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METALLURGICAL TESTING and MINERAL RESOURCE ESTIMATION UNDERWAY

Key Highlights

- Metallurgical test programme underway with rare-earth-element process experts.
- Encouraging weak acid digest results.
- Mineral Resource estimation commenced.

Metallurgical Test Work

In consultation with rare-earth-element (REE) process experts, Wave International, Transition Minerals has commenced a metallurgical test programme on samples recovered during the Company's 2022 Barkly Project drilling programme. The work encompasses laboratory-scale diagnostic tests (Figure 1) using commercially applicable reagents on two composite samples, in addition to assessments of size fractions and flotation separation to potentially create a REE mineral concentrate.



Figure 1: Laboratory test work at Nagrom the Mineral processor (Courtesy Nagrom).

The composite samples represent two chemically distinct populations of REE-enriched sediment drilled at the Barkly Project, containing total rare earth oxide (TREO) concentrations of 3,064 and 2,045 ppm (Table 1). The TREO in the samples contains a combined neodymium and praseodymium oxide (NdPr) percentage of 35.9% and 33.2%, a globally outstanding proportion of these valuable magnet rare earths.

Table 1: Samples submitted for metallurgical test work.

Sample	TREO (ppm)	NdPr (ppm)	NdPr%	U (ppm)	Th (ppm)
TM001	3,064	1,093	35.9%	4	5
TM002	2,045	671	33.2%	3	5

The metallurgical test programme will take approximately ten weeks to complete using specialist laboratory group Nagrom. Those results are expected to support a Mineral Resource estimate for the Company’s Barkly deposit and inform the development of a processing flowsheet for the extraction and separation of REEs.

Weak Acid Digest Results

Transition Minerals is pleased to announce the weak acid digest (‘weak’ aqua regia) results from 61 samples, analysed from the 2022 drilling programme at Barkly. The test provides an indication of the concentration of elements adsorbed to clay minerals or contained in iron oxides. Analyses averaged 19% extraction of the magnet rare earth oxides (Pr, Nd, Sm, Gd, Dy, Tb), with a peak of 51%, from 51 REE mineralised samples, and 63% vanadium extraction, with a peak of 87%, from 10 vanadium mineralised samples. Full results are provided in Appendix 1.

The vanadium extraction rates are comparable with global vanadium project extraction rates, and, along with recent ore characterisation work and the previous strong acid test results of 92–94% vanadium extraction, help direct future metallurgical work for vanadium.

Supplementing the Company’s recent scanning electron microscopy and microprobe work, the weak acid digest results confirm that the REE mineralisation is not primarily of the ionic adsorption type. The weak acid digest results were used to inform the design of the new metallurgical test programme.

Mineral Resource Estimation

Transition Minerals has engaged RSC to undertake a Mineral Resource estimate in accordance with the JORC Code (2012) on the Barkly REE and vanadium deposit. The work will build upon the Exploration Targets disclosed in January 2023.

For further information, please contact:

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Appendix 1 Weak Acid Digest Results

Table 2: Vanadium extraction rates from weak acid digestion

Sample_ID	ME-MS81* V_ppm	ME-MS41W** V_ppm	V Extraction Rate
TM00011	2370	1340	57%
TM00043	1930	1020	53%
TM00069	1725	1075	62%
TM00187	2890	2100	73%
TM00197	543	396	73%
TM00215	2650	1335	50%
TM00237	2680	1425	53%
TM00310	2300	1040	45%
TM00405	1550	1155	75%
TM00416	2570	1540	60%
TM00487	2000	1745	87%
Average			63%

Table 3 Total Rare Earth Oxide and Magnet Rare Earth Oxide extraction rates via weak acid digest

Sample_ID	ME-MS81*		ME-MS41W**		Extraction Rate	
	TREO ppm	MREO ppm	TREO ppm	MREO ppm	TREO	MREO
TM00412	3068	1065	659	245	21%	23%
TM00413	3345	1758	752	408	22%	23%
TM00428	2896	1000	428	158	15%	16%
TM00429	2541	1267	199	104	8%	8%
TM00435	1132	681	111	64	10%	9%
TM00448	3851	1362	413	155	11%	11%
TM00449	2399	917	459	238	19%	26%
TM00450	1216	509	222	117	18%	23%
TM00467	3878	812	266	69	7%	8%
TM00468	3819	1309	532	227	14%	17%
TM00469	1403	579	294	174	21%	30%
TM00482	2422	800	312	123	13%	15%
TM00483	3001	1402	628	383	21%	27%
TM00485	1305	551	463	282	35%	51%
TM00491	4027	1497	664	296	16%	20%
TM00499	2806	1155	607	323	22%	28%
TM00511	2268	750	266	114	12%	15%
TM00526	2432	731	261	102	11%	14%
TM00537	3861	1523	658	329	17%	22%

Sample_ID	ME-MS81*		ME-MS41W**		Extraction Rate	
TM00548	3211	1294	681	350	21%	27%
TM00556	1842	620	266	115	14%	19%
TM00568	1952	790	364	199	19%	25%
TM00584	2525	813	274	116	11%	14%
TM00655	1920	540	162	56	8%	10%
TM00656	1346	503	201	99	15%	20%
TM00673	2949	1159	520	266	18%	23%
TM00691	3109	1044	413	182	13%	17%
TM00692	1096	452	96	49	9%	11%
TM00728	2798	1033	298	145	11%	14%
TM00750	1775	584	141	59	8%	10%
TM00768	2895	984	252	109	9%	11%
TM00782	2087	833	521	281	25%	34%
TM00796	1781	661	104	51	6%	8%
TM00826	1926	687	89	39	5%	6%
TM00835	2883	1062	563	278	20%	26%
TM00851	3112	1034	413	175	13%	17%
TM00852	1690	752	314	201	19%	27%
TM00871	2593	842	162	70	6%	8%
TM00872	1264	531	319	190	25%	36%
TM00887	2164	645	221	82	10%	13%
TM00888	2825	1166	525	291	19%	25%
TM00907	2900	1111	573	291	20%	26%
TM00924	4836	1855	858	423	18%	23%
TM00946	3167	1127	279	130	9%	12%
TM00985	1258	433	123	54	10%	12%
TM01062	2282	791	145	60	6%	8%
TM01063	1174	460	240	124	20%	27%
TM01125	3769	1070	353	123	9%	11%
TM01126	1224	506	360	195	29%	39%
TM01155	3315	1062	102	40	3%	4%
Average					15%	19%

* ME-MS81 is a laboratory analysis technique considered a complete digestion of the sample material.

** ME-MS41W is a laboratory analysis technique described as a weak acid digest of the sample material. Results may indicate concentrations of weakly-bound ions or that of elements held within iron oxide mineral complexes.