

# **HACKBERRY PATENTED MINE PROPERTIES**

**MOHAVE COUNTY, ARIZONA, USA**

## **NI 43-101 PRE-FEASIBILITY (PFS) REPORT**



Prepared for

**Silver Ore Gold, LLC**

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**DATE AND SIGNATURE PAGE**

The effective date of this PFS entitled “Hackberry Patented Mine Properties, Mohave County, Arizona, USA, NI 43-101 PFS,” is March 06, 2026.



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Date: March 15, 2026

|                                                                                       |     |
|---------------------------------------------------------------------------------------|-----|
| DATE AND SIGNATURE PAGE .....                                                         | iii |
| 1.0 SUMMARY .....                                                                     | 1   |
| 1.1 Introduction.....                                                                 | 1   |
| 1.2 Project Location and Ownership .....                                              | 1   |
| 1.3 Geology and Mineralization .....                                                  | 1   |
| 1.4 History and Exploration.....                                                      | 2   |
| 1.5 Mineral Resource Estimate.....                                                    | 2   |
| 1.6 Mineral Reserve Estimate.....                                                     | 5   |
| 1.7 Mining Methods.....                                                               | 6   |
| 1.8 Mineral Processing .....                                                          | 6   |
| 1.9 Economic Analysis .....                                                           | 7   |
| 1.10 Conclusions and Recommendations .....                                            | 8   |
| 1.10.1 Drilling.....                                                                  | 8   |
| 1.10.2 Metallurgy.....                                                                | 8   |
| 1.10.3 Mining.....                                                                    | 8   |
| 2.0 INTRODUCTION .....                                                                | 10  |
| 2.1 Issuer and Terms of Reference.....                                                | 10  |
| 2.2 Qualified Person .....                                                            | 10  |
| 2.3 Sources of Data for PFS .....                                                     | 10  |
| 2.4 Details of Inspection .....                                                       | 10  |
| 2.5 Units of Measure.....                                                             | 10  |
| 3.0 RELIANCE ON OTHER EXPERTS .....                                                   | 11  |
| 4.0 PROPERTY DESCRIPTION AND LOCATION.....                                            | 13  |
| 4.1 Property Location .....                                                           | 13  |
| 4.2 Property Description and Ownership.....                                           | 13  |
| 4.4 Environmental Liabilities .....                                                   | 15  |
| 4.5 Permitting .....                                                                  | 15  |
| 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND<br>PHYSIOGRAPHY ..... | 16  |
| 5.1 Access .....                                                                      | 16  |
| 5.2 Physiography .....                                                                | 16  |
| 5.3 Local Resources and Infrastructure .....                                          | 17  |
| 6.0 HISTORY .....                                                                     | 18  |
| 6.1 Pre-1926.....                                                                     | 18  |
| 6.2 1958 to Present .....                                                             | 22  |
| 6.3 Historic Mineral Resources .....                                                  | 23  |
| 7.0 GEOLOGICAL SETTING AND MINERALOGY.....                                            | 24  |
| 7.1 Regional Geology .....                                                            | 24  |
| 7.2 Hackberry Property Geology .....                                                  | 25  |
| 7.3 Structure.....                                                                    | 27  |
| 7.4 Alteration .....                                                                  | 27  |
| 7.5 Significant Mineralized Zones.....                                                | 28  |
| 7.6 Metal Zoning .....                                                                | 33  |
| 7.7 Metal Zoning .....                                                                | 33  |
| 8.0 DEPOSIT TYPE .....                                                                | 34  |

|                                                                                |    |
|--------------------------------------------------------------------------------|----|
| Characteristic features of the mineralized zones of the Hackberry deposit..... | 35 |
| 9.0 EXPLORATION.....                                                           | 35 |
| 10.0 DRILLING .....                                                            | 36 |
| 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY .....                           | 38 |
| 12.0 DATA VERIFICATION.....                                                    | 38 |
| 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING .....                        | 38 |
| 14.0 MINERAL RESOURCE ESTIMATE .....                                           | 40 |
| 14.1 Factors that may affect the Mineral Resource Estimate .....               | 45 |
| 15.0 MINERAL RESERVE ESTIMATE .....                                            | 46 |
| 16.0 MINING METHODS .....                                                      | 46 |
| 16.1 Mine Design.....                                                          | 46 |
| 16.2 Production Schedule .....                                                 | 47 |
| 17.0 RECOVERY METHODS.....                                                     | 48 |
| 18.0 PROJECT INFRASTRUCTURE .....                                              | 49 |
| 18.1 Planned Infrastructure.....                                               | 49 |
| 18.1.1 Office, Mine Shop, Warehouse & Storage, & Lab/Change House Area .....   | 49 |
| 18.1.3 Power .....                                                             | 51 |
| 18.1.4 Water.....                                                              | 51 |
| 18.2 General Sitework .....                                                    | 52 |
| 18.2.1 Roads .....                                                             | 52 |
| 18.2.2 Site Drainage.....                                                      | 52 |
| 18.2.3 Fencing.....                                                            | 52 |
| 18.3 Archeological .....                                                       | 52 |
| 18.4 Waste Disposal.....                                                       | 52 |
| 18.4.1 Hazardous Waste .....                                                   | 52 |
| 18.4.2 Sewage.....                                                             | 53 |
| 18.5 Transportation .....                                                      | 53 |
| 19.0 MARKET STUDIES AND CONTRACTS.....                                         | 54 |
| 20.0 ENVIRON STUDIES, PERMITTING, & SOCIAL OR COMMUNITY IMPACT .....           | 54 |
| 21.0 CAPITAL AND OPERATING COSTS.....                                          | 57 |
| 21.1 Capital Cost Estimate .....                                               | 57 |
| 21.1.1 Introduction.....                                                       | 57 |
| 21.1.2 Basis of Estimate .....                                                 | 57 |
| 21.1.3 Direct Costs .....                                                      | 57 |
| 21.2 Sustaining Capital.....                                                   | 58 |
| 21.3 Working Cost .....                                                        | 59 |
| 21.4 Initial Fills.....                                                        | 59 |
| 21.5 Operating Costs .....                                                     | 59 |
| 22.0 ECONOMIC ANALYSIS.....                                                    | 60 |
| 22.1 BASIS OF ANALYSIS.....                                                    | 60 |
| 22.2 ECONOMIC MODEL PARAMETERS .....                                           | 60 |
| 22.3 SENSITIVITY ANALYSIS .....                                                | 62 |
| 22.4 COST AND RECOVERY .....                                                   | 62 |
| 22.5 PROJECT TIMELINE.....                                                     | 63 |
| 22.6 CONCLUSION.....                                                           | 63 |
| 23.0 ADJACENT PROPERTIES.....                                                  | 64 |

|                                                                       |    |
|-----------------------------------------------------------------------|----|
| 24.0 OTHER RELEVANT DATA AND INFORMATION .....                        | 66 |
| 25.0 INTERPRETATIONS AND CONCLUSIONS .....                            | 66 |
| 26.0 RECOMMENDATIONS .....                                            | 69 |
| 27.0 REFERENCES .....                                                 | 70 |
| Appendix A Certification .....                                        | 72 |
| Appendix B Abbreviations, Terms, Acronyms, & Metric Conversions ..... | 74 |
| METRIC CONVERSION FACTORS (divide by) .....                           | 78 |
| APPENDIX C Claims.....                                                | 79 |
| Appendix D Flow Circuit Diagrams.....                                 | 80 |
| Figure C-2 Process Flow – Flotation Circuit.....                      | 81 |
| Figure C-3 Process Flow WOL .....                                     | 82 |
| Appendix D Full Scan Assay Results from Vesta Minerals.....           | 83 |

### **List of Figures**

|             |                                                                                                         |
|-------------|---------------------------------------------------------------------------------------------------------|
| Figure 4.1  | Location of the Hackberry Properties, Mohave County, AZ                                                 |
| Figure 4.2  | Outline of Mining Claims, Hackberry Properties, Mojave County, AZ                                       |
| Figure 4.3  | Tailings Piles on the South Hackberry Mine, Mojave County, AZ                                           |
| Figure 5.1  | Typical Topography and Physiography, Hackberry Properties, Mojave Cty., AZ                              |
| Figure 6.1  | Map of Underground Development, “Old” Hackberry Mine, Mojave Cty., AZ                                   |
| Figure 7.1  | Regional Geology, Peacock Mountains, Mojave County, AZ                                                  |
| Figure 7.2  | Hackberry Property Geologic Map, Mojave County, AZ                                                      |
| Figure 7.3  | Fractured and Locally Brecciated “Granitic” Gneiss near the North Hackberry Mine                        |
| Figure 7.4  | Strongly Jointed and Fractured “Granitic” Gneiss near the North Hackberry Mine                          |
| Figure 7.5  | Geochemical Sample Locations, Hackberry Properties, Mojave County, AZ                                   |
| Figure 7.6  | Silver Analyses for Select Samples, Hackberry Properties, Mojave County, AZ                             |
| Figure 7.7  | Lead Analyses for Select Samples, Hackberry Properties, Mojave County, AZ                               |
| Figure 7.8  | Zinc Analyses for Select Samples, Hackberry Properties, Mojave County, AZ                               |
| Figure 9.1  | Exploration Drill Target Areas of Malkoski (1985), Hackberry Properties                                 |
| Figure 10.1 | Recent Core Drilling Results                                                                            |
| Figure 14.1 | Mag Survey Showing Potential Indicated and Inferred Resources                                           |
| Figure 14.2 | Satellite Trace of Ore Shoots/Veins, Hackberry Properties, Mojave Cty., AZ                              |
| Figure 23.1 | Wallapai District with Hackberry Property Location, Mohave County, Arizona                              |
| Figure 25.1 | Target Areas with Potential for Undiscovered Mineral Resources, Hackberry Properties, Mohave County, AZ |

### **List of Tables**

|            |                                                                          |
|------------|--------------------------------------------------------------------------|
| Table 1.1  | Valuation of the Hackberry Patented Properties                           |
| Table 1.2  | Resource Metals (Ounces and Grades) at the Hackberry Patented Properties |
| Table 1.3  | Production Schedule and Cash Flow for the Hackberry Mine                 |
| Table 1.4  | Hackberry Mine Estimated Unit Operating Costs                            |
| Table 10.1 | Verification of Vein Strike                                              |
| Table 14.1 | Grade Determination of the Hackberry MOI from 1874 to Present            |
| Table 14.2 | Concentrations of Selected Rare Earth Elements (from <b>Appendix E</b> ) |
| Table 14.3 | Estimated Ounces and Grades of Metals at the Hackberry Mine              |

|            |                                                                   |
|------------|-------------------------------------------------------------------|
| Table 14.4 | In-Ground Valuation of Resources in the Hackberry Mine Properties |
| Table 20.1 | Required State Permits                                            |
| Table 20.2 | Required Federal Permits                                          |
| Table 21.1 | Initial Capital, Sustaining Capital, and Contingency              |
| Table 21.2 | Hackberry Mine Project Direct Cost Elements                       |
| Table 21.3 | Initial Capital Cost Elements                                     |
| Table 21.4 | Sustaining Capital Costs                                          |
| Table 21.5 | Hackberry Mine Estimated Unit Operating Costs                     |
| Table 22.1 | Projected Performance Parameters for the Hackberry Mine           |
| Table 22.2 | Net Present Value (NPV) and Internal Rate of Return (IRR)         |
| Table 22.3 | Tasks to Complete to Mine at Full Capacity                        |

