

# Arizona Sonoran Updates on ASCU-led Metallurgical Programs

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## Highlights:

- Terminated Stockpile oxide columns in 90-day cycle indicates 90% recoveries after 60 days, pending final residue analysis
- Preliminary results from Parks/Salyer enriched columns after 160 days demonstrate recoveries of approximately 80%
- Current metallurgical programs will feed into both the pending PFS (1Q24), and FS (2H24)
- Hydrodynamic testing supports multi-lift leach pads
- Post-refurbishment, TruStone Facility now hosts a sample prep lab, 12 metallurgical columns and a core storage facility

[Arizona Sonoran Copper Company Inc.](#) (TSX:ASCU | OTCQX:ASCUF) ("ASCU" or the "Company") an emerging US-based copper developer and near-term producer, provides an update on metallurgy and improvements to the TruStone Facility ("TruStone"). ASCU continues to improve metallurgical recoveries through ongoing Pre-Feasibility ("PFS") and Feasibility Study ("FS")-level columns located onsite and in TruStone. The 90-day Stockpile oxide cycle is now complete with 90% recoveries of each column's head grade. Preliminary results from the Parks/Salyer enriched columns after 160 days are tracking to approximately 80% recovery. Samples for each of the TruStone columns were sent to HydroGeoSense Inc. ("HGS") and Skyline Lab for sequential copper and total copper analysis. The metallurgical programs are overseen by Dan Johnson, ASCU Projects Director and QP'd by Samuel Engineering.

Dan Johnson, ASCU Projects Director commented, "The completed Stockpile oxides recoveries and highly encouraging preliminary Park/Salyer enriched recoveries continue to build on and improve our metallurgical understanding of the Cactus and Parks/Salyer deposits. With the Stockpile oxides performing at ~90% recoveries and Parks/Salyer enriched at ~80%, we see an improvement over the PEA programs after only 60 and 160 days, respectively, in comparison to the Cactus deposit. We note the metallurgy from the two deposits respond quite similarly to the raffinate which should support future economies of scale while conducting mine sequencing and planning for the PFS."

## TruStone Building Improvements:

Refurbishment of the TruStone Facility (see IMAGE 1) is near completion. TruStone, a former factory located between the Parks/Salyer and Cactus deposits and accessed by the paved access road will also serve as an auxiliary building to support the future Solvent Extraction/Electrowinning ("SX/EW") plant, as outlined in the PEA. It now accommodates 12, 20 ft (6 m) columns for PFS and FS-level metallurgical programs with the potential to install an additional three columns and for conversion to 30 ft (9 m) columns, as required (IMAGE 2), an onsite full-scale sample preparation lab with five crusher stations (IMAGE 3) and also serves as a main core storage facility (IMAGE 4).

The electrical upgrades are nearly complete, and connection is expected in May, post-Arizona Public Service inspection. Outside, the surrounding areas have been cleared, doors have been repaired or replaced and all openings in the building exterior have been repaired. Inside, new and used core shelving units have been assembled and core boxes are being relocated and stacked in the west side of TruStone.

## Metallurgy and Hydrodynamic Testing Program - Oxide, Enriched, Stockpile Material

Samples from Cactus, Parks/Salyer and the Stockpile were prepped and composited for both the Prefeasibility and Feasibility Study metallurgical testwork program within TruStone. Samples for each of the TruStone columns were sent to HydroGeoSense Inc. ("HGS") and Skyline Lab for sequential copper and

total copper analysis. TABLE 1 below illustrates results from initial head grade assaying from recently loaded columns. Results from Skyline Lab are still pending.

#### PARKS/SALYER - ENRICHED (SECONDARY SULPHIDE) COLUMNS

Three 6-inch (15 cm) enriched columns loaded with crushed minus 1-inch (25 mm) p80 non-agglomerated multiple copper grade material from Parks/Salyer enriched material, with preliminary recoveries tracking to approximately 80% after 160 days. Particle size distribution analysis showed favorable results with a low fines content. These columns continue to be ran with 4 g/L raffinate feed solution at 3 to 4 L/hm<sup>2</sup>, with no forced aeration into the 20 ft (6 m), 6-inch (15 cm) column. Solution temperatures have been continuously monitored and range between 15°C to 20°C. Columns have been equipped with evaporation reduction measures. Preliminary results are shown in FIGURE 1.

