0.15	0.02	0.15	0.03	0.07	0.01	0.07	0.01	0.50	10.43	**7**
LWAC009	16	20	1.52	6.28	0.34	1.24	0.19	0.06	0.15	0.02	0.15	0.03	0.09	0.01	0.09	0.01	0.76	9.82	**11**
LWAC009	20	24	3.24	5.37	0.33	0.94	0.18	0.04	0.12	0.02	0.12	0.02	0.06	0.01	0.07	0.01	0.67	7.82	**11**
LWAC009	24	28	16.12	101.03	4.30	14.25	2.55	0.71	1.73	0.28	1.48	0.28	0.71	0.10	0.59	0.08	6.10	26.99	**150**
LWAC009	28	31	18.42	158.18	4.59	16.23	3.35	1.02	2.73	0.48	2.75	0.49	1.26	0.17	1.04	0.16	10.60	41.72	**221**
LWAC010	0	4	24.78	76.14	5.44	18.59	3.19	0.79	2.63	0.41	2.26	0.42	1.07	0.16	1.02	0.14	11.21	10.74	**148**
LWAC010	4	8	5.23	7.63	0.97	3.25	0.52	0.14	0.42	0.05	0.34	0.07	0.17	0.03	0.15	0.02	1.99	6.60	**21**
LWAC010	8	12	1.50	3.74	0.31	1.01	0.18	0.05	0.14	0.02	0.13	0.02	0.06	0.01	0.06	0.01	0.43	10.74	**8**
LWAC010	12	16	1.40	3.38	0.42	1.41	0.26	0.09	0.18	0.03	0.20	0.03	0.08	0.01	0.09	0.01	0.53	18.56	**8**
LWAC010	16	20	1.27	3.81	0.28	0.93	0.17	0.05	0.13	0.02	0.12	0.03	0.07	0.01	0.08	0.01	0.80	5.68	**8**
LWAC010	20	24	0.86	2.56	0.16	0.55	0.09	0.03	0.07	0.01	0.09	0.02	0.05	0.01	0.05	-0.01	0.51	15.95	**5**
LWAC010	24	28	31.44	64.34	5.68	18.42	2.87	0.76	2.01	0.30	1.45	0.24	0.54	0.07	0.38	0.05	5.56	16.41	**134**
LWAC010	28	32	90.16	161.44	15.20	49.62	7.46	1.93	5.53	0.73	3.79	0.66	1.61	0.21	1.20	0.18	17.40	10.58	**357**
LWAC010	32	36	59.55	103.50	10.52	34.77	5.25	1.22	3.99	0.52	2.75	0.51	1.30	0.18	1.04	0.15	16.64	6.29	**242**
LWAC010	36	40	37.97	70.83	6.94	23.43	3.64	0.80	2.66	0.35	2.01	0.38	0.99	0.14	0.83	0.12	11.43	7.21	**163**
LWAC010	40	44	28.29	59.52	5.71	19.65	3.06	0.78	2.36	0.33	1.81	0.35	0.90	0.13	0.78	0.11	9.94	7.36	**134**

Hole ID	From	To	La2O3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Y2O3	Sc2O3	TREO
LWAC010	44	48	33.33	62.58	5.94	19.67	3.03	0.78	2.35	0.33	1.77	0.35	0.90	0.12	0.77	0.11	9.74	8.90	**142**
LWAC010	48	52	65.33	113.16	10.22	32.23	4.48	1.14	3.24	0.42	2.29	0.39	1.02	0.14	0.80	0.11	10.69	10.74	**246**
LWAC010	52	53	90.62	157.40	13.77	41.07	5.14	1.21	3.60	0.48	2.44	0.44	1.07	0.14	0.81	0.11	12.74	8.44	**331**
LWAC011	0	4	12.78	26.15	2.92	10.36	1.79	0.45	1.45	0.22	1.22	0.24	0.64	0.09	0.60	0.09	6.21	13.19	**65**
LWAC011	4	8	9.00	8.32	1.55	5.24	0.75	0.20	0.56	0.08	0.44	0.08	0.21	0.03	0.18	0.02	2.24	7.06	**29**