### **List of Appendices**

|            |                                                      |
|------------|------------------------------------------------------|
| Appendix A | Certificate of Qualified Person (QPs); Author        |
| Appendix B | Abbreviations, Terms, Acronyms, & Metric Conversions |
| Appendix C | Claims                                               |
| Appendix D | Flow Circuit Diagrams                                |
| Appendix E | Assay Results from Vesta Minerals                    |



## 1.0 SUMMARY

### 1.1 Introduction

Mr. Mark H. Slatten, MS Geol. (CA #4351, AIPG #7656, and SME Member) (“Mr. Slatten” or “Author”), a Qualified Person, was retained by Silver Ore Gold, LLC (SOG) to review and update the National Instrument 43-101 compliant PFS (“Original PFS”) for the Hackberry Project (“Property”) located in Mohave County, Arizona, U.S.A. This update (“Current PFS”) includes a valuation of “Indicated” and “Inferred” Resources for the Hackberry properties.

### 1.2 Project Location and Ownership

The Hackberry Patented Mine Properties (“Property” or “Project”) is located within the central Peacock Mountain Range of northwest Arizona, approximately 48 km (30 miles) northeast of Kingman, Arizona (**Figure 4.1**). The Property consists of an historic mining operation formerly known as the “Sunshine Mine” and currently known as the “Old Hackberry” (or simply “Hackberry Mine”) and the South Hackberry Mine. The “North” Hackberry property is included in this PFS Valuation. These Mines are located on 12 Patented Lode Claims that cover about 97 hectares (240 acres, **Figure 4.2**) and extend over a north-south distance of about 1.9 km (1.2 miles). The Hackberry Property is held in the Arizona-based, Hughes Family Trust (“Hughes Trust”), and is the subject of this Current PFS. In addition, the tailings piles that dot the South Hackberry mining claims (**Figure 4.3**) and inferred aggregate resources are included in this Valuation.

### 1.3 Geology and Mineralization

Regionally, the Property is in the Peacock Mountains within the Basin and Range province of the southwestern U.S. More specifically, the Property covers rocks that are part of the Arizona Mohave crustal sub-province (Prante, 2009; Duebendorfer, 2015, **Figure 7.1**). Duebendorfer (2015) states that reliable age dates for the oldest granitic intrusive rocks in the Arizona Mohave crustal sub-province are about 1,735 million years old.

The local Property-scale geology consists of a mixed sequence of feldspathic “granitic” gneisses (variably foliated and sheared, medium to coarse-grained, equigranular, granitic rock) and biotitic and biotite-amphibolite gneisses intruded by several, post-metamorphic, fine to medium-grained, intermediate to mafic dikes of possible Middle Proterozoic age (**Figure 7.2**). Poorly sorted, unconsolidated Quaternary colluvium is common on the Property along the lower mountain slopes and adjacent outwash plains.

A structural fracture zone, striking between  $310^{\circ}$  to  $335^{\circ}$ , extends approximately 1.9 km (1.2 miles) along the length of the Property (**Figure 7.2**). The fracture systems and their splays host many of the post-metamorphic dikes and the main Hackberry mineralized zones. The mineralized vein systems hosted by the structural fractures dip about  $40^{\circ}$  to the southwest in the south and steepen to about  $55^{\circ}$  to  $80^{\circ}$  southwest, and locally vertical to slightly northeastward, in the north. Locally joint sets become significant structural features where

they increase in intensity as noted between the two main structural zones on the Property. The structural zone may be part of a more regional feature that appears to extend from the Hackberry deposit area northwesterly for about 6.5 km (4 miles, **Figure 7.1**) as observed on satellite imagery and the trend of historic surface workings. The significance of this structural trend is that mineralization associated with this trend extends far north of the current Property boundary.

#### 1.4 History and Exploration

The Hackberry and South Hackberry prospects were discovered in 1874. The South Hackberry Mine had several different owners who made no apparent systematic attempts to develop the mine. Various sources referred to ongoing litigation and receivership problems and the Mines never had sustained significant production.

The Old Hackberry Mine had two separate periods of production. Mining from 1874 through 1884 was developed in one primary, silver-rich mineralized shoot that produced between \$2,000,000 and \$3,000,000 (1884 dollars) of high-grade silver that was milled primarily on-site. In 1884, the mine was closed due to the combination of mismanagement, mine flooding, and litigation issues. Over the next 33 years several unsuccessful attempts were made to reopen the Mine. In 1917 the Mine was purchased by the Hackberry Consolidated Mining Company. The Mine was dewatered, and development was started on a narrow, mineralized seam on the 600-level that developed into a significant base- and precious-metal-producing shoot. That deposit produced an estimated 136,065 tonnes (150,000 short tons) of mineralized material with an approximate gross value of \$4,000,000 (1917 dollars). In 1919 litigations problems again arose resulting in the permanent closure of the Hackberry Mine and the Mine was allowed to flood again.

Several companies and individuals (with the exception of the current owner) have made unsuccessful attempts to discover additional mineable resources since the mine's closure in 1919.

Since 1919 there has been one Site investigation by SOG that included 12-drill locations (**Section 10**) on the Property. [Note: three (3) of the drill locations were pilot holes, and were, therefore, excluded from the analysis in **Section 10** (see footnote **Section 1.10.1**).] Recent reconnaissance has suggested that the potential exists for good values in the Mine, in the Mine tailings, and in the aggregate. It is SOG's intention to mount a comprehensive, Property-wide exploration effort, including a drilling campaign, to corroborate the Valuation and that significant mineral Resource and Reserves are present on the Property.

#### 1.5 Mineral Resource Estimate

A mineral *Resource* is an occurrence of natural solid material in the Earth's crust in such form, quantity, and quality (grade) that the material has a reasonable prospect for economic extraction. The Author has estimated the mineral Resource for the Project based on geologic modeling and assay data. Gold, silver, palladium, nickel, and scandium have high assay values, and platinum, titanium, cerium, and neodymium nickel show good assay values. These nine metals are the Metals of Interest (MOI) at the Property and are included in the Valuation. Lead and zinc (base metals) have historical significance at the Property however are not included in this latest Valuation. The mineral Resources estimate reported here was prepared in a manner

consistent with the Committee of Mineral Reserve International Reporting Standards (“CRIRSCO”), of which both the Canadian Institute of Mining, Metallurgy, and Petroleum (“CIM”) and Australian Code for Reporting of

Exploration Results, Mineral Resources and Ore Reserves (the “JORC Code”) are members. The mineral Resources at the Hackberry Properties (**Table 1.1**) are classified as “Indicated” and “Inferred” in accordance with “CIM definition Standards for Mineral Resources and Mineral Reserves”, prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council on May 10, 2014. Classification of the Resources reflects relative confidence of the grade estimates but is very conservative.

The Author believes that the location, quantity, grade, continuity, and geologic characteristics of the subject Property’s mineral Resources are known and have been interpreted from the available geologic evidence, data, and analytical test results. Mineral Resources that are not mineral Reserves may be materially affected by modifying factors such as mining, processing, metallurgy, infrastructure, economics, marketing, legal, environmental, social, and/or governmental. The mineral Resources at the Hackberry Properties qualify as “Indicated” and “Inferred” Resources (**Table 1.1**) valued at a combined (with tailings, aggregate, and Rare Earth Elements (REEs) included) **\$6.96 billion** (see also **Section 14**). **Table 1.2** shows the number of ounces and grades of the metals of concern at the Hackberry Property. The Valuation cited in this PFS is conservative and could be substantially higher with more data.

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**Table 1.1** Valuation of the Hackberry Patented Properties

| Indicated resources    | Au oz            | Au oz           | Pt oz        | Pd oz           | Sc oz            | Total            |
|------------------------|------------------|-----------------|--------------|-----------------|------------------|------------------|
| Price/Oz               | \$5209           | \$96            | \$2234       | \$1739          | Private contract |                  |
| South Hackberry        | \$2,458,648,000  | \$802,560,000   | \$9,829,600  | \$313,020,000   | Private contract | \$3,584,057,600  |
| North & Main Hackberry | \$2,765,979,000  | \$902,880,000   | \$11,058,300 | \$352,147,500   | Private contract | \$4,032,064,800  |
| Ore Shoots             | \$5,286,093,200  | \$1,725,504,000 | \$21,133,640 | \$672,993,000   | Private contract | \$7,705,723,840  |
| Tailings (all)         | \$92,788,692     | \$51,321,600    | \$2,703,140  | \$86,080,500    | Private contract | \$232,893,932    |
| Total Indicated USD    | \$10,603,508,892 | \$3,482,265,600 | \$44,724,680 | \$2,198,965,500 | Private contract | \$16,329,464,672 |
|                        |                  |                 |              |                 |                  |                  |
| Inferred Resources     | Au oz            | Au oz           | Pt oz        | Pd oz           | Sc oz            | Total            |
|                        |                  |                 |              |                 | Private contract |                  |
| South Hackberry        |                  |                 |              |                 |                  |                  |
| North & Main Hackberry |                  |                 |              |                 |                  |                  |
| Aggregate              | \$1,721,053,600  | \$561,792,000   | \$6,880,720  | \$219,114,000   | Private contract | \$2,508,840,320  |
| Total Inferred USD     | \$1,721,053,600  | \$561,792,000   | \$6,880,720  | \$219,114,000   | Private contract | \$2,508,840,320  |
| Total Inf + Ind USD    | \$12,324,562,492 | \$4,044,057,600 | \$51,605,400 | \$2,418,079,500 | Private contract | \$18,838,304,992 |

