

# Aton reports up to 89.5% Au recovery from initial scoping level metallurgical testwork at the Rodruin project

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VANCOUVER, Aug. 03, 2021 - [Aton Resources Inc.](#) (AAN: TSX-V) ("Aton" or the "Company") is pleased to update investors on the results of initial scoping level metallurgical testwork from its advanced Rodruin exploration project. Rodruin is located within the Company's 100% owned Abu Marawat Concession ("Abu Marawat" or the "Concession"), in the Eastern Desert of Egypt, see Figure 1.

## Highlights:

- 10 composite samples representing the range of mineralisation types at Rodruin (8 oxide zone and 2 sulphide zone) underwent scoping testwork. The samples were composited from reverse circulation percussion ("RC") drill hole samples;
- The 10 samples were subjected to whole ore cyanide leach tests on 'as is' received material *ie.* the samples did not undergo grinding. The test results showed final gold recoveries ranging between 51.4% and 84.2%, after 48 hours of leaching. Silver recoveries ranged from 25.7% to 65.8%;
- 4 samples were selected for additional fine grind whole ore leach tests. The data indicated higher gold and silver recoveries for the finely ground samples compared to their unground equivalents. The ROMO-132 sample showed the biggest increase in gold recovery in the finer sample with an increase of 26.6% gold, and 17.3% silver recovered compared to its unground equivalent. The biggest increase in silver recovered was 32.1% for the finely ground ROMO-129 sample compared to its unground equivalent;
- Gold recoveries from the 3 finely ground oxide samples ranged between 87.5% and 89.5%, with silver recoveries between 52.7% and 73.6%. The finely ground sulphide sample had gold and silver recoveries of 81.5% and 55.8% respectively;
- Whole ore cyanide leach tests indicate that all the Rodruin mineralisation types tested are treatable via conventional CIL.

*"These initial scoping level metallurgical testwork programme results from Rodruin are very encouraging," said Bill Koutsouras, Interim CEO and Chairman of the Board. "These results already indicate that all the different mineralisation styles at Rodruin, including both oxide and sulphide material, will be amenable to conventional CIL processing techniques. We are confident that we will be able to increase these recoveries by optimising the leaching conditions as we proceed, and indications of the presence of coarse gold from some samples both confirm our geological interpretation of the presence of high-grade zones at Rodruin, and suggest that we may be able to further optimise gold recoveries with the inclusion of a gravity circuit. Preparations for the upcoming diamond drilling programme at Rodruin and Hamama East are continuing apace with road and pad construction well underway, as well as the construction of the new Rodruin exploration camp. We envisage the next phase of metallurgical testwork will be undertaken once we have drill core available for testing."*

## Metallurgical testwork programme

A series of 10 samples were selected from the Rodruin mineral deposit for metallurgical testing, which were representative of the various mineralisation types encountered during the 2018 RC drilling programme (see news release dated December 5, 2018). Samples were collected onsite from the bagged reject portion of the RC drill samples, and were composited over 10m intervals, to produce individual samples weighing approximately 5kg. Details of the samples are provided in Table 1, and sample locations are shown in Figure 2. The coarse RC composite samples were dispatched from Egypt to Wardell Armstrong International Ltd ("WAI") in June 2021, for scoping level metallurgical testing at their Truro, UK laboratory.

Figure 1:

<https://www.globenewswire.com/NewsRoom/AttachmentNg/7d1baf08-1a81-46e7-80ea-92fe5a9162e6>

Metallurgical sample ID	Drill hole ID	Sample depth (m)		Zone	Original RC drill assay (ppm)				
		From	To		Au	Ag	Cu	Pb	Zn
ROMO-103	ROP-003	11	21	AH OXIDE	3.01	7.8	2302	1454	1980
ROMS-217	ROP-017	145	155	SULPHIDE	0.93	11.8	1660	126	32034
ROMO-129	ROP-029	0	10	SPZ OXIDE	5.25	14.8	804	342	435
ROMO-130	ROP-030	14	24	AH OXIDE	1.88	5.7	2046	1454	540
ROMO-132	ROP-032	12	22	CBZ OXIDE	2.00	27.9	173	203	1221
ROMO-133	ROP-033	35	45	CBZ OXIDE	1.67	8.1	20	20	321
ROMO-136	ROP-036	9	19	GFZ OXIDE	1.02	6.2	156	19	1314
ROMO-142	ROP-042	10	20	GFZ OXIDE	0.81	2.5	138	-	2440
ROMO-147	ROP-047	62	72	CBZ OXIDE	0.97	7.4	306	-	3879
ROMS-250	ROP-050	156	166	SULPHIDE	4.17	25.0	1590	-	20277