LWAC011	8	12	2.26	4.74	0.47	1.57	0.27	0.08	0.20	0.03	0.18	0.03	0.08	0.01	0.08	0.01	0.64	13.50	**11**
LWAC011	12	16	2.13	6.01	0.54	1.75	0.35	0.09	0.21	0.03	0.19	0.03	0.10	0.01	0.10	0.01	0.69	14.57	**12**
LWAC011	16	20	3.08	9.62	0.68	2.20	0.35	0.09	0.32	0.05	0.30	0.06	0.16	0.02	0.17	0.02	1.49	6.90	**19**
LWAC011	20	24	35.46	48.09	5.96	18.38	2.55	0.71	1.62	0.22	1.17	0.21	0.55	0.07	0.51	0.07	4.84	14.26	**120**
LWAC011	24	28	177.58	279.66	29.83	92.51	13.67	4.34	11.38	1.63	9.24	1.73	4.36	0.59	3.62	0.51	40.73	14.42	**671**
LWAC011	28	32	118.90	157.38	14.41	42.80	4.71	1.56	4.36	0.60	3.53	0.76	2.03	0.28	1.55	0.24	27.14	5.98	**380**
LWAC011	32	36	45.58	73.87	6.44	19.70	2.47	0.95	1.88	0.25	1.37	0.29	0.76	0.10	0.59	0.09	9.85	12.27	**164**
LWAC011	36	40	64.37	113.76	10.05	31.85	3.84	1.31	2.43	0.28	1.32	0.23	0.55	0.07	0.39	0.06	7.25	3.68	**238**
LWAC011	40	44	18.37	34.28	3.06	9.73	1.37	0.39	0.96	0.14	0.70	0.13	0.35	0.04	0.31	0.04	3.53	7.06	**73**
LWAC011	44	47	19.52	33.55	2.83	8.63	1.05	0.34	0.70	0.08	0.51	0.09	0.27	0.04	0.25	0.03	2.88	7.82	**71**
LWAC012	0	4	39.68	79.38	7.75	27.47	4.73	1.13	4.14	0.60	3.38	0.66	1.74	0.24	1.46	0.21	20.13	10.43	**193**
LWAC012	4	8	3.84	5.54	0.68	2.28	0.37	0.10	0.33	0.04	0.24	0.05	0.12	0.02	0.10	0.01	1.30	11.04	**15**
LWAC012	8	12	1.07	2.02	0.22	0.74	0.13	0.03	0.08	0.01	0.08	0.01	0.03	-0.01	0.03	-0.01	0.30	7.82	**5**
LWAC012	12	16	42.23	58.91	7.56	24.56	3.97	1.12	2.57	0.35	1.71	0.29	0.66	0.09	0.56	0.07	5.41	14.72	**150**
LWAC012	16	20	140.45	262.32	22.34	71.49	10.32	3.07	6.98	0.97	5.12	0.86	1.97	0.27	1.52	0.19	15.94	7.21	**544**
LWAC012	20	24	50.20	190.37	8.79	28.52	4.64	1.59	3.40	0.52	2.97	0.50	1.22	0.18	1.13	0.14	9.33	3.22	**304**
LWAC012	24	28	79.18	136.67	13.06	41.88	6.22	2.02	4.80	0.70	3.96	0.74	1.92	0.27	1.64	0.24	17.65	7.06	**311**
LWAC012	28	32	63.83	70.18	10.48	34.48	5.05	1.65	4.09	0.54	2.85	0.54	1.36	0.18	1.04	0.15	14.92	8.13	**211**
LWAC012	32	36	35.68	62.86	5.97	19.40	2.84	0.95	2.01	0.26	1.22	0.22	0.54	0.07	0.41	0.05	5.91	4.29	**138**
LWAC012	36	40	39.75	71.91	6.71	21.75	2.94	0.78	2.02	0.25	1.37	0.25	0.63	0.09	0.50	0.07	7.06	4.45	**156**
LWAC013	0	4	39.07	54.24	7.14	25.49	4.17	0.97	3.58	0.49	2.68	0.52	1.35	0.18	1.13	0.16	16.67	12.12	**158**