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**Table 1.2** Resource Metals (Ounces and Grades) at the Hackberry Patented Properties

| Indicated resources           | Tons             | Au oz            | Ag oz             | Pt oz         | Pd oz          | Sc oz            | Total             |
|-------------------------------|------------------|------------------|-------------------|---------------|----------------|------------------|-------------------|
| Grade                         |                  |                  |                   |               |                |                  |                   |
| South Hackberry               | 400,000          | 472,000          | 8,360,000         | 4,400         | 180,000        | 740,000          | 9,756,400         |
| North & Main Hackberry        | 450,000          | 531,000          | 9,405,000         | 4,950         | 202,500        | 832,500          | 10,975,950        |
| Ore Shoots                    | 860,000          | 1,014,800        | 17,974,000        | 9,460         | 387,000        | 1,591,000        | 20,976,260        |
| Tailings (all)                | 110,000          | 17,820           | 534,600           | 1,210         | 49,500         | 203,500          | 806,630           |
| <b>Total Indicated Ounces</b> | <b>1,820,000</b> | <b>2,035,620</b> | <b>36,273,600</b> | <b>20,020</b> | <b>819,000</b> | <b>3,367,000</b> | <b>42,515,240</b> |
|                               |                  |                  |                   |               |                |                  |                   |
| Inferred Resources            |                  | Au oz            | Ag oz             | Pt oz         | Pd oz          | Sc oz            | Total             |
|                               |                  | (1.18 opt)       | (20.9 opt)        | (0.011 opt)   | (0.45 opt)     | (1.85 opt)       |                   |
| South Hackberry               | 400,000          |                  |                   |               |                |                  |                   |
| North & Main Hackberry        | 450,000          |                  |                   |               |                |                  |                   |
| Aggregate                     | 280,000          | 330,400          | 5,852,000         | 3,080         | 126,000        | 518,000          | 6,829,480         |
| <b>Total Inferred Ounces</b>  | <b>280,000</b>   | <b>330,400</b>   | <b>5,852,000</b>  | <b>3,080</b>  | <b>126,000</b> | <b>518,000</b>   | <b>6,716,080</b>  |
| <b>Total Inf + Ind Ounces</b> | <b>2,100,000</b> | <b>2,366,020</b> | <b>42,125,600</b> | <b>23,100</b> | <b>945,000</b> | <b>3,885,000</b> | <b>49,314,720</b> |

### 1.6 Mineral Reserve Estimate

A mineral *Reserve* estimate is made for a Resource that is the economically mineable part of a Proven or Probable, and, in some circumstances, a Measured mineral Resource. A comprehensive core drilling program combined with a Nuclear Magnetic Resonance (NMR) survey and other emerging geophysical technologies are recommended to elevate the confidence level of the current valuation to “Proven” or “Probable” Reserves.

## 1.7 Mining Methods

Approximately 150,000 tons of ore was mined and milled from the Hackberry Mine in 1917. Prior to that, approximately 77,500 tons of ore was mined from 1874 to 1884, but these volumes are not documented in the literature. **Figure 6.1** shows the only documented map of the underground workings (including stopes) of the Hackberry Mine (after Foster 1919). The ore was mined exclusively by hand from the main shaft, drifts, and crosscuts.

A Plan of Operations (“POO”) will detail the mining methods proposed to exploit the Resources of the Hackberry Mine only after comprehensive core drilling and geophysical surveys are completed. What follows here is only a concept of mining methods based upon the current level of knowledge about the Hackberry Mine Property.

Modern surface mining methods will occupy the first 2 years of mining for the tailings piles on the South Hackberry mining claims (see **Figure 4.2**). Modern lode-mining (underground) techniques will be applied to the Hackberry targets, including North of Hackberry, “Old” Hackberry, and South Hackberry.

**Table 1.3** shows the proposed 20-year Life of Mine (LoM) mining schedule for all three Hackberry mining targets. The Project includes approximately 2.1 million tons of ore currently projected to be extracted and processed by combined surface and lode mining. The Mine production schedule is projected to be up to 320 tons of ore per day 330 days per year for 20 years.

**Table 1.3** Production Schedule and Cash Flow for the Hackberry Mine

| Year of Operation                           | Year 1               | Year 2                 | Year 3                 | Years 4-19             | Year 20              | Total                   |
|---------------------------------------------|----------------------|------------------------|------------------------|------------------------|----------------------|-------------------------|
| Tons                                        | 105,000              | 210,000                | 210,000                | 1,470,000              | 105,000              | 2,100,000               |
| Sales                                       | \$675,000,000        | \$1,350,000,000        | \$1,350,000,000        | \$9,450,000,000        | \$675,000,000        | \$13,500,000,000        |
| Operating Costs (\$-129.47)                 | \$13,594,350         | \$27,188,700           | \$27,188,700           | \$190,320,900          | \$13,594,350         | \$271,887,000           |
| Infrastructure & CapEx                      | \$10,000,000         | \$10,000,000           | \$5,000,000            | \$13,000,000           | \$2,000,000          | \$40,000,000            |
| EBITA/Taxes (fluctuate 2° opportunity zone) | \$72,500,000         | \$145,000,000          | \$145,000,000          | \$2,465,000,000        | \$72,500,000         | \$2,900,000,000         |
| <b>Net Profit</b>                           | <b>\$578,905,650</b> | <b>\$1,167,811,300</b> | <b>\$1,172,811,300</b> | <b>\$6,781,679,100</b> | <b>\$588,705,650</b> | <b>\$10,288,113,000</b> |

## 1.8 Mineral Processing

Historically, lode ore was milled through a gasoline-powered, stamp mill. Listed below are 4 processing options. Details are shown in **Section 17.0**. The sale of a dore bar has lower offtake costs.

- Flotation Producing a Concentrate
- Flotation and Leach of the Concentrate
- Whole Ore Leach (WOL)
- Dry Air Separator System

## 1.9 Economic Analysis

Information contained and certain statements made herein are considered forwardlooking within the meaning of applicable Canadian securities laws. These statements address future events and conditions and so involve inherent risks and uncertainties.

Actual results could differ from those currently projected.

The Project is planned to be a combination surface and underground mining operation with milling and processing of the ore, with the estimated production of 2.1 million tons of Indicated (1,830,000 tons) and Inferred (280,000 tons) Resources. The Mine will be owner-operated with a probable lease strategy for mining equipment. **Table 1.1** shows the estimated Valuation of the Hackberry Mine.

Economic analysis of the base case scenario for the Project uses a price of \$1,925 per ounce for gold (Au), \$23 per ounce of silver (Ag), \$913 per ounce of platinum (Pt), \$1228 per ounce of palladium (Pd), and \$1,605 per ounce of scandium (Sc). In addition, \$0.70 per ounce of nickel (Ni) and \$47 per short ton of aggregate is used in this Current PFS. The economic model shows an After-Tax Net Present Value @ 10% ("NPV-10%") of \$ 3 billion and After-Tax Internal Rate of Return ("IRR") of 478%. **Table 22.3** summarizes the projected Net Present Value, NPV-10; Internal Rate of Return, IRR; years of positive cash flows to repay the negative cash flow ("payback period") on both After Tax and Before-Tax bases.

**Table 1.3** summarizes the projected Mine production schedule and cash flows. The economic evaluation and schedule is based on Indicated and Inferred Resources. Mineral Resources at Hackberry will be converted to mineral Reserves with additional core drilling and geophysical surveys.

The projected Life of Mine (LoM) for the Project is twenty years with one year of preproduction and construction. Approximately 2.5 million ounces of gold, 44 million ounces of silver, 896,000 ounces of palladium, 2.1 million ounces of scandium, and 1.2 million ounces of nickel are projected to be produced for sale. Titanium (1.5 million ounces, cerium (1.6 million ounces, and neodymium (678,000 ounces, and platinum (23,000) have good values in ounces but low spot market prices. An initial capital investment of \$40,000,000 including contingency/working capital/reclamation is projected, including the Mine equipment capital lease. The production cost is calculated to be \$161.84 per ton of ore mined (**Table 1.4**).

**Table 1.4** Hackberry Mine Estimated Unit Operating Costs

| Capital Item                                   | Estimated Operating Cost<br>(\$US/process ton) |
|------------------------------------------------|------------------------------------------------|
| Mining (includes waste and stockpile handling) | \$-76.50                                       |
| Processing                                     | \$-36.27                                       |
| Administrative                                 | \$-14.02                                       |
| Transportation and refining                    | \$-1.76                                        |
| <b>Cash Operating Costs</b>                    | <b>\$-128.55</b>                               |
| Production Taxes                               | \$-0.92                                        |
| <b>Total Operating Costs</b>                   | <b>\$-129.47</b>                               |
| Capital Costs                                  | \$-31.80                                       |
| Reclamation                                    | \$-0.57                                        |

All-in Sustaining Costs

\$-161.84

## 1.10 Conclusions and Recommendations

Based on unpublished and published data cited in this Report, as well as a personal inspection of the Property, the Author has concluded that the Hackberry Property exhibits evidence of significant silver, gold, palladium, nickel, and scandium mineralization and is a development property of merit. Further, the Author recommends that SOG conduct a multi-disciplinary geological (including core drills), geochemical, and geophysical exploration program on the Property, using state-of-the-art exploration techniques. The objective of the proposed exploration program will be to corroborate the historic data and to explore the three Mine targets, all directed toward defining a mineral Reserve.

### 1.10.1 Drilling

There has been one recent documented, systematic core drilling program (9 drills) at the Property (see **Figure 10.1**) to verify the strike direction (northwest/southeast) of the main vein at Hackberry.<sup>1</sup> The recent core drilling (**Section 10**) has shown the primary vein at Hackberry to be 6.475 feet in width. New drilling locations will be determined by recent drilling results, field reconnaissance, and geophysical surveys.

### 1.10.2 Metallurgy

The following is recommended for any on-going metallurgical program:

- Optimize the metallurgical process to reduce cost.
- Characterize the deposit with respect to all Precious Group Metals (PGMs) and Rare Earth Elements (REEs).
- Evaluate the sulfidization, acification, recycling, and thickening processes to potentially recover the remaining PGMs as by-products.
- Complete a detailed design of the plant.

### 1.10.3 Mining

Based on the favorable results of this NI 43-101, a mine design, and Plan of Operations (“POO”) will be advanced to a feasibility or detailed design level prior to a production decision. The following areas are recommended for focus:

- Optimize the Mine design, including number of access points, internal raises to improve ventilation, stope height, and width.
- Review to see if marginal grade material can be added to the stopes if the stope access cost is excluded due to the stope already being developed.
- Investigate contract mining versus owner mining.

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<sup>1</sup> Nine (9) drills out of the twelve (12) total drills are core drills, while the three (3) additional drills were pilot hole drills as noted in Section 1.4.