Material was gathered from Park/Salyer core holes SE-16, SE-17 and SE-18 and subsequently separated into three different grades (low, medium, and high). Mineralogical and bacteria samples were collected and have been submitted to qualified laboratories for analysis. Initially, low net sulphuric acid ("H<sub>2</sub>SO<sub>4</sub>") consumption is experienced and within a few weeks, the columns begin generating H<sub>2</sub>SO<sub>4</sub>. The generation of H<sub>2</sub>SO<sub>4</sub> in the enriched materials benefits future project sequencing.

#### STOCKPILE - OXIDE COLUMNS

Three multiple calcium content materials were crushed to minus 3-inch (7.6 cm) and cured with 2.2 lbs-g/ton acid and subsequently loaded into 8-inch (20 cm) 20 ft (6m) columns. An application rate of 6 L/hm<sup>2</sup> of 6 g/L acid was applied to each column. After only 60 days, results indicated average preliminary calculated recoveries of approximately 90% and average gross H<sub>2</sub>SO<sub>4</sub> consumption of 22 lb/t.

An initial concentration of 6 g/L of acidified raffinate was applied at start up and then adjusted down to 4 g/L after 30 days to the three above columns. These columns continue to be ran with 4 g/L raffinate feed solution at 6L/day. Solution temperatures have been continuously monitored and range typically from 15°C to 20°C. Solution samples are being collected initially on a daily and now weekly basis for analyses. Results are shown in FIGURE 2.

Copper recoveries were derived from laboratory head grades from the entire length core material selected for each column. Composite head grade pulps were sent to Skyline Lab and HGS for analysis. All three columns were terminated in mid-March, due to depleted copper concentrations. Final metallurgical performance estimates will require analysis of the column residues to confirm the head grade based recovery estimates.

#### Hydrodynamic Testing

ASCU retained HydroGeoSense, Inc. (HGS) to conduct a preliminary hydrodynamic characterization of samples from their Cactus and Parks/Salyer deposits to determine the feasibility of a multi-lift heap operation. The results of this study illustrate a competent multi-lift operation with sufficient percolation capacity from the Cactus and Park/Salyer deposits when crushed to a top size of minus 1.25-inch (30 mm).

Specifically, the porosity graphs as a function of heap height (profile) presented in FIGURE 3 indicate that the Cactus and Parks/Salyer material samples, prepared to an intermediate level of agglomeration (L2), would maintain a total porosity larger than 30% (horizontal red line) for heap heights larger than 184 ft (56 m) (seven, 26 ft (8 m) lifts). Additionally, the percolation capacity (saturated hydraulic conductivity) of these samples illustrated in FIGURE 4 is more than adequate to support irrigation rates of 6 L/h/m<sup>2</sup> (horizontal red line) or larger for heap heights taller than 210 ft (64 m).

#### Ongoing Column Leach Testing

In addition to the three ongoing Parks/Salyer columns, nine new PFS and FS columns have been prepared in 6-inch (15 cm) columns with material from both the Cactus (enriched and oxide) and Parks/Salyer

(enriched) deposits. The particle size distribution and head sample assays (TABLE 1 below) have been completed for two oxide and seven different secondary mixed rock-type sulfide (enriched) copper grade materials. Based on the particle size distribution analyses, materials have been crushed at minus 1 inch (25 mm) (3 columns) or minus 1.25 inch (30 mm) (4 columns), p80 size for the column testing.

Table 1 - New PFS/FS Column Head Assay Results (HGS)

Assay # Sample Description	Sequential Copper Assays			Total Copper	
	AS	CNS	Residue	Calculated Cut Head CuT	
	Cu %	Cu %	Cu %		
7378 Column 5 Head Composite (Oxide/Enriched Blend)	0.32	0.21	0.02	0.56	0.53
7379 Column 6 Granite Head Composite (Oxide)	1.68	0.04	0.03	1.75	1.82
7380 Column 6 Monzonite Head Composite (Oxide)	1.05	0.25	0.01	1.32	1.31
7549 Column 7 Granite Head Composite (Enriched)	0.13	1.22	0.01	1.36	1.31
7549D Column 7 Granite Head Composite (Duplicate)	0.13	1.16	0.01	1.31	1.26
7381 Column 8 & 9 Monzonite Head Composite (Enriched)	0.15	0.24	0.08	0.46	0.48
7550 Column 9 Granite Head Composite (Enriched)	0.12	0.75	0.01	0.88	0.88
7547 Column 10 Granite Head Composite (Enriched)	0.23	2.13	0.02	2.38	2.40
7548 Column 10 Monzonite Head Composite (Enriched)	0.22	0.64	0.02	0.88	0.83
7373 Park Salyer Low Grade Head Composite (Enriched)	0.10	0.57	0.01	0.68	0.67
7374 Park Salyer Mod Grade Head Composite (Enriched)	0.14	1.61	0.01	1.76	1.71
7551 Park Salyer High Grade Head Composite (Enriched)	0.16	2.41	0.01	2.58	2.52