Table 1: Details of the metallurgical samples

10 bags weighing a total of 51.25kg were submitted to WAI for testing. 8 samples were selected representing the oxide mineralisation at Rodruin, with 2 samples from Aladdin's Hill ("AH"), 3 samples from the Central Buttress Zone ("CBZ"), 2 samples from the GF Zone ("GFZ") and 1 sample from the Spiral Pit Zone ("SPZ"). 2 samples were selected from the deeper sulphide mineralisation intersected in drilling to the northeast of Aladdin's Hill (see Table 1 and Figure 2).

The samples were submitted for a scoping level testwork programme consisting of head assays, XRD analysis, SEM analysis, whole ore cyanide leach testing, and particle size analysis.

Figure 2:

<https://www.globenewswire.com/NewsRoom/AttachmentNg/92ab9013-a2ee-4bf4-80ed-f6ef8c5c9c50>

## Head assays

The results of the head assays are shown below in Table 2:

Metallurgical sample ID	Assay (ppm)					Assay (%)			Original RC drill assay Au (ppm) <sup>2</sup>
	Au	Ag	Cu	Pb	Zn	As	Fe	S	
ROMO-103	3.20	12.2	2130	1620	1860	356	5.8	0.15	3.01
ROMS-217	0.86	11.4	1780	119	>10000 <sup>1</sup>	120	9.4	>10.0 <sup>1</sup>	0.93
ROMO-129	5.25	22.6	831	420	480	120	7.4	0.05	5.25
ROMO-130	1.70	8.6	1950	1500	625	67	4.5	0.07	1.88
ROMO-132	2.02	33.0	214	253	1330	11	16.0	0.10	2.00
ROMO-133	1.76	9.1	25	19	387	5	12.9	0.08	1.67
ROMO-136	0.82	5.4	61	19	1070	10	12.3	0.06	1.02
ROMO-142	0.79	2.7	127	208	2380	23	13.9	0.08	0.81
ROMO-147	0.94	18.3	346	767	4200	52	20.3	0.27	0.97
ROMS-250	3.53	22.9	1520	1480	>10000 <sup>1</sup>	540	11.5	>10.0 <sup>1</sup>	4.17

### Notes

- 1: Samples ROM-217 and ROMS-250 analysed above detection level for Zn and S, final assays pending
- 2: See also Table 1 for original Ag, Cu, Pb and Zn RC drill assay results

Table 2: Head assay results

The head assay results show good correlation with the original RC drill assay results (see Tables 1 and 2). The WAI gold head assays average 95% of the original RC drill assays (all 10 samples), the copper head

assays average 99% of the RC assays (10 samples), the lead head assays average 107% of the RC assays (7 samples), and the zinc head assays average 105% of the RC assays (8 samples). Only the silver head assays display a significant variation, averaging 132% of the original RC assays (10 samples).

The good correlation in assay results indicate that the c. 5kg composite samples submitted for metallurgical testwork are representative of the 10m mineralised intervals sampled.

#### Mineralogical analysis

The XRD results showed most of the samples as being gangue dominated. The ROMO-103/129/130 samples were mainly composed of quartz, containing between 82.0 - 87.5 weight percent ("wt%") quartz. The ROMO-132/133/136/142 samples were mostly composed of dolomite with iron oxides (hematite and goethite) present. The ROMO-147 sample contained a mixture of dolomite, iron oxides, illite and mica.

The XRD analysis confirmed the ROMS-217 and ROMS-250 samples to be highly pyritic, ranging from 21.9% to 22.6 wt% pyrite, reflecting the sulphide composition of the mineralisation sampled, in comparison to the oxide composition of the mineralisation in the other 8 samples. The bulk analysis showed the ROMS-217 sample to consist mostly of dolomite and subsidiary quartz, as well as the pyrite, whereas the ROMS-250 sample contained a mixture of dolomite, talc, quartz, barite and pyrite, confirming the geological logging of the drill samples.