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## 2.0 INTRODUCTION

### 2.1 Issuer and Terms of Reference

Mr. Slatten was retained by Silver Ore Gold, LLC (SOG) to review and update the National Instrument 43-101 compliant Preliminary Feasibility Study (“PFS” or “Report”) for the Hackberry Patented Mine Properties (“Properties” or “Property”) located in Mohave County, northwest Arizona, U.S.A. Mr. Slatten is independent of, and has no beneficial interest in, the Hackberry Project. Fees for this Report are not dependent, in whole or in part, on any prior or future involvement or understanding resulting from the conclusions of this Report. This Report was prepared in accordance with the disclosure and reporting requirements set forth in NI 43101, specifically to support the current value of the Hackberry Patented Mine Properties.

### 2.2 Qualified Person

Mark H. Slatten, Professional Geologist (CA #4351 and American Institute of Professional Geologists (AIPG #7656)), Professional Geophysicist (CA #932), Certified Engineering Geologist (CA # 1605), and Certified Hydrogeologist (CA #521), is serving as a Qualified Person as defined in NI 43-101. Mr. Slatten has over 45 years of domestic and international, base- and precious-metal, diamond exploration, oil exploration, and property evaluation experience. A Certificate of Qualified Person (QP) is provided in **Appendix A**.

### 2.3 Sources of Data for PFS

Data for this PFS was sourced from various historical unpublished and published geological reports, maps, Mine plans, and news articles as cited in **Section 27.0**. Several of the unpublished reports were obtained from the digital archives of the Hughes Family Trust and the Arizona Geological Survey. The sample locations and silver, lead, and zinc analyses are shown in **Figures 7.5, 7.6, 7.7 and 7.8** in **Section 7.5** of this Report.

### 2.4 Details of Inspection

The Author spent June 10, 2024, on the Property. During this time the Author conducted reconnaissance field examinations of the property’s geology. During the Property inspection the Author became familiar with the status and geological and geographical features of the property.

### 2.5 Units of Measure

Abbreviations, terms, acronyms, and metric conversions used in this report are listed in **Appendix B**. All distance units are reported in metric units followed by their approximate conversions in the Imperial system in parentheses, for example, 25 meters (82 feet). With respect to geological rock sample locations as noted in analytical tables or spreadsheets, sample locations are stated in meters and tied to the NAD 27 Zone 12 datum. Maps and figures in this report are plotted in UTM NAD 83 Zone 12. References to values of silver, gold, or other metals in the body of the text are reported in parts per million (“ppm”), percent (%), short ounces per short ton (“oz/t”), grams per metric tonne (grams/tonne), Troy ounces (oz), Reliance short tons (tons), metric tonnes (tonnes) or kilograms (kg). Precious metals values historically reported in troy ounces per short ton have been converted to grams

per metric tonne using a factor of 1 oz/ton = 34.286 grams/tonne, and both values are reported. All other elements referred to in geochemical analyses are reported in parts per million (“ppm”) or percent (“%”) as indicated. All currencies are reported in U.S. dollars.

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### 3.0 RELIANCE ON OTHER EXPERTS

Property ownership and mineral tenure information was supplied by Almar Professional Land Services, Inc. Ms. Marty Miller, Certified Professional Landman (CPL), and owner of Almar Professional Land Services, Inc. (Corporate Office: 450 Hillside Dr., Suite A-160, Mesquite, NV, 89027) reviewed and verified surface and mineral ownership status of the patented mining claims.

Mr. Glen (Glendenning) W. Adams, P. Geol. (Minnesota and Wisconsin and Registered Member SME, No. 4115591RM) (“Mr. Adams”, a Certified Professional Geologist and Qualified Person), originally to examine the project area and prepare an independent National Instrument 43-101-compliant PFS (“Original PFS”) for the Hackberry Patented Mine Property (“Property”). Mr. Adams is responsible for the initial written body of the Report. All map figures in the Report were produced by Mr. Jeffrey Rowe, P. Geo. (British Columbia) (“Mr. Rowe”), a Certified Professional Geologist (a Qualified Person). Collectively Mr. Adams and Mr. Rowe are the co-authors (“Co-Authors”) of the Original PFS. The Original PFS is based on a compilation and analysis of historic unpublished and published geological reports and data prepared by cited individuals, personal communications, and on a field inspection by Mr. Adams. The Original PFS incorporates a summary of previous work and an appraisal of the exploration potential of the Property. Some of the original text or figures are modified in this update. The purpose of the Original Report is to demonstrate the results of the historic exploration and mining activities on the Property, as well as the Property’s inherent mineral potential. The Adams and Rowe Original PFS did not include a discussion of the economics of mineral production, which is added in the Current PFS. A valuation of “Indicated” and “Inferred” Resources has been added to the Current PFS. The Original PFS forms the basis of the Current PFS, and credit is here given for the original work.

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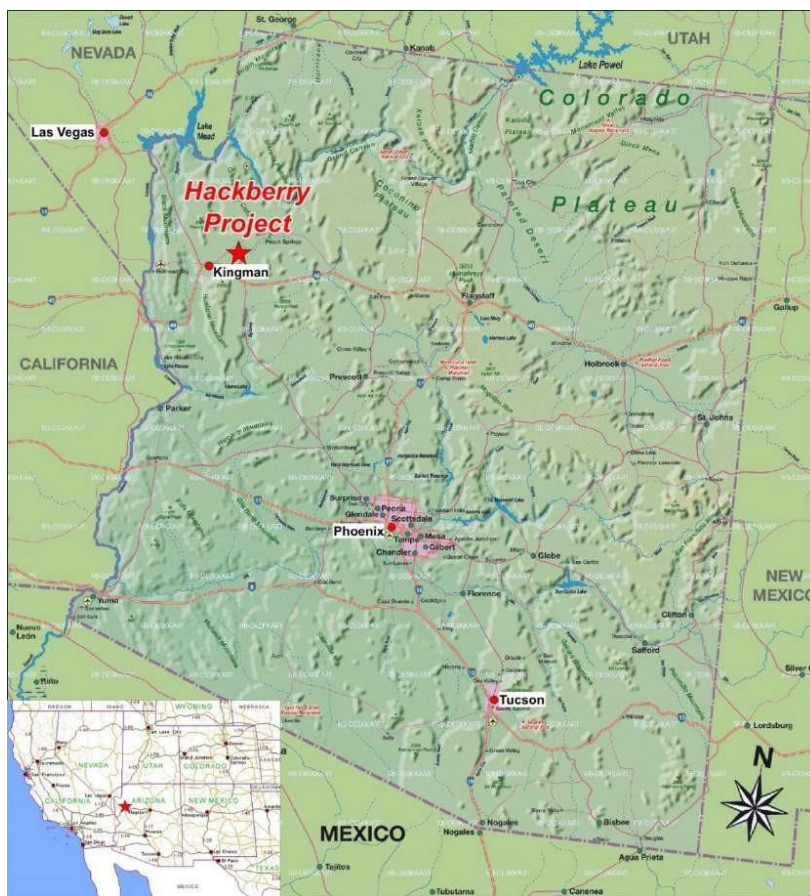
## 4.0 PROPERTY DESCRIPTION AND LOCATION

### 4.1 Property Location

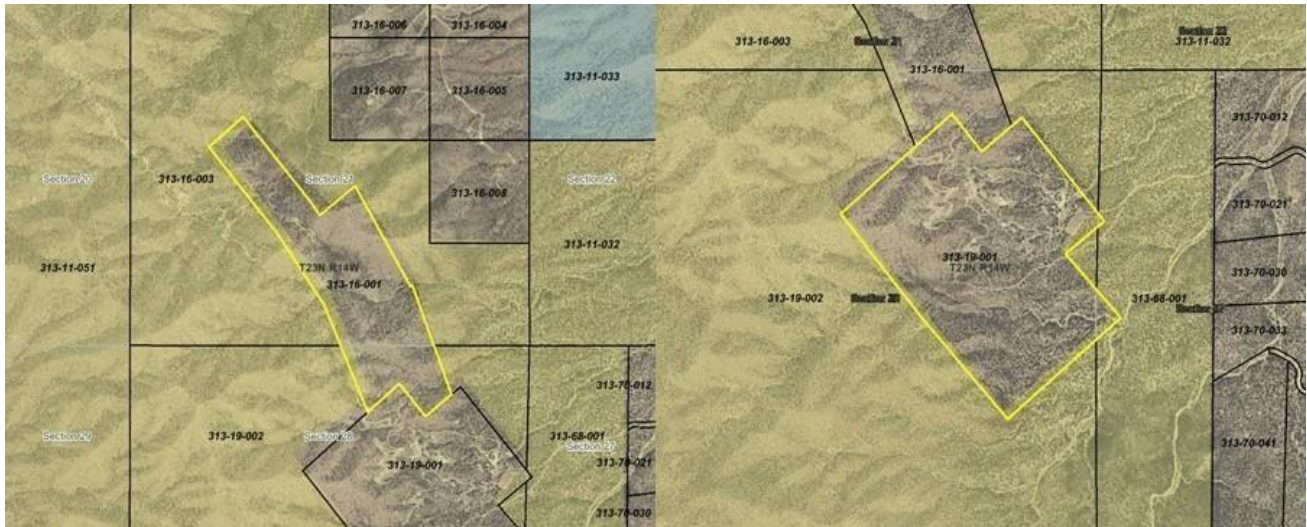
The Hackberry Project is in the Peacock Mining District, Mohave County, northwest Arizona, approximately 48 km (30 miles) northeast from Kingman, Arizona (**Figure 4.1**). The Property lies along the east flank of the central Peacock Mountain range 5.6 km (3.5 miles) west of the small community of Hackberry, Arizona, located along U.S. Highway 66. Access from Hackberry to the Property is by a network of publicly- accessible gravel roads which traverse Federal, State, and private lands.

### 4.2 Property Description and Ownership

The Property lies in an historic mining area, consisting of the Original and North Hackberry Mines and the South Hackberry Mine. They are located on the southern part of 12 Patented Lode claims, totaling 97 hectares (240 acres, **Figure 4.2**), owned by the Hughes Trust, and spanning northwest-southeast across parts of Sections 20, 21, 27 and 28, Township 23 North, Range 14 West, Salt River meridian. Sixteen tailings piles lie of the South Hackberry property (**Figure 4.3**).



**Figure 4.1.** Location of the Hackberry Property, Mohave County, Arizona



**Figure 4.2.** Outline of Hackberry Property, Mohave County, Arizona



**Figure 4.3.** Outlines of Tailings Piles (in red) on the South Hackberry Mining Claims

The patented claims, which include both surface and mineral rights, are owned by the Hughes Family Trust. Three past-producing mining properties, known as the “Old” and North Hackberry Mines and the South Hackberry Mine are located on the Sunshine and the South Hackberry patented lode claims. The other 10 patented claims are contiguous with the Sunshine and South Hackberry patents.