LWAC013	4	8	2.69	3.82	0.61	2.28	0.42	0.11	0.37	0.06	0.33	0.06	0.17	0.03	0.17	0.02	1.80	8.13	**13**
LWAC013	8	12	2.36	4.38	0.41	1.40	0.22	0.07	0.15	0.02	0.13	0.02	0.06	0.01	0.05	-0.01	0.61	2.61	**10**
LWAC013	12	16	86.08	113.42	11.79	36.36	4.38	1.84	2.67	0.31	1.45	0.23	0.55	0.07	0.38	0.05	5.74	4.14	**265**
LWAC013	16	20	144.94	247.11	20.66	65.50	8.43	3.85	5.50	0.67	3.26	0.58	1.46	0.19	1.18	0.16	15.65	2.15	**519**
LWAC013	20	24	73.89	124.23	10.50	32.09	4.03	2.10	2.53	0.29	1.39	0.23	0.56	0.07	0.41	0.05	5.87	4.45	**258**
LWAC013	24	28	274.46	377.60	37.24	98.50	8.56	2.36	4.69	0.46	2.12	0.41	0.94	0.11	0.59	0.09	13.37	2.45	**822**
LWAC013	28	32	49.49	72.81	6.37	19.39	2.24	0.85	1.46	0.16	0.71	0.14	0.36	0.04	0.24	0.04	5.16	1.99	**159**
LWAC013	32	36	22.96	40.23	3.44	10.70	1.30	0.50	0.79	0.09	0.47	0.10	0.24	0.03	0.20	0.03	3.24	4.14	**84**
LWAC014	0	4	12.76	27.72	2.78	9.32	1.58	0.38	1.19	0.17	0.95	0.17	0.46	0.07	0.43	0.06	4.70	14.26	**63**

Hole ID	From	To	La2O3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Y2O3	Sc2O3	TREO
LWAC014	4	8	3.73	7.41	0.79	2.79	0.52	0.13	0.41	0.06	0.35	0.07	0.19	0.03	0.18	0.02	1.75	7.21	**18**
LWAC014	8	12	1.77	1.82	0.29	1.02	0.13	0.05	0.12	0.02	0.08	0.01	0.05	-0.01	0.04	-0.01	0.66	3.22	**6**
LWAC014	12	16	53.68	101.16	9.65	27.80	3.08	1.39	1.37	0.13	0.61	0.10	0.21	0.03	0.15	0.02	2.39	2.76	**202**
LWAC014	16	20	55.15	73.52	8.03	24.24	2.82	1.40	1.46	0.15	0.69	0.11	0.27	0.03	0.21	0.03	3.12	3.07	**171**
LWAC014	20	24	36.68	103.02	6.27	19.41	2.70	1.38	1.54	0.18	0.87	0.16	0.40	0.05	0.32	0.04	4.18	1.38	**177**
LWAC014	24	28	41.58	117.31	6.06	19.24	2.57	1.40	1.67	0.21	1.17	0.22	0.60	0.08	0.52	0.08	6.32	0.92	**199**
LWAC014	28	29	73.67	62.25	8.42	25.18	2.36	1.20	1.44	0.14	0.65	0.12	0.30	0.04	0.20	0.03	4.31	0.92	**180**
LWAC015	0	4	23.61	47.45	5.53	19.09	3.22	0.78	2.55	0.36	1.98	0.38	0.96	0.14	0.87	0.12	9.97	11.50	**117**
LWAC015	4	8	6.35	20.36	1.55	5.27	0.98	0.27	0.77	0.11	0.68	0.12	0.35	0.05	0.35	0.05	3.10	7.98	**40**
LWAC015	8	12	2.15	3.07	0.46	1.67	0.30	0.08	0.24	0.04	0.21	0.04	0.11	0.01	0.09	0.01	1.00	2.30	**9**
LWAC015	12	16	4.91	8.42	0.90	2.97	0.42	0.09	0.25	0.04	0.20	0.04	0.10	0.01	0.09	0.02	0.91	2.76	**19**
