



ASX/Media Release – 01 June 2017

Independent Testwork Confirms High Gold Grades and Recoveries at Cascavel Gold Mine

Evaluation of underground ore samples returns head grades of up to 48.7g/t Au

Key Points:

- **Successful testwork programme undertaken by Hazen Research Inc.**
- **Results provide independent Validation of high-grade nature of the Cascavel lode system.**
- **Confirmation that Cascavel ore is highly (>90%) amenable to gravity recovery.**
- **Verification of the efficiency of the existing Cascavel processing plant.**

Orinoco Gold Limited (ASX: OGX) (**Orinoco** or **Company**) is pleased to advise that it has received the results of a highly successful metallurgical test work program conducted by Hazen Research Incorporated (**Hazen**), which provides independent confirmation of the high-grade nature of the quartz vein lode system at its Cascavel Gold Mine (**Cascavel**) in Brazil and the amenability of the ore to gravity processing.

Hazen is an independent research and development firm located in Golden, Colorado, USA which provides process research and development services to the extractive metallurgy industry.

Following the suspension of operations at the Cascavel in Q4 2016, Orinoco contracted Hazen to evaluate:

- two (2) underground gold ore samples (from both the northern and southern areas of the Cascavel mine) to confirm both the gold content of the Cascavel system and the gravity recoverability of the gold within the system; and
- two (2) samples of tailings material from the Cascavel processing plant tailings storage facility (**TSF**) to verify gold recoveries.

The opportunity was also taken to undertake preliminary assessment of the leachability of the Cascavel ore with a view to the possible future addition of a leaching circuit to the Cascavel processing plant.

The Gravity Recoverable Gold (**GRG**) evaluation showed that 98–99% of the gold in the underground samples could be recovered into 2–3% of the weight. The process plant tailings showed that 92–94% of the gold could be recovered into approximately 3% of the weight.

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ASX Code

OGX
(Ordinary Shares)
OGXOC & OGXOD
(Listed Options)

Issued Capital

497,635,459 Ordinary Shares
265,592,401 Options

Gold recoveries were 95–99% for the underground samples for both CIL and non-CIL cyanidation with the process plant tailings samples also being amenable to cyanide leaching and showed gold extractions of greater than 71% (the residues from these leaches showed gold concentrations below the detection of gravimetric fire assay).

Hazen concluded that “***all four samples evaluated were highly amenable to gravity concentration of the gold***” and that “***these samples were also highly amenable to cyanide leaching***”.

Orinoco’s Chief Executive Officer, Mr Craig Dawson, said; “*These results confirm both the Company’s previous metallurgical testwork programmes and the applicability of the design of the existing processing plant as we progress our plan to re-commence production at Cascavel. This gives us confidence in the other improvements we are implementing at Cascavel, particularly the revised mining strategy we have outlined, which is aimed at reducing dilution (and thus increasing the head grade) and increasing productivity*”.

Samples

The samples provided to Hazen for analysis, comprised:

- two (2) x 100kg underground samples (3934-79 and 3934-80); and
- two (2) x 75kg tailings samples from the process plant TSF (3934-81 and 3934-82).

The evaluation consisted of sample preparation, grade analysis, gravity recoverable gold (**GRG**) determination, and cyanide leaching.

Grade Determination

Grade determinations were carried out on each of the samples (see Table 1) with the test work programme confirming the high-grade nature of the Cascavel lode system with both the underground samples returning exceptionally high head grades:

Sample 3934-79 (HRI # 54742-1) Head Grade = 37.1 g/t Au

Sample 3934-80 (HRI # 54742-2) Head Grade = 48.7 g/t Au.

The assays of the process plant tailings samples confirmed that the Cascavel processing plant was recovering gold from the feed and not losing excessive gold to the tails:

Sample 3934-81 (HRI # 54742-3) Grade = 0.9 g/t Au

Sample 3934-82 (HRI # 54742-4) Grade = 1.6 g/t Au.