The SOG's patented mining claim blocks are accessible via a network of public roads which cross various combinations of BLM-managed Federal lands, State of Arizona lands, and private lands subject to public rights-of-way. The patented claims host private, gated access roads. To the best of the Author's knowledge there are no other significant factors or risks that may affect access, title, or the right or ability to perform work on the Property.

#### **4.3 Royalties, Agreements, and Encumbrances**

There is no data concerning these topics available to the Author for this report.

#### **4.4 Environmental Liabilities**

Previous mining in the Hackberry Project area took place between 1874 and 1921. There are several historic vertical and decline shafts, pits, and trenches on the property. The major shafts observed during the Author's field inspection were surrounded by wire fences and high visibility orange plastic mesh to warn others of potential danger. The need for additional safety measures will be assessed prior to commencing exploration activities on the Property.

#### **4.5 Permitting**

The Author is unaware of any current permitting or security bonds in place on the Property, or of any upcoming permitting requirements. Once the scope of an exploration program is known, a Plan of Operation ("POO") will be developed and permits for conducting exploration on Hackberry properties will be applied for.

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## **5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **5.1 Access**

The Hackberry Project area is easily accessed from Kingman, Arizona by driving northeast on paved U.S. Route 66 for approximately 41.8 km (26 miles), to a point about 3.2 km (2.0 miles) northwest of the community of Hackberry. To reach the main Hackberry and South Hackberry workings, a secondary public gravel road angles southeast over the railroad tracks from Route 66 for about 2.1 km (1.3 miles) and then southwest approximately 4.3 km (2.7 miles).

Meteorological data in this section are from the U.S. Climate website for Kingman, Arizona (usclimatedata.com), and WeatherSpark weather data for the Kingman airport (weatherspark.com). Kingman and the property area have a semi-arid steppe climate. The average summertime high temperature in Kingman (June through September) is about 31<sup>0</sup> to 36.5<sup>0</sup> C (88<sup>0</sup> to 90<sup>0</sup>F). Wintertime high temperature (mid-November through February) range from about 14<sup>0</sup> to 16<sup>0</sup>C (58<sup>0</sup> to 61<sup>0</sup>F) while the average low temperature for the same period is about 1<sup>0</sup>C (34<sup>0</sup>F). Due to the difference in elevation between Kingman and the Hackberry project area, both the high and low temperature averages on the Property are several degrees lower than those in Kingman.

Thunderstorms are common during the height of the rainy (monsoon) period in July and August yielding about 3.1 cm (1.2 inches) of rain per month. Average annual rainfall is about 25 cm (10 inches). The average monthly precipitation for November through February is about 2.5 cm (0.97 inches).

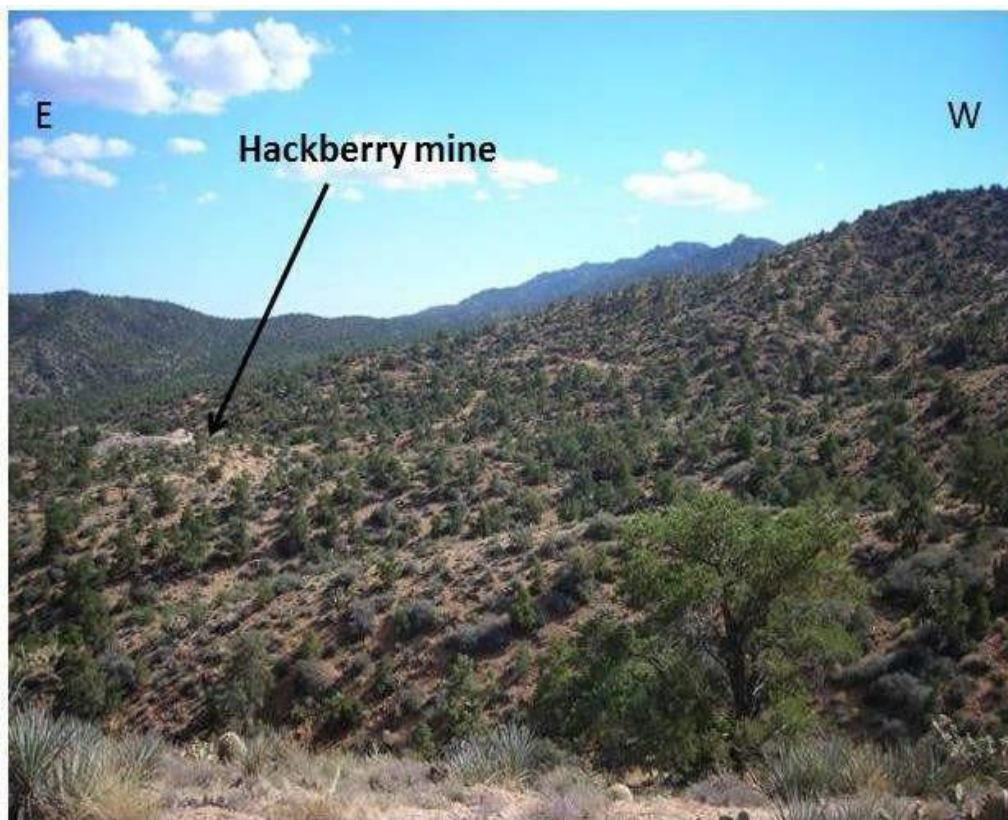
Typical winds vary from 0 to 35 km per hour (0 to 22 miles per hour) and rarely exceed 47 km per hour (29 miles per hour). Winds are generally from a southerly direction with most coming from the southwest.

### **5.2 Physiography**

The Property lies on the east flank of the central Peacock Mountain range. Elevations vary from approximately 1340 m (4400 feet) on the southeastern boundary of the Property to about 1615 m (5300 feet) on the northwest boundary. Topography varies from moderately rugged rolling hills between arroyos to relatively steep hillsides further up the flank of the mountain range (**Figure 5.1.**)

Vegetation is typical of high desert terrains consisting of low-growing cactus species, (prickly pear and hedgehog), and live oaks, junipers, and minor pinon pine. Overall, the foliage is open. The ground surface is commonly covered with a few centimeters to 20 centimeters (<1 to 8 inches) of moderately coarse colluvium with up to 20 percent exposed bedrock.

According to Malkoski (1985) ground water levels vary from within 10 to 30 meters (30 to 100 feet) of the surface in the main Hackberry workings.



**Figure 5.1.** Typical topography and physiography looking south, one km north of the Hackberry Mine, Hackberry Property, Mohave County, Arizona.

### 5.3 Local Resources and Infrastructure

Other than gravel access roads and relatively limited primitive drill roads constructed in the 1970's and 1980's, there is little infrastructure present on the Property. The small community of Hackberry and State Route 66 are approximately 4.8 km (3 miles) east of the Property. Hackberry has a rail siding off the double-tracked Burlington Northern Santa Fe Railway (BNSF) "Southern Transcon" corridor. A major cross-county, high-voltage power line passes through the area immediately west of Hackberry. Interstate-40 passes approximately 20 km (12.5 miles) south of the Property. The town of Kingman, Arizona is a regional supply center and the largest town in Mohave County. Additional supplies, services and international airports are in Phoenix, AZ, some 260 km, (165 miles) southeast of Kingman and in Las Vegas, NV, about 160 km (100 miles) northwest of Kingman.

## **6.0 HISTORY**

### **6.1 Pre-1926**

Unless otherwise stated, much of the data on the early history of the Hackberry area was derived from a 1912 report written by W.L. Watts (Watts, 1912). The depths of the workings in the historic Mine data are measured in feet down the 40°-dip of the inclined shaft from the surface, unless otherwise stated (for example: the 600-level is 183 meters, or 600 feet, down the dip of the inclined shaft). Dollar value figures for poly-metallic mineralization or metals are in U.S. dollars at metal prices of the historic times being referenced, not in present day metal prices. There was very limited mineral exploration conducted on the Hackberry Property through its post-mining history. In **Section 6.0**, detailed historic data are presented on the previous mining activities to assist the reader in better understanding the current mineral potential of the Property.

The Original and North Hackberry and the South Hackberry properties were discovered in the same year, 1874, by separate parties of prospectors. The South Hackberry Mine was sold that same year and developed separately from the Original(?) Hackberry Mine.

#### **6.1.1 The Original and North Hackberry Mines.**

Most of the metal production on the Property has come from the Original Hackberry Mine. Early production from this Mine was conducted under the name of the Hackberry Mining and Milling Company. Initially high-grade, poly-metallic mineralization was partly processed offsite although some high-grade material was processed on-site in a 5-stamp mill which ran from 1874 through 1879 under the name of the “Hackberry Company”. A new 10 stamp mill began operation in 1879 following the destruction of the 5-stamp mill by a fire. This fire may also have been responsible for destroying much of the early Mine records (Hamm 1987).

From 1874 through 1877, \$250,000 dollars’ worth of silver-rich mineralization was mined; however, only about 50 percent of metals recovery was achieved. Between 1877 and the end of 1879 approximately \$500,000 worth of silver-rich mineralization was recovered from mineral bodies mined down to the 125-level on the north part of the Mine and the 250-level on the southern part. The base- and precious-metal-bearing rock had an average value of \$180 per ton at the then current metal values (Watts, 1912). Silver averaged \$1.15 per ounce at that time, which would equate to an average silver-equivalent grade of 156 oz/t (5,367 g/t).

In 1879 the Mine was sold to the “Indian Queen Company” and over the ensuing four years, the best of the remaining high-grade mineralization above the 500-level in the Mine was removed. From an interview with W.B. Ridenour, discoverer of the Hackberry Mine and later the Mine and mill superintendent, Watts (1912), stated that the mineralized shoot mined during the initial mining phase at the Hackberry Mine had been 213 meters (700 feet) long at the 400-level and was pitching to the northwest at about 60 degrees. Silver grades in the zone ranged from 122 to 300 oz/t (4,183 to 10,286 gram/tonne) with most well mineralized vein material ranging from 150 to 180 oz/t (5,143 to 6,171 grams/tonne). Johns (1918) reported that from the initial Mine start up to the 1884 closure, the Hackberry Mine produced about \$3,000,000 in high grade silver. Most of the silver-bearing mineralization was mined from one silver-rich shoot that outcropped at the surface, was mined to a down-dip depth of about 180 meters (600 feet) and was 152 meters (500 feet) long. The body ranged from 0.5 to 1.2 meters (2 to 4 feet) in width. Robertson (1974) reported that the deepest workings from the Hackberry Mine’s initial production were down to the 600-level on the inclined shaft, which equated to a

vertical depth of 110 meters (360 feet). He repeated Johns' \$3,000,000 production value from 1874 to 1884, but also referred to a different production figure for the same time frame of \$2,000,000, quoted from the 1924 Mines Register (precursor of the Copper Handbook and later the Mines Handbook).