LWAC015	16	20	1.72	4.33	0.51	1.89	0.37	0.09	0.26	0.04	0.22	0.04	0.13	0.02	0.11	0.02	1.09	4.14	**11**
LWAC015	20	24	31.19	60.48	5.57	16.08	1.77	0.72	0.94	0.10	0.49	0.09	0.24	0.03	0.20	0.03	2.90	6.60	**121**
LWAC015	24	28	200.21	348.78	31.12	86.12	9.07	3.99	4.55	0.47	2.12	0.34	0.78	0.09	0.52	0.07	8.85	3.83	**697**
LWAC015	28	32	50.49	95.07	6.88	20.69	2.31	1.37	1.25	0.13	0.61	0.11	0.26	0.03	0.18	0.03	3.04	1.23	**182**
LWAC015	32	33	14.34	20.19	1.78	5.40	0.56	0.42	0.35	0.04	0.17	0.03	0.07	0.01	0.05	0.01	0.99	0.92	**44**
LWAC016	0	4	46.46	72.58	8.41	29.43	4.95	1.29	4.12	0.59	3.38	0.66	1.76	0.24	1.46	0.21	20.95	12.88	**197**
LWAC016	4	8	118.48	191.46	16.19	56.30	8.97	2.93	7.49	1.10	6.08	1.18	3.12	0.44	2.65	0.38	32.42	16.72	**449**
LWAC016	8	12	52.74	74.51	6.95	23.56	3.73	1.27	2.75	0.37	2.04	0.37	0.97	0.14	0.77	0.12	10.74	14.72	**181**
LWAC016	12	16	63.32	79.06	8.44	27.70	4.01	1.40	2.89	0.40	2.16	0.38	1.00	0.15	0.88	0.12	10.01	18.41	**202**
LWAC016	16	20	242.83	381.49	34.41	94.49	10.94	3.10	7.92	1.15	6.41	1.25	3.38	0.49	2.89	0.42	38.92	25.77	**830**
LWAC016	20	21	13.10	28.38	3.00	11.39	2.27	0.66	2.47	0.38	2.39	0.46	1.26	0.17	1.04	0.14	13.04	21.47	**80**
LWAC017	0	4	30.74	67.89	5.55	18.39	3.06	0.74	2.37	0.34	1.85	0.36	0.94	0.13	0.79	0.12	9.42	11.20	**143**
LWAC017	4	8	18.07	24.61	2.32	7.33	0.97	0.40	0.70	0.09	0.50	0.08	0.22	0.03	0.19	0.02	2.39	4.45	**58**
LWAC017	8	12	214.49	348.16	29.56	73.69	6.36	1.43	2.76	0.25	1.06	0.16	0.39	0.05	0.33	0.05	4.89	3.83	**684**
LWAC017	12	16	266.97	427.32	36.39	92.62	8.39	2.37	3.66	0.34	1.34	0.22	0.52	0.07	0.53	0.08	6.51	5.68	**847**
LWAC017	16	17	17.49	33.81	2.53	7.55	1.24	0.53	1.67	0.36	2.62	0.57	1.68	0.29	2.12	0.34	19.39	2.91	**92**
LWAC018	0	4	29.95	68.73	6.53	23.12	3.99	1.03	3.21	0.46	2.60	0.52	1.46	0.21	1.36	0.21	14.35	13.65	**158**
LWAC018	4	8	44.36	69.65	6.09	17.73	2.19	0.60	1.48	0.20	0.99	0.18	0.43	0.06	0.37	0.05	4.79	7.67	**149**
LWAC018	8	12	21.35	40.41	3.68	11.47	1.87	0.37	1.46	0.21	1.17	0.23	0.59	0.09	0.54	0.08	6.48	8.90	**90**
LWAC018	12	15	11.80	22.18	2.11	6.96	1.26	0.44	1.14	0.18	1.12	0.22	0.63	0.10	0.61	0.09	7.52	5.98	**56**
LWAC019	0	4	40.76	69.06	7.67	26.37	4.09	1.11	3.28	0.44	2.46	0.48	1.28	0.19	1.12	0.18	13.11	14.11	**172**