Table 1: Samples Received and Head Grade Analysis

HRI Number	Sample Description	Analyte	Au	Ag	C ^{tot}	CO ₃ ²⁻	C ^{org}	S ^{tot}	SO ₄ ²⁻	S ²⁻
		Method	GRG ^a	Fire Assay	LECO	Coulometric	Difference	LECO	Gravimetric	Difference
		Units	ppm	ppm	%	%	%	%	%	%
54742-1	Underground INT-1 BLK	Replicate 1	37.1	<1.5	0.01	<0.01	0.01	0.10	<0.08	0.10
		Replicate 2	na	2.92	0.01	0.06	0.00	0.11	<0.08	0.11
		Replicate 3	na	<1.5	0.02	0.06	0.01	0.10	<0.08	0.10
		Average	37.1	1.97	0.01	0.04	0.01	0.10	<0.08	0.10
54742-2	Underground L2S-SLOT4 BLK	Replicate 1	48.7	1.69	0.02	0.03	0.01	0.10	<0.08	0.10
		Replicate 2	na	<1.5	0.02	0.04	0.01	0.11	<0.08	0.11
		Replicate 3	na	<1.5	0.02	0.04	0.01	0.11	<0.08	0.11
		Average	48.7	1.56	0.02	0.04	0.01	0.11	<0.08	0.11
54742-3	Knelson Tailings B-Sample01	Replicate 1	0.9	<1.5	0.04	0.03	0.03	0.11	<0.08	0.11
		Replicate 2	na	<1.5	0.03	0.03	0.02	0.11	<0.08	0.11
		Replicate 3	na	<1.5	0.05	0.06	0.04	0.10	<0.08	0.10
		Average	0.9	<1.5	0.04	0.04	0.03	0.11	<0.08	0.11
54742-4	Knelson Tailings B-Sample02	Replicate 1	1.6	<1.5	0.05	0.03	0.04	0.11	<0.08	0.11
		Replicate 2	na	<1.5	0.04	0.05	0.03	0.11	<0.08	0.11
		Replicate 3	na	<1.5	0.05	0.06	0.04	0.10	<0.08	0.10
		Average	1.6	<1.5	0.05	0.05	0.04	0.11	<0.08	0.11

Gravity Recoverable Gold Test Work

It is generally considered, and accepted, that an exceptionally amenable GRG sample will have a cumulative GRG value of over 80%, and each of the four Orinoco samples had a cumulative GRG value of over 90% (Table 2 summarises the GRG results).

Both underground samples showed high gold recoveries in a small fraction of the weight. The process plant tailings samples had significantly lower gold concentrations than the underground samples, but were still amenable to gravity concentration.

Figure 1 shows the cumulative gold recovery as a function of grind size for all four samples.

Table 2: Summary of Gravity Recoverable Gold Results

Experiment	HRI Number	Sample Description	P ₈₀ , µm			Product	Weight, %	Analysis Au, g/t	Au Distribution, %	
			Pass 1	Pass 2	Pass 3				Direct	Cumulative
3934-79	54742-1	Underground INT-1 BLK	490	258	114	Concentrate 1	0.8	4,290	90.1	90.1
						Concentrate 2	0.7	336	6.5	96.6
						Concentrate 3	0.7	67.9	1.3	97.9
						Total concentrate	2.2	1,669	97.9	97.9
						Tails 3	97.5	0.79	2.1	2.1
						Calculated head	100	37.1	100	100
3934-80	54742-2	Underground L2S-SLOT4 BLK	457	250	87	Concentrate 1	0.8	5,420	88.4	88.4
						Concentrate 2	0.7	600	8.8	97.2
						Concentrate 3	1.5	53.8	1.7	98.8
						Total concentrate	3	1,605	98.8	98.8
						Tails 3	96.2	0.59	1.2	1.2
						Calculated head	100	48.7	100	100
3934-81	54742-3	Knelson Tailings B-Sample01	508	226	97	Concentrate 1	0.8	58	55.7	55.7
						Concentrate 2	0.9	12	12.5	68.2
						Concentrate 3	1.2	17	24.0	92.2
						Total concentrate	2.9	27	92.2	92.2
						Tails 3	96.4	0.07	7.8	7.8
						Calculated head	100	0.9	100	100
3934-82	54742-4	Knelson Tailings B-Sample02	530	162	110	Concentrate 1	1	53	32.1	32.1
						Concentrate 2	0.9	103	57.8	89.9
						Concentrate 3	0.9	8	4.6	94.5
						Total concentrate	2.7	56	94.4	94.4
						Tails 3	96.9	0.09	5.6	5.6
						Calculated head	100	1.6	100	100