The 4-30 mm columns have been agglomerated with either 5 or 7.5 g/L of sulfuric acid. Low-pressure (near ambient) aeration systems have been installed to optimize bacteria growth during the leaching period. Additionally, the columns continue to be equipped with measures to minimize potential losses from evaporation and control solution temperatures. ASCU ran particle size distribution and sequential assays on the remaining specified collected materials and continues to review and select materials from both Cactus and Parks/Salyer metallurgical core holes. The selected materials loaded in the initial Parks/Salyer materials were crushed to the initial minus 1.25-inch (30 mm) p80 based on low, moderate and high-grade ranges. The higher grades include a moderate to high presence of chalcocite, covellite, chalcopyrite and other less abundant copper bearing mineralogical species. Mature solutions from the previous PFS columns that have been or are nearly completed were obtained to begin the leaching process (presence residual acid and bacteria), which shall accelerate the dissolution of copper. The current raffinate application rates are slightly below 3L/day of 6 g/L mature raffinate for these smaller 6-inch (15 cm) columns and 6L/day of 6 g/L mature raffinate for the 8-inch (20 cm) columns.

Ongoing testing to optimize the crushing size is expected to improve the samples' mechanical and hydrodynamic performance and enhance the metallurgical performance of the leaching process. Overall, ASCU and HGS are pleased with these findings of this preliminary study and continue to work in the development of an even more efficient and effective leaching process.

Initial 2022 metallurgical studies involving the Stockpile and Cactus deposit materials were completed at McClelland Laboratories within the last few months and final reports are being prepared. Final reports for the columns at TruStone will be prepared by Samuel Engineering, who will also draft final reports for the recent terminated stockpile oxide and the initial Parks/Salyer enriched columns when completed at the end of June.

Links from the Press Release:

Figures and Images: <https://arizonasonoran.com/projects/cactus-mine-project/press-release-images>

#### Qualified Persons Statement

Technical aspects related to the metallurgical program of this news release have been reviewed and verified by James L. Sorensen - FAusIMM Reg. No. 221286 with Samuel Engineering, who is a qualified person as defined by National Instrument 43-101- Standards of Disclosure for Mineral Projects. The indicative metallurgical information presented describes preliminary results from testing that is currently in progress and subject to confirmation. Final metallurgical performance estimates will require decommissioning of the columns and analysis of the column residues.

Neither the Toronto Stock Exchange nor the regulating authority has approved or disapproved the information contained in this press release.

About Arizona Sonoran Copper Company ([www.arizonasonoran.com](http://www.arizonasonoran.com) | [www.cactusmine.com](http://www.cactusmine.com))

ASCU's objective is to become a mid-tier copper producer with low operating costs and to develop the Cactus and Parks/Salyer Projects that could generate robust returns for investors and provide a long term sustainable and responsible operation for the community and all stakeholders. The Company's principal asset is a 100% interest in the Cactus Project (former ASARCO, Sacaton mine) which is situated on private land in an infrastructure-rich area of Arizona. Contiguous to the Cactus Project is the Company's 100%-owned Parks/Salyer deposit that could allow for a phased expansion of the Cactus Mine once it becomes a producing asset. The Company is led by an executive management team and Board which have a long-standing track record of successful project delivery in North America complemented by global capital markets expertise.

#### Forward-Looking Statements

Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of ASCU to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Factors that could affect the outcome include, among others: future prices and the supply of metals; the results of drilling; inability to raise the money necessary to incur the expenditures required to retain and advance the properties; environmental liabilities (known and unknown); general business, economic, competitive, political and social uncertainties; results of exploration programs; accidents, labour disputes and other risks of the mining industry; political instability, terrorism, insurrection or war; or delays in obtaining governmental approvals, projected cash operating costs, failure to obtain regulatory or shareholder approvals.

Although ASCU has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results to differ from those anticipated, estimated or intended. Forward-looking statements contained herein are made as of the date of this news release and ASCU disclaims any obligation to update any forward-looking statements, whether as a result of new information, future events or results or otherwise, except as required by applicable securities laws.

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