LWAC019	4	8	46.49	75.06	6.45	19.54	2.60	0.70	1.83	0.24	1.20	0.20	0.48	0.06	0.34	0.04	5.60	5.37	**161**
LWAC019	8	12	30.74	56.47	5.26	17.12	2.66	0.63	2.09	0.33	1.84	0.37	0.98	0.14	0.86	0.13	11.42	9.36	**131**
LWAC019	12	15	19.69	39.79	4.05	14.85	2.73	0.76	2.81	0.45	2.75	0.57	1.64	0.24	1.46	0.22	16.81	18.56	**109**

Hole ID	From	To	La2O3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Y2O3	Sc2O3	TREO
LWAC020	0	4	53.18	93.43	10.40	34.29	5.48	1.27	4.19	0.58	3.11	0.60	1.53	0.20	1.20	0.18	17.85	9.66	**227**
LWAC020	4	8	49.69	84.65	9.32	32.48	5.35	1.33	4.49	0.62	3.51	0.65	1.68	0.24	1.49	0.21	15.58	21.78	**211**
LWAC020	8	12	11.97	18.64	1.90	6.34	0.90	0.32	0.70	0.10	0.55	0.09	0.24	0.03	0.18	0.03	2.54	1.84	**45**
LWAC020	12	16	78.89	132.15	11.11	32.07	3.59	0.91	2.26	0.29	1.53	0.30	0.73	0.10	0.58	0.08	8.69	6.29	**273**
LWAC020	16	19	18.71	39.96	3.96	14.05	2.42	0.27	1.80	0.22	1.17	0.21	0.55	0.08	0.45	0.06	5.64	14.11	**90**
LWAC021	0	4	36.95	59.21	6.90	22.74	3.43	0.87	2.58	0.35	1.86	0.35	0.94	0.13	0.80	0.12	10.17	5.83	**147**
LWAC021	4	8	34.54	59.26	5.70	17.95	2.52	0.75	1.80	0.25	1.26	0.22	0.51	0.07	0.39	0.05	5.04	1.84	**130**
LWAC021	8	12	34.95	55.81	5.20	16.15	2.04	0.57	1.38	0.18	0.98	0.18	0.46	0.06	0.34	0.04	5.22	2.76	**124**
LWAC021	12	16	35.94	50.48	5.70	17.57	2.30	0.70	1.60	0.21	1.10	0.20	0.46	0.06	0.40	0.05	5.46	4.60	**122**
LWAC021	16	20	36.62	44.13	5.57	17.52	2.38	0.77	1.72	0.23	1.22	0.21	0.51	0.07	0.40	0.06	5.59	4.29	**117**
LWAC021	20	24	95.15	157.05	13.94	40.25	4.44	1.11	2.82	0.34	1.70	0.28	0.68	0.09	0.48	0.06	8.95	5.52	**327**
LWAC021	24	25	46.12	119.71	7.84	25.59	3.88	1.08	3.01	0.43	2.44	0.48	1.30	0.19	1.17	0.16	12.50	17.64	**226**
LWAC022	0	4	29.55	54.52	5.64	18.59	2.98	0.69	2.31	0.33	1.79	0.36	0.96	0.14	0.83	0.13	9.83	10.89	**129**
LWAC022	4	8	48.91	86.05	9.02	29.42	4.45	0.46	3.08	0.38	1.92	0.34	0.81	0.11	0.65	0.09	9.97	3.07	**196**
LWAC022	8	12	97.36	191.55	17.68	54.61	7.89	0.90	5.33	0.70	3.39	0.55	1.23	0.15	0.83	0.11	14.77	3.07	**397**
LWAC022	12	16	162.69	300.73	29.18	86.87	12.69	2.49	9.44	1.33	6.58	1.08	2.38	0.30	1.66	0.20	28.45	7.52	**646**
LWAC022	16	20	15.15	31.42	2.76	8.61	1.30	0.33	1.12	0.16	0.97	0.21	0.56	0.08	0.52	0.08	5.78	9.36	**69**
LWAC022	20	21	5.87	11.29	1.25	4.94	0.94	0.26	0.81	0.08	0.40	0.07	0.15	0.02	0.12	0.02	1.64	5.83	**28**