The SEM analysis indicated that ROMS-217 contained 7.8 wt% sphalerite, and ROMS-250 contained 4.4 wt% sphalerite. Zinc was almost solely hosted within sphalerite, with zinc grades ranging from 4.9% zinc in ROMS-217 (*cf.* 3.2% from the original RC drill sample interval) to <0.1% in ROMO-103/129/132.

Copper grades were low across all the samples, and copper was found to mainly occur in chalcopyrite and sulphosalts, predominantly enargite, in the 2 sulphide samples, and in accessory copper phases in the oxide samples. The calculated SEM sulphur grades varied between <0.1 wt% in ROMO-103/129/132 to 18.7 wt% in ROMS-250. Sulphur was mainly hosted within sulphide phases (as well as barite and sulphosalts).

#### Whole ore cyanide leach tests

A series of whole ore leach tests was conducted on the unground 'as is' samples to investigate the amount of gold and silver that can be recovered from each sample by means of cyanide leaching. Additionally, 4 samples ROMO-103/129/132 and ROMS-217, underwent additional fine grinding prior to further leach testing. Results are summarised in Table 3 below.

The test results for the unground leached samples showed final gold recoveries to range from 51.4% (sample ROMO-136) to 84.2% (ROMO-147) after 48 hours of leaching. Silver recoveries ranged from 25.7% (sample ROMO-142) to 65.8% (ROMO-147). Leach kinetic profiles indicate that most of the samples were still leaching after 48 hours.

The results indicated higher gold and silver recoveries for the 4 samples ground to the finer particle size, compared to their unground sample equivalents. The ROMO-132 sample showed the biggest increase in gold recovery at the finer grind size, with an increase in gold and silver recoveries of 26.6% and 17.3%, respectively. The biggest increase in silver recovery was 32.1% for the finely ground ROMO-129 sample, compared to its unground equivalent.

The gold recoveries from the 3 finely ground oxide samples increased to 87.5%, 88.5% and 89.5%, with silver recoveries increasing to 52.7%, 60.7% and 73.6%. Gold and silver recoveries increased to 81.5% and 55.9% respectively, in the finely ground sulphide sample ROMS-217. Leach kinetics for the finely ground samples were much faster with the majority of samples showing leaching had terminated after 36 hours.

Metallurgical sample ID	Particle size - D <sub>80</sub> (?m)	Recovery after 48 hours (%)		Reagent consumption (kg/t)	
		Au	Ag	Lime	NaCN
ROMO-103	617	65.44	34.84	1.05	3.27
	71	87.51	52.69	0.53	3.27
ROMO-129	706	82.20	28.58	0.35	1.36
	68	88.51	60.73	0.49	1.24
ROMO-130	769	65.98	48.43	0.84	2.44
ROMO-132	619	62.91	56.29	1.03	1.96
	46	89.52	73.59	1.21	1.14
ROMO-133	650	77.83	54.61	0.93	2.15
ROMO-136	766	51.37	42.56	0.61	1.96
ROMO-142	621	75.41	25.68	0.53	1.69
ROMO-147	493	84.18	65.84	1.20	1.96
ROMS-217	582	77.37	53.21	1.32	1.78
	42	81.53	55.85	1.43	2.15
ROMS-250	499	80.89	63.2	1.74	3.16

Table 3: Whole ore cyanide leach test results

#### Discussion of results

The head assays of the c. 5kg composite samples tested correlate well with the original RC drill assays from the sampled intervals, and indicate that the samples are representative of the sampled intervals.

The mineralogical (SEM, XRD) analysis indicates that the samples can be sub-divided into 3 broad categories of mineralisation.