In 1884 the hoisting works were lost to a fire. To maintain production, a winze was sunk from the 300-level drift to a depth of 18 meters (60 feet). Here the silver-rich zone was 1.2 meters (4 feet) in thickness and graded 126 oz/ton (4,320 grams/tonne) silver. The metal-rich zone was mined for six weeks producing \$1000 per day. Later in 1884 the Hackberry Mine was closed due to the combination of apparent mismanagement, problems with an influx of Mine waters and litigation issues. The Mine workings were allowed to flood.

From the Mine closure in 1884 to 1917, a span of 33 years, several groups attempted to reopen the Mine, but to no avail. A vertical shaft with a proposed depth of 168 m (550 feet) was started in 1913 (Newspaper article, Nov. 22, 1913, Hughes Trust archives) Water problems slowed progress, but the shaft was completed in late 1915 (EMJ Vol. 99, page 35, Hughes Trust archives).

In January of 1917 the Mine was purchased by the Hackberry Consolidated Mining Company (Johns, 1918). After some refurbishing and dewatering of the Mine, development was started on a narrow base- and precious-metal seam which was followed north from the 600-level. The metal-bearing seam expanded to 1.5 to 6.7 m (5 to 25 feet) in width, was 183 meters (600 feet) in length and continued up-dip to within about 60 m (200 feet) of the surface (Johns, 1918). Only a barren quartz breccia vein zone was visible at the surface (Malkoski, 1985). The mineralized zone was estimated to contain 136,065 tonnes (150,000 short tons) between the 200-level and 600-level with an approximate gross value of \$4,000,000 and contained an estimated average grade of 25 oz/t (857 grams/tonne) silver, 0.097 oz/t (3.3 grams/tonne) gold and 8 percent lead (Johns, 1918). A total of 278 samples of high-grade, poly-metallic mineralization analyzed from the Hackberry Mine in 1919 contained an average of 32 oz/ton (1,097 grams /tonnes) silver, (Breen, 1918; Weed, 1922). An intersection in the same mineralized zone at the 750-level (approximately 230 meters down-dip) had a 6.7-meter (22foot) thickness of which one meter (3 feet) in the core of the zone contained 100 oz/t (3,429 grams/tonne) silver while the surrounding 5.8 meters (19 feet) averaged approximately 25 oz/t (857 grams/tonne) silver. The zone remained open at depth and to the southeast towards the South Hackberry property (Johns, 1918). J. Breen (1918), in an assessment of the Hackberry Mine for new owner James Murray, concluded that the main mineralized zone should average 3.5 to 4 feet (1.0 to 1.2 meters) in thickness, and he conservatively estimated the grades should be 20 oz/t (686 grams/tonne) silver, 0.08 oz/t (2.7 grams/tonne) gold, 2.5 percent lead, and 3.5 percent zinc. Breen further stated that based on flotation tests, he expected recoveries of 85 percent of the silver, 90 percent of the gold, 90 percent of the lead, and 50 to 60 percent of the zinc (Breen, 1918). Development continued to at least the 950-level (290 meters down-dip) and stoping between the 700-level and the 950-level (229 meters and 290 meters down-dip respectively) suggested that similar mineral grades were present at those depths (Robertson, 1974). The 950-level would be approximately 250 meters (820 feet) vertically beneath the northeast-sloping topographic surface. A new flotation mill was constructed to handle the new primary sulfide mineralization and was ready for operations in March of 1919, however litigations problems again arose resulting in the permanent closure of the Hackberry Mine in December 1919 and the Mine was allowed to flood (Roberts, 1974; Hamm, 1987). Some of the remaining silver-rich, poly-metallic mineralization was shipped to outside smelters and some was processed onsite in the flotation mill before the Mine was completely flooded. Robertson (1974) quotes the 1924 Mines Handbook which reported that mined material shipped to the smelter in 1919 averaged 15.2 oz/t (521 grams/tonne) silver and shipped concentrate contained 151.8 oz/t (5,205 grams/tonne) silver and 0.255 oz/t (8.74 grams/tonne) gold. The same reference showed 311 tons (282 tonnes) shipped in 1920 that contained 16.14 oz/t (553.37 grams/tonne) silver. There were rumors of some high-grade mineralization being mined above the water table from 1924 to 1926 (Hamm, 1987). There are few data on the total amount of

underground development completed on either the Hackberry or South Hackberry Mines. Various historic investigators indicated that the Hackberry Mine workings continued down-dip to the 950-level (290 meters) and that about 1000 feet (305 meters) of lateral development existed (Johns, 1919; Sparkes, 1919; Roberts, 1974; Warne, 1983). A 1919 map of the underground workings of the Hackberry Mine, produced by U.S. Mineral Surveyor L. H. Foster (1919), is the only evidence of the locations of some of the actual stopes in the old Mine workings (**Figure 6.1**). Based on his research and early data provided by Johns (1918) and Hamm (1987) suggested past production from the Hackberry Mine may have been about 77,500 tons (70,300 tonnes) at a grade of 34 oz/t (1166 grams/tonne) silver containing about 2.6 million ounces (80,868 kilograms) of silver.

### **6.1.2 The South Hackberry Mine.**

Very little mining took place at the South Hackberry Mine. Watts (1912) indicated that a 46meter (150-foot) inclined shaft had been sunk on the property near the claim boundary with the Hackberry Mine. Ridenour (in Watts, 1918) believed that the upper silver-rich mineralized shoot in the Hackberry Mine continued into the South Hackberry Mine. During 1874 several open cuts were developed to about 6 m (20 feet) in depth, a 21-m (70-foot) shaft was sunk from which several hundred tons of higher-grade mineralization were mined and a 27-m (90foot) shaft was sunk intersecting silver- rich mineralization but the shaft bottomed in alluvium (Watts, 1912). The projected southeastern continuation of the Hackberry mineralized vein system south of the South Hackberry Mine is covered by thick colluvium washed down from the mountain side. Outcrops beyond and southeast of the colluvium show no obvious indications on the surface of the mineralized zone continuing. Watts (1912) suggested the zone may have been faulted off and a north-trending fault has been mapped immediately east of the South Hackberry zone by Albin (1991). Watts (1912) states that several thousands of dollars in silver-rich, poly-metallic mineralization were recovered from the South Hackberry Mine; however, several subsequent owners made no apparent systematic attempts to develop the Mine. Various sources refer to ongoing litigation and receivership problems.

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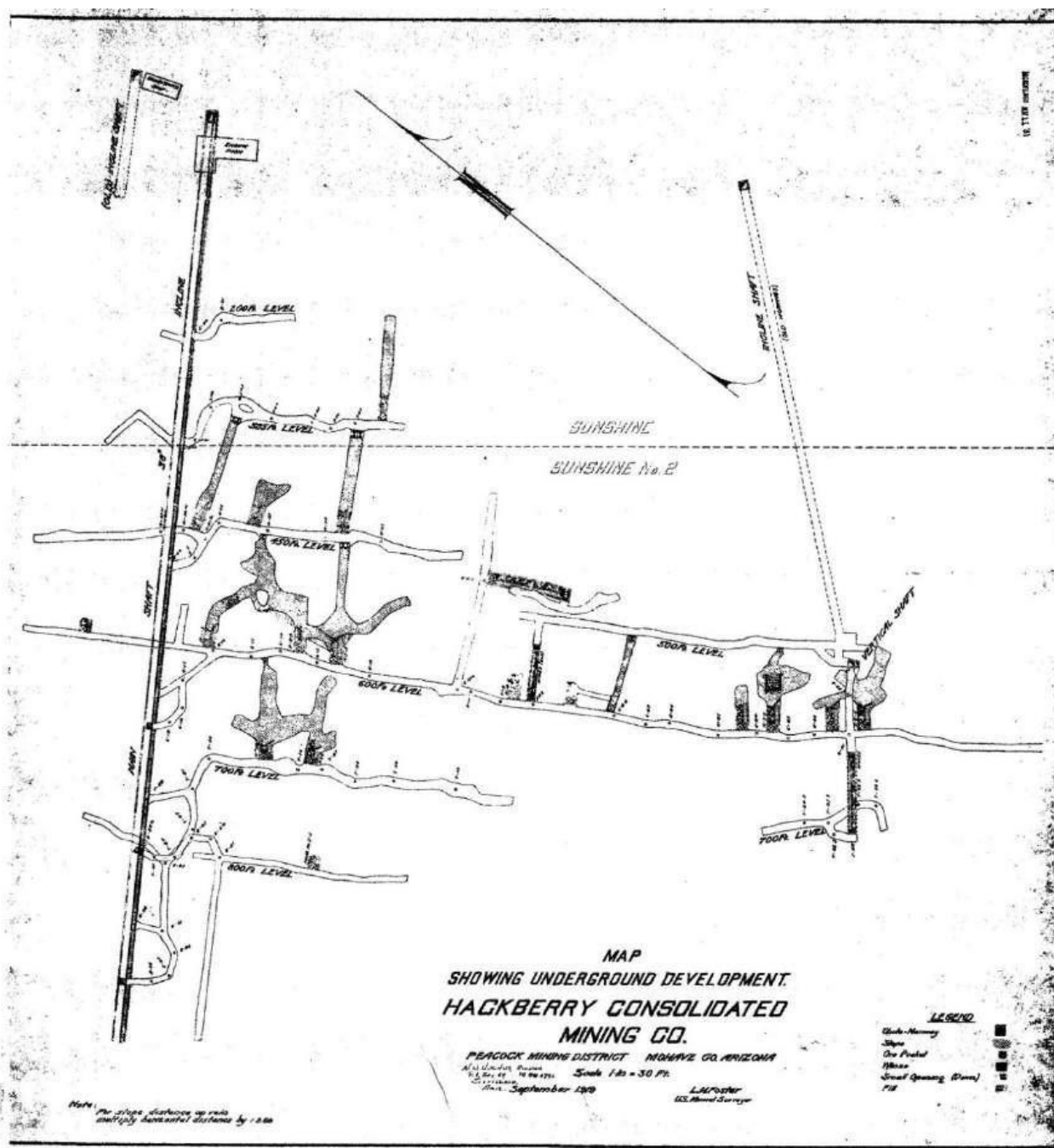


Figure 6.1. Map showing underground development of the Hackberry Mine by U.S. Minerals Surveyor H. L. Foster (1919).