LWAC023	0	4	26.94	58.67	5.00	15.85	2.43	0.36	1.71	0.23	1.17	0.21	0.51	0.07	0.39	0.05	5.49	7.52	**119**
LWAC023	4	8	51.08	97.11	8.94	28.05	4.08	0.24	2.82	0.36	1.81	0.30	0.74	0.10	0.57	0.08	9.49	2.45	**206**
LWAC023	8	10	71.49	134.14	12.64	38.57	5.46	0.32	3.62	0.45	2.14	0.36	0.79	0.10	0.57	0.08	10.44	2.45	**281**
LWAC024	0	4	62.97	80.39	10.02	33.48	4.87	1.07	3.97	0.52	2.82	0.51	1.29	0.16	0.94	0.12	15.84	5.37	**219**
LWAC024	4	8	23.85	47.27	4.35	14.22	2.27	0.56	1.87	0.27	1.48	0.25	0.57	0.08	0.46	0.05	5.83	6.29	**103**
LWAC024	8	12	11.18	18.73	1.99	6.16	0.88	0.28	0.66	0.10	0.49	0.09	0.20	0.03	0.15	0.02	2.18	1.53	**43**
LWAC024	12	16	4.18	6.54	0.65	2.09	0.33	0.13	0.26	0.04	0.23	0.04	0.12	0.02	0.12	0.02	1.28	2.61	**16**
LWAC024	16	19	66.45	93.35	9.68	29.08	3.83	0.81	2.78	0.39	2.21	0.41	1.09	0.15	0.94	0.13	13.55	9.66	**225**
LWAC025	0	4	38.42	52.06	6.80	23.12	3.42	0.81	2.84	0.38	2.14	0.40	1.05	0.15	0.90	0.14	12.36	11.35	**145**
LWAC025	4	8	4.40	7.88	0.79	2.62	0.43	0.08	0.36	0.05	0.32	0.06	0.18	0.03	0.17	0.03	1.69	5.68	**19**
LWAC025	8	12	48.77	78.75	7.80	24.31	3.18	0.76	2.00	0.23	1.11	0.18	0.42	0.05	0.30	0.04	5.44	6.44	**173**
LWAC025	12	16	143.65	237.74	21.35	64.36	7.99	1.71	5.74	0.77	4.13	0.80	2.05	0.28	1.64	0.25	25.82	6.60	**518**
LWAC025	16	19	36.23	72.08	7.57	28.44	4.92	1.18	4.27	0.60	3.29	0.63	1.63	0.23	1.34	0.20	16.06	15.95	**179**
LWAC026	0	4	25.56	47.77	4.74	16.53	2.75	0.65	2.42	0.33	1.88	0.36	0.96	0.13	0.79	0.11	11.66	10.28	**117**
LWAC026	4	8	5.44	8.57	1.00	3.29	0.52	0.11	0.42	0.06	0.33	0.06	0.18	0.02	0.16	0.02	1.78	7.98	**22**
LWAC026	8	12	4.23	7.76	0.94	3.06	0.59	0.18	0.42	0.07	0.40	0.07	0.48	0.03	0.20	0.03	1.57	32.52	**20**
LWAC026	12	16	1.42	2.34	0.26	0.91	0.16	0.05	0.14	0.02	0.13	0.03	0.07	0.01	0.06	0.01	0.69	31.90	**6**

Hole ID	From	To	La2O3	CeO2	Pr6O11	Nd2O3	Sm2O3	Eu2O3	Gd2O3	Tb4O7	Dy2O3	Ho2O3	Er2O3	Tm2O3	Yb2O3	Lu2O3	Y2O3	Sc2O3	TREO
LWAC026	16	20	1.03	1.85	0.26	0.94	0.22	0.06	0.15	0.02	0.15	0.03	0.09	0.01	0.11	0.01	0.75	31.44	**6**
LWAC026	20	24	2.77	7.58	0.90	3.45	0.90	0.29	0.82	0.15	0.96	0.19	0.55	0.09	0.63	0.09	3.01	34.51	**22**
LWAC026	24	28	3.64	9.63	1.37	5.65	1.86	0.74	2.10	0.46	3.19	0.64	1.85	0.30	2.11	0.29	11.43	45.09	**45**