Samples ROMO-103 and ROMO-130 (Aladdin's Hill) and ROMO-129 (Spiral Pit Zone) are dominated by quartz (82.0-87.5%) with subsidiary phyllosilicate minerals (mica, paragonite, kaolinite, illite and chlorite), totalling 8.8-12.1%, and minor iron oxides (goethite, haematite), totalling 3.7-5.5%. These samples represent the strongly phyllic altered high grade mineralisation identified at Aladdin's Hill (drill hole ROP-003 intersected 36m @ 12.47 g/t Au, see news release dated October 2, 2018), and also the Spiral Pit Zone (drill hole ROP-029 intersected 20m @ 5.36 g/t, see news release dated December 10, 2018). Furthermore WAI (B. Simpson, *pers. comm.*) indicated that variability in the leach tail assays from sample ROMO-103 suggests the presence of coarse gold in the sample. These observations largely confirm Aton's geological interpretation of these areas, including the expected presence of coarse gold in these high grade zones.

Samples ROMS-217 and ROMS-250 are representative of the deeper primary polymetallic sulphide mineralisation (drill hole intersected 61m @ 1.55 g/t Au in pyritic carbonate rocks, see news release dated January 29, 2019). The mineralogical analysis indicated the sulphide mineralisation host rock to be composed predominantly of dolomite, with subsidiary quartz, talc, barite and gypsum, and >20% pyrite, plus subsidiary sulphides and sulphosalts, including sphalerite, galena, chalcopyrite and enargite, representing the base metal component of the mineralisation.

The remaining 5 samples ROMO-132, ROMO-133 and ROMO-147 (Central Buttress Zone) and ROMO-136 and ROMO-142 (GF Zone) represent near-surface zones of gossanous carbonate mineralisation. All 5 samples are composed predominantly of dolomite (28.7-76.5%), iron oxides (goethite and haematite, totalling 18.0-25.2%), and quartz. The mineralogical analysis appears to confirm Aton's interpretation that this gossanous carbonate mineralisation is a near-surface weathered expression of the deeper sulphide mineralisation.

The results of the whole ore cyanide leach tests are most encouraging. Apart from sample ROMO-136, which may be an outlier result due to the possible presence of coarse gold in vein quartz fragments in the sample (B. Simpson, *pers. comm.*), all samples returned gold recoveries in excess of 62.9% from the 'as is'

unground samples.

The gold recoveries from the 3 finely ground oxide samples (one selected from each of the Aladdin's Hill, Spiral Pit and Central Buttress Zones), increased on average from 70.2% to 89.5%, compared to the 'as is' unground samples, with consistently high gold recovery from each of these 3 zones.

The gold recovery from the finely ground sulphide sample ROMS-217, increased from 77.4% to 81.5%, compared to its 'as is' unground equivalent. The XRD (22.6% pyrite) and SEM analysis (37.8% total sulphides) both indicated this sample to be highly sulphidic. This gold recovery in excess of 80% is deemed to be very encouraging for such sulphide-rich material in a non-optimised leach environment.

These initial whole ore cyanide leach test results indicate that all the mineralisation types tested in this scoping level programme will be amenable to conventional CIL processing technology.

#### Exploration activity update

- Construction of the new exploration camp at Rodruin is well underway, and is expected to be completed in early September.
- 2 excavators started work onsite in early June and are undertaking drill road and pad construction at both the Rodruin and Hamama East projects, ahead of the upcoming diamond drill programme (see news release dated June 14, 2021).

#### About Aton Resources Inc.

[Aton Resources Inc.](#) (AAN: TSX-V) is focused on its 100% owned Abu Marawat Concession ("Abu Marawat"), located in Egypt's Arabian-Nubian Shield, approximately 200 km north of Centamin's world-class Sukari gold mine. Aton has identified numerous gold and base metal exploration targets at Abu Marawat, including the Hamama deposit in the west, the Abu Marawat deposit in the northeast, and the advanced Rodruin exploration prospect in the south of the Concession. Two historic British gold mines are also located on the Concession at Sir Bakis and Semna. Aton has identified several distinct geological trends within Abu Marawat, which display potential for the development of a variety of styles of precious and base metal mineralisation. Abu Marawat is 447.7 km<sup>2</sup> in size and is located in an area of excellent infrastructure; a four-lane highway, a 220kV power line, and a water pipeline are in close proximity, as are the international airports at Hurghada and Luxor.

#### Note Regarding Forward-Looking Statements

Some of the statements contained in this release are forward-looking statements. Since forward-looking statements are subject to uncertainties, actual results in each case could differ materially from those currently anticipated in such statements.

Neither TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in policies of the TSX Ven

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