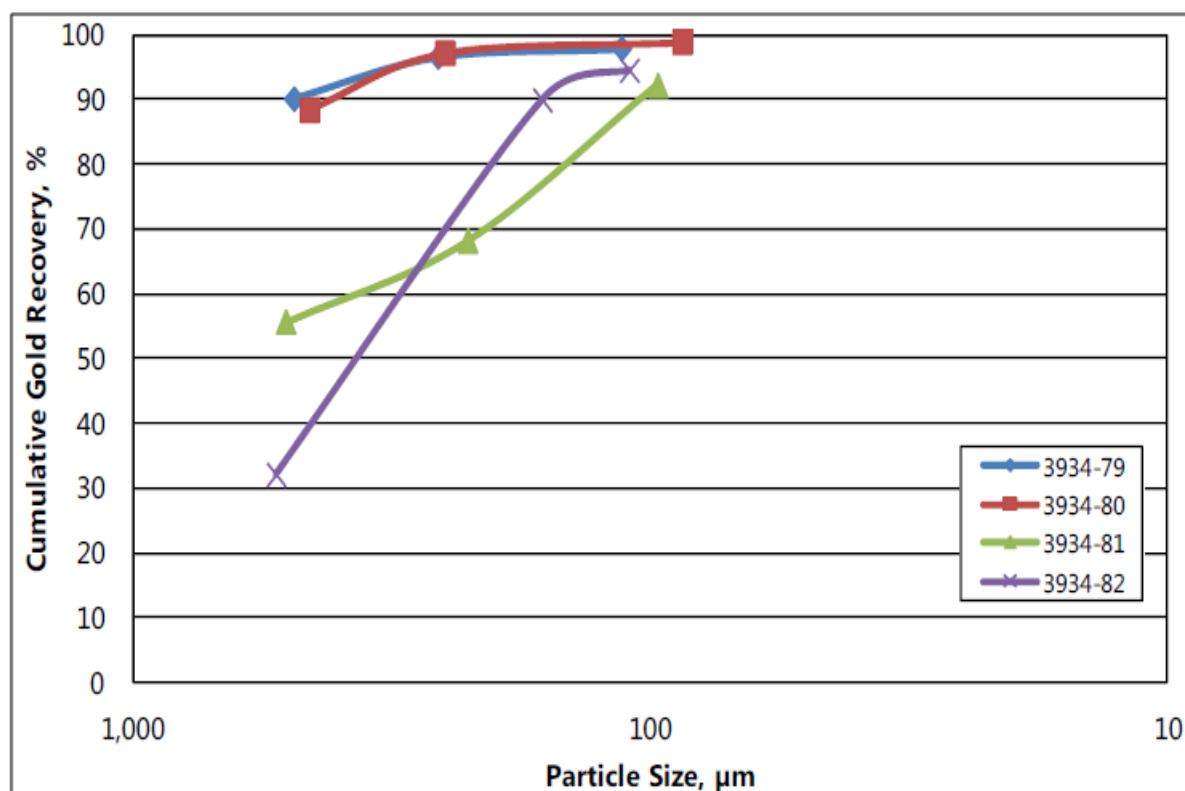


Figure 1: Cumulative Gold Recovery as a Function of Grind Size

Cyanide Leaching

Both carbon in leach (CIL) and non-CIL cyanide leaches were performed on each sample. Table 3 summarises the CIL and non-CIL cyanide leach results.

Gold extractions were high for all samples and ranged from 95 to 99% for the underground samples. Gold extractions were also high for the two process plant tailings samples, but were more difficult to quantify because the gold concentrations in the cyanide leach tails were below the fire assay detection limit. The two process plant tailings samples showed gold extractions greater than 71% for both CIL and non-CIL cyanide leaching.

Table 3: Summary of CIL and Non-CIL Cyanide Leach Results

Book	Feed ID	Leach Type	Reagent Consumption, kg/t		Au Analysis, ppm		Au Extraction, %
			CaO	NaCN	Head	Tail	
3309-120	Underground INT1-BLK	Non-CIL	0.57	0.12	37.1	0.45	98
3309-121	Underground L2S-SLOT4-BLK	Non-CIL	0.34	0.15	48.7	2.02	95
3309-122	Knelson Tailings B-Sample01	Non-CIL	0.30	0.08	0.9	<0.2	>81
3309-123	Knelson Tailings B-Sample02	Non-CIL	0.34	0.09	1.6	<0.2	>81
3901-124	Underground INT1-BLK	CIL	0.95	3.4	37.1	1.27	97
3901-125	Underground L2S-SLOT4-BLK	CIL	0.68	3.3	48.7	0.21	99
3901-126	Knelson Tailings B-Sample01	CIL	0.45	3.3	0.9	<0.2	>82
3901-127	Knelson Tailings B-Sample02	CIL	0.38	3.4	1.6	<0.2	>71

The full Hazen report will be available on the Orinoco website.

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