LWAC026	28	32	70.97	130.77	15.59	65.19	14.10	4.87	15.51	2.41	14.27	2.70	6.99	0.99	5.90	0.81	64.79	35.28	**416**
LWAC026	32	36	20.64	45.90	6.27	29.96	7.93	2.34	10.40	1.71	10.83	2.33	6.37	0.89	5.16	0.79	67.86	43.71	**219**
LWAC026	36	40	14.30	35.95	5.03	23.98	6.51	1.51	7.29	1.15	6.63	1.27	3.23	0.45	2.76	0.39	32.40	38.81	**143**
LWAC026	40	44	10.00	24.73	3.44	16.40	4.37	1.16	5.23	0.81	4.81	0.94	2.43	0.36	2.14	0.33	24.13	43.41	**101**
LWAC026	44	48	12.95	31.89	4.66	23.28	6.44	1.79	7.33	1.13	6.48	1.23	3.14	0.43	2.57	0.39	30.57	44.17	**134**
LWAC026	48	50	11.05	25.54	3.88	18.32	5.06	1.72	5.83	0.89	5.34	1.01	2.65	0.36	2.19	0.31	26.77	33.59	**111**
LWAC027	0	4	22.98	41.09	4.54	16.11	2.60	0.64	2.31	0.31	1.74	0.33	0.85	0.12	0.72	0.11	9.93	10.74	**104**
LWAC027	4	8	7.73	13.83	1.73	5.97	1.11	0.28	0.92	0.13	0.78	0.15	0.40	0.06	0.37	0.05	3.57	17.49	**37**
LWAC027	8	12	2.01	3.21	0.43	1.65	0.34	0.11	0.31	0.05	0.30	0.06	0.16	0.02	0.15	0.02	1.42	17.18	**10**
LWAC027	12	16	4.25	5.40	1.34	5.24	1.38	0.47	1.30	0.24	1.53	0.28	0.82	0.13	0.96	0.13	4.66	28.84	**28**
LWAC027	16	20	4.55	6.64	1.39	5.43	1.39	0.49	1.36	0.25	1.56	0.30	0.84	0.13	1.03	0.15	4.83	34.51	**30**
LWAC027	20	24	6.65	15.80	1.77	6.75	1.62	0.53	1.38	0.23	1.43	0.28	0.78	0.12	0.94	0.13	5.26	20.40	**44**
LWAC027	24	28	25.67	76.10	6.02	22.31	4.54	1.59	3.37	0.47	2.48	0.39	0.94	0.14	0.80	0.10	7.63	3.68	**153**
LWAC027	28	31	32.63	75.70	4.94	17.98	3.31	1.31	3.11	0.44	2.33	0.39	0.93	0.13	0.75	0.09	7.64	1.99	**152**

JORC 2012 Table 1 – Lang Well Aircore Drilling

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. 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.*	• Samples were collected from individual 1m sample piles and composited over 4 meter intervals downhole • Samples average 2-3kg in weight
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).*	• Aircore drilling to blade refusal
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.*	• Comments recorded for samples with low recovery
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*	• Samples were logged for colour, weathering, grain size, geology, alteration and mineralisation where possible

Criteria	JORC Code explanation	Commentary
	relevant intersections logged.	