## 6.2 1958 to Present

Mr. Nicholas Hughes Sr. bought the 12 patented lode claims covering the southern part of the Hackberry Property at auction for unpaid back taxes in 1958. Since 1958 Hughes Sr. (now deceased), and the current trustee is Diane Hughes, brought in several major and minor exploration companies that conducted various exploration programs on the Property. Much of the following data comes from reports and maps in the Hughes Family Trust archives. The authenticity of this historical data is difficult to verify and there is no guarantee as to the accuracy or completeness of the supporting documentation. For the purposes that the data in the historic reports were used, Mr. Adams, as a Qualified Person, believes, to the best of his knowledge, that the reports should be considered reliable.

Roberts (1974), Hamm (1987) and data from the Arizona Geological Survey Digital archives reported that companies, including Hecla Mining Co. in 1968, Cyprus Exploration Co in 1974, Continental Minerals around 1978 and Ranchers Exploration and Development Corp. in about 1984 all reviewed the Property but for various reasons it appears they did not come to an agreement to conduct any exploration other than due diligence reconnaissance work. Gunnex Ltd. of Toronto conducted three lines of I.P. surveys in 1968 with inconclusive results (Head, 1968). A 1968 sample from the old stamp mill tailings, possibly collected by Hecla Mining, returned an assay of 47.5 oz/ton (1,629 grams/tonne) silver (Hamm, 1987).

Malkoski (1985) reported that in the late 1970's Western States Minerals staked a large group of claims on the surrounding area around much of the Property.

Northern Arizona Gold and Silver Mining and Milling, a stock investment group, came to an agreement with the Hughes family and controlled the patented claims from 1979 to about 1982 (Hamm, 1987). Work on the Property involved unsuccessful attempts at de-watering and re-opening underground workings and the building of three, 4,000-ton (3628-tonne) leach pad facilities to recover silver from the historic Mine dumps (personal communication with Craig Hughes, September 12, 2016; Ascarza, 2017). A rotary drill company from Las Vegas reportedly drilled three holes of unknown depth approximately 120 to 200 meters (400 to 650 feet) along strike and northwest of the Hackberry main declined shaft.

Apparently, there was no geologist on site, but the driller reported substantial mineralization in the holes. Apparently assay results of drilled material returned little or no metal values (Hamm, 1987). Although several drill sites were prepared on the Property during this campaign, apparently only three additional holes were drilled using a pickup-mounted, downhole-hammer drill prior to the stock company suspending operations (Hamm, 1987). No analytical results from any of the above drilling were found in public or private sources. There is no available data suggesting that any core drilling was conducted on the Property.

About 1985, an ex-board member of Ranchers, Mr. Sam Arentz, tried to interest the Hughes family in a partnership funded by Arentz or through outside financiers. A reconnaissance geological mapping and rock sampling program was carried out by consultant M. Malkoski (1985), on Arentz's behalf. Financing never developed and the partnership ended. In the late 1980's Hamm (1987) reviewed the property for Combined Metals and recommended acquisition; however, there is no record of any work being conducted. Based on discussions with co-trustee Craig Hughes, there have been no further significant exploration efforts

conducted on the Property from the late 1980's until present (personal communication). Therefore, the Property has not undergone any present-day exploration programs utilizing modern geological, geophysical, or geochemical techniques in conjunction with contemporary mineral deposit modeling.

### **6.3 Historic Mineral Resources**

Throughout the long history of the Property, various authors have produced mineral resource estimates. The following resource data are historic and should be considered conceptual in nature and were not prepared, or verified, by a qualified person as defined in NI 43-101. Johns (1918) compiled a resource estimate for the Hackberry deposit from apparent personal underground inspections just prior to the final Mine closure that had a total of 150,000 tons (136,065 tonnes) of mineral resources remaining in place between the 200-level and the 600-level (60 to 180 meters downdip from the surface) with grades estimated at 25 oz/t (857 grams/tonne) silver, 0.1 oz/t (3.4 grams/tonne) gold, and 8 percent lead. He further stated that where the mineralized zones narrowed, assays as high as 100 oz/t (3,429 grams/tonne) silver were obtained. Hamm (1987) suggested that approximately 54,000 tons (48,983 tonnes) of Johns' stated resource may have been mined later. John D. Warne, P.E., (Warne, 1983) produced a report for then owner Nicholas Hughes Sr. suggesting a speculative resource consisting of 160,000 tons (145,136 tonnes) of what he called "Indicated" Resources and 320,000 tons (290,272 tonnes) of what he called "Inferred" Resources for a combined total of 480,000 tons (435,408 tonnes) grading 32 oz/t (1,097 grams/tonne) silver and 0.10 oz/t (3.4 grams/tonne) gold. There is insufficient information to provide guidance as to what basis, parameters or methods were used by the cited authors in determining the above-stated historic mineral resources. There has been sufficient exploration conducted on the Property to determine that an Indicated (also Inferred) mineral Resource exists on the Property. Substantial exploration, including drilling, geophysics, and subsequent geochemical analyses will be required to determine if the Indicated resource qualifies as a "Probable" or "Proven" reserve.

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## 7.0 GEOLOGICAL SETTING AND MINERALOGY

### 7.1 Regional Geology

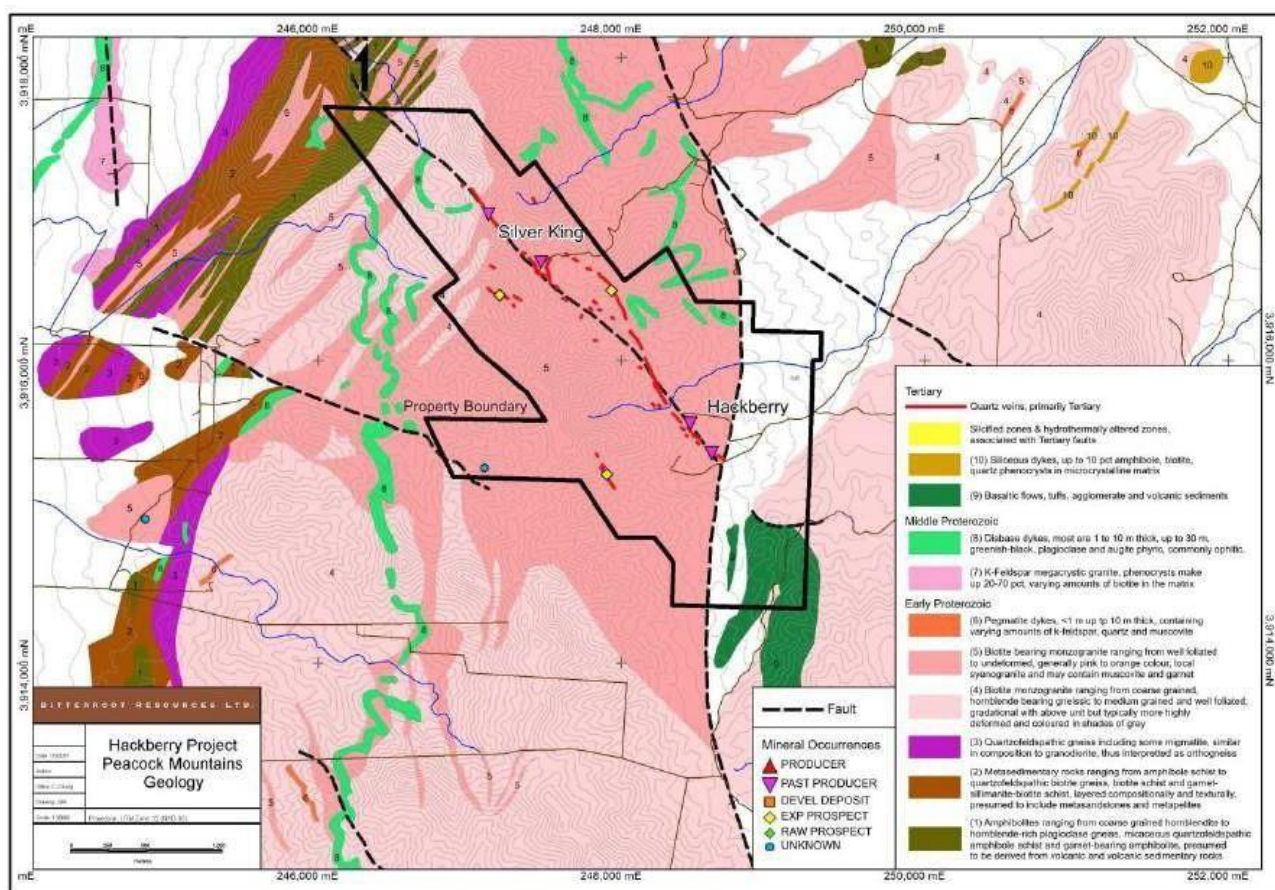
The Hackberry Patented Mine Property is in the Peacock Mountain range at the eastern edge of the Arizona Mohave crustal sub province in the Wallapai Mining District (Prante, 2009; Duebendorfer, 2015). Duebendorfer (2015) states that reliable age dates for the oldest granitic intrusive rocks in the Arizona Mohave sub province are about 1,735 million years.

The base- and precious-metal veins of the Wallapai District generally follow the basin and range structural grain of the Cerbat mountains, forming quartz-filled fracture systems that strike  $330^{\circ}$  to  $310^{\circ}$  azimuth and dip within  $60^{\circ}$  of vertical (Lang, 1988). The mineralized veins occur within a belt about 6.5 to 9 kilometers (4 to 5.5 miles) in width and 22.5 kilometers (14 miles) long and individual veins are traceable for lengths of 30 meters to 4 kilometers (48 feet to 2.5 miles) (Thomas, 1949). Veins average 0.9 to 1.2 meters (3 to 4 feet) in width ranging from a few centimeters to 10 meters wide (<1 inch to 33 feet) (Dings, 1951). Zones of closely spaced veins separated by bands of gouge and country rock may reach widths of 24 to 100 meters (80 to 330 feet) (Thomas, 1949). The veins generally exhibit well defined walls and in places are in contact, and follow, late-stage lamprophyric dikes (Schrader, 1909). Gouge and breccia envelope most veins (Thomas, 1949). The veins consist of fine-grained, to coarse, comb and rosette crystal forms, as well as vuggy and drusy quartz. The quartz is white to grey in color, often limonitic, commonly shattered and re-cemented by late calcite and may be locally chalcedonic or exhibit crustification banding (Thomas, 1949). The less common vein gangue consists of calcite, manganiferous siderite and rare rhodochrosite. The primary sulfide minerals, in order of abundance, are pyrite, sphalerite, galena and chalcopryrite. Also present are arsenopyrite, proustite (a ruby silver; silver-arsenic-sulfide), molybdenite and argentite (Dings, 1951). Oxidation levels generally mimic the water table which ranges from 20 to 60 meters (75 to 200 feet) below surface, which was the final depth of many of the early mines that recovered only the much higher grade, secondary oxidized silver minerals and gold. Wall rock alteration consists of weak vein wall propylitization and silicification and locally intense sericitization, within a few meters of the veins (Thomas, 1949). Districtwide metal zoning described by Lang (1988) is centered on the Ithaca Peak stocks. The zoning pattern consists of a central Cu-Mo core and proceeding outward through zones of Cu-Mn to Cu to Pb-Zn( $\pm$ As) to outer Ag-Au mineralization. Metal zoning in individual mines is less obvious. The Wallapai District poly-metallic vein systems are mesothermal in deposit type (Lindgren, 1913; Butler, 1938; Dings, 1951).