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.*	• Samples were collected from individual 1m sample piles and composited over 4 meter intervals • Samples average 2-3kg in weight
Quality of assay data and laboratory tests	• *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 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.*	• Samples were assayed using an aqua-regia digest followed by analysis of gold and multi-elements by ICPMS with lower detection limit of 1ppb Au • Aqua-regia digest is a suitable method for reconnaissance exploration but is considered a partial digest for many elements, including REE's • QAQC samples inserted at frequency of 4 QAQC samples (i.e. standard, blank duplicate) per 100 samples
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.*	• No verification conducted to date
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.*	• Hole collar locations were recorded with a handheld GPS in MGA Zone 50 • RL was also recorded with handheld GPS but accuracy is variable
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*	• Drill holes were completed along existing tracks and fence lines over historic auger anomalies • The drill hole spacing along the lines is appropriate for the stage of exploration, however the amount of drilling was limited

Criteria	JORC Code explanation	Commentary
	applied.	
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.*	• Drill lines were planned along existing tracks and fence lines to cover historic auger anomalism • It is likely that the mineralized structures trend at a different orientation to the drill lines
Sample security	• *The measures taken to ensure sample security.*	• Samples were transported from site to the Perth laboratory by Miramar staff
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits have been undertaken

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.*	• The exploration was conducted on E59/2377 which is owned 100% by "MQ Minerals Pty Ltd", a wholly owned subsidiary of Miramar Resources Limited
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Exploration has been previously completed by other companies including Metana Minerals and Jervois Minerals and included auger sampling and limited aircore drilling
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The target is REE mineralisaiton

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.*
		• See Figure 1 which shows all holes completed with maximum TREO results.
		• Table 1 shows all REE results converted to oxides

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Data aggregation methods</td><td>• 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 stated.</td><td>• Table 1 shows all results
• Raw assay data for REE converted to oxides using standard formulae below
• TREO = La2O3 + CeO2 + Pr6O11 + Nd2O3 + Sm2 O3 + eu2O3 + Gd2O3 + Tb4O7 + Dy2O3 + Ho2O3 + Er2O3 + Tm2O3 + Yb2O3 + Lu2O3 + Y2O3
<table>
<tr><th>Element</th><th>Oxide</th><th>Factor</th></tr>
<tr><td>Cerium</td><td>CeO_2</td><td>1.2284</td></tr>
<tr><td>Dysprosium</td><td>Dy_2O_3</td><td>1.1477</td></tr>
<tr><td>Erbium</td><td>Er_2O_3</td><td>1.1435</td></tr>
<tr><td>Europium</td><td>Eu_2O_3</td><td>1.1579</td></tr>
<tr><td>Gadolinium</td><td>Gd_2O_3</td><td>1.1526</td></tr>
<tr><td>Holmium</td><td>Ho_2O_3</td><td>1.1455</td></tr>
<tr><td>Lanthanum</td><td>La_2O_3</td><td>1.1728</td></tr>
<tr><td>Lutetium</td><td>Lu_2O_3</td><td>1.1371</td></tr>
<tr><td>Neodymium</td><td>Nd_2O_3</td><td>1.1664</td></tr>
<tr><td>Praseodymium</td><td>Pr_6O_{11}</td><td>1.2082</td></tr>
<tr><td>Scandium</td><td>Sc_2O_3</td><td>1.5338</td></tr>
<tr><td>Samarium</td><td>Sm_2O_3</td><td>1.1596</td></tr>
<tr><td>Terbium</td><td>Tb_4O_7</td><td>1.1762</td></tr>
<tr><td>Thulium</td><td>Tm_2O_3</td><td>1.1421</td></tr>
<tr><td>Yttrium</td><td>Y_2O_3</td><td>1.2699</td></tr>
<tr><td>Ytterbium</td><td>Yb_2O_3</td><td>1.1387</td></tr>
</table></td></tr>
<tr><td>Relationship between mineralisation widths and intercept lengths</td><td>• These relationships are 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’).</td><td>• No assumptions about true width or orientation of mineralisation can be made from the current programme</td></tr>
<tr><td>Diagrams</td><td>• 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.</td><td>• See attached Figures</td></tr>
</table>

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.*	• All holes shown in Figure 1 • Table 1 shows all REE assays converted to oxides
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 other relevant data
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.*	• Further aircore drilling planned