Geologically, the Peacock Mountains (**Figure 7.1**) consist predominantly of a Paleoproterozoic, metasedimentary sequence of psammitic (sandy) and pelitic schists associated with fine-grained amphibolite and hornblende gneisses and minor ultramafic rocks. These rocks are locally intruded by medium- to coarse-grained, poorly to moderately foliated to undeformed, undifferentiated granites and undeformed, late-stage, medium- to coarse-grained mafic dikes (Prante, 2009; Albin, 1991). Outcroppings of undeformed Tertiary basalts and andesites occur locally. Poorly sorted, unconsolidated Quaternary colluvium is common along the mountain slopes and outwash plains.

## 7.2 Hackberry Property Geology

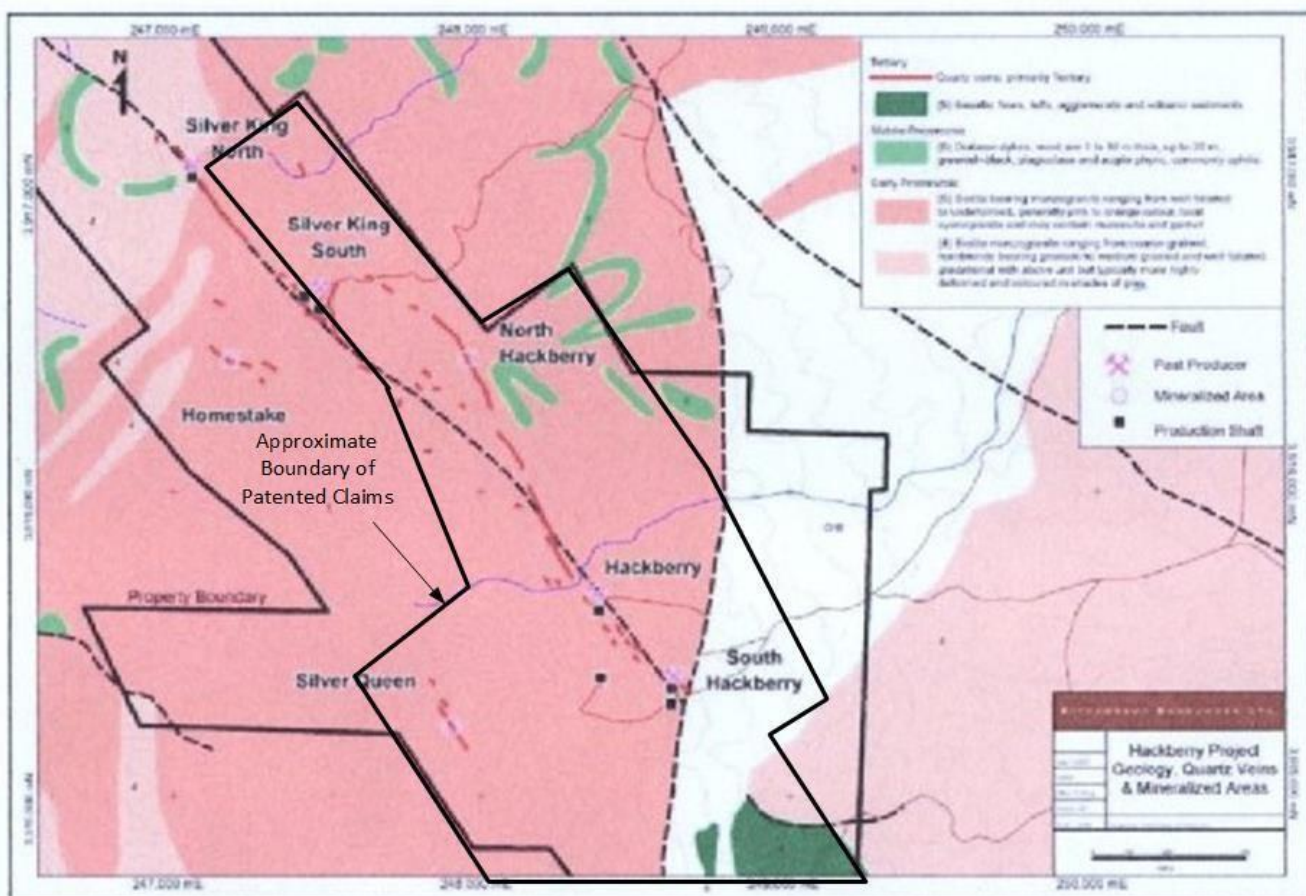
The local Property-scale geology (**Figure 7.2**) is dominated by a mixed sequence of feldspathic “granitic” gneisses and biotitic and biotite-amphibolite gneisses intruded by several, post-metamorphic, fine to medium grained, unmetamorphosed, intermediate to mafic dikes (Malkoski, 1985). The term “gneiss” may be somewhat of a misnomer as visually the country rocks appear to be more of a variably foliated, medium grained, granitic rock. DeMatties (1979) described the rocks as sheared, medium- to coarse grained, equigranular granites (**Figure 7.3**). Because much of the lithological data is taken from Malkoski (1985), the term “granitic gneiss” will be retained in this Report.



**Figure 7.1.** Regional Geology, Peacock Mountains, Mohave County, Arizona (After Albin, 1991)

The hillsides are commonly covered in colluvium up to 5 to 20 cm (2 to 8 inches) thick and outcrop exposure is relatively limited, probably not exceeding 15 to 20 percent. Outcrops occur mostly in the dry arroyo stream beds, as well as forming steep walls of arroyos and small canyons and as sub-crops along ridgelines.

Several of the historic property investigators conducted varying degrees of reconnaissance geological mapping during the post-1958 era. Clifton (1978) produced a reconnaissance geological map; however, he did little detailed work on the country rock. Malkoski (1985) appears to have carried out a more detailed mapping program and much of the following is based on his observations, unless otherwise cited, and on observations made by the co-Author Adams during the property inspection.

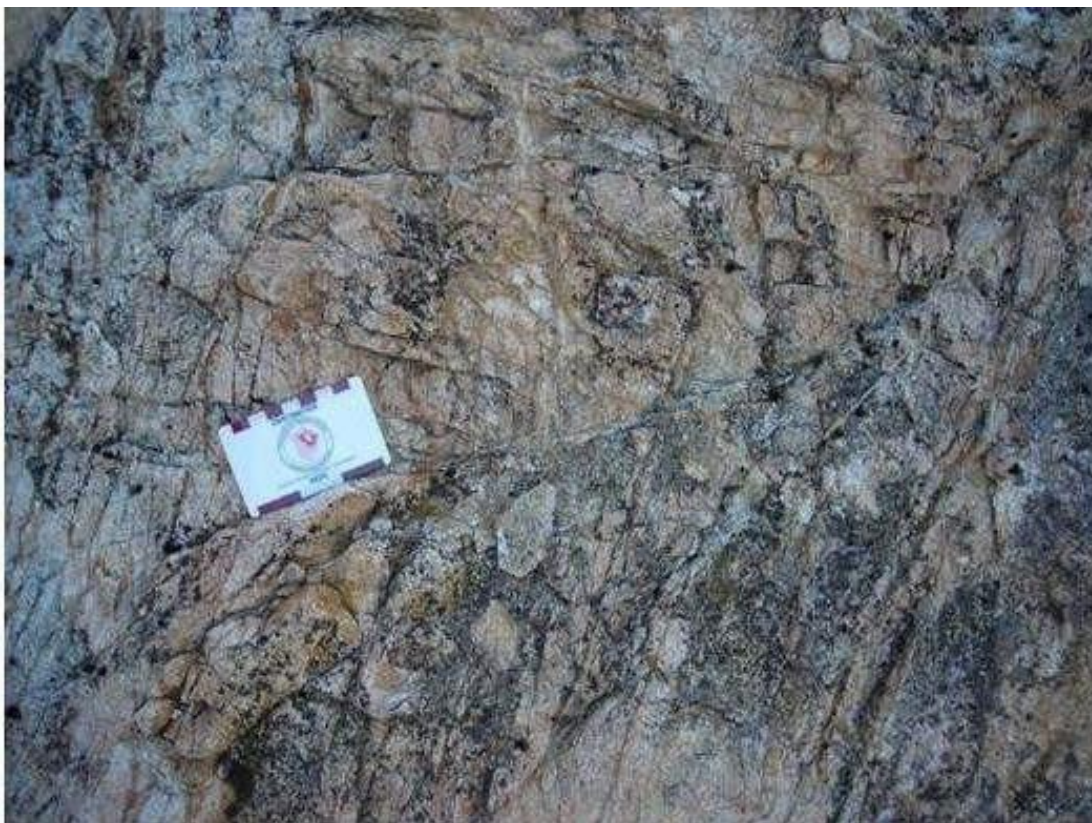


**Figure 7.2.** Hackberry Property Geologic Map, Mohave County, Arizona (After Albin, 1991)

Approximately 80 percent of outcrop coverage consists of coarse-grained, equigranular, quartz, K-feldspar, plagioclase ( $\pm$  minor amphibolite), granitic gneiss. Scattered occurrences of biotite-hornblende-feldspar gneiss occur in areas north and east of the Hackberry Mine area. Limited outcrops of biotite-amphibole schist occur west of the South Hackberry Mine area (Malkoski, 1985).

Post-metamorphic intrusive rocks occur across the Property and consist of generally northwest-striking, intermediate to basaltic dikes and sills. A notably significant, 1000-meter-long (3,300-foot), siliceous iron-stained dike (Watts, 1912), also described as a grey-brown mottled, aphanitic “vitrophyre” dike (Malkoski, 1985), strikes northwest across the Property.

The dike varies in width from 1.5 to 30 m (5 to 100 feet) and dips from  $35^{\circ}$  to  $55^{\circ}$  southwest in the southern part of the Property, to near vertical in the northern part where it appears to lens out. Thick colluvium covers the southern extent of the projected location of the dike. Where visible, the contacts of the post-metamorphic dikes with the country rock exhibit tectonic breccia zones of varying degrees (DeMatties, 1979).



**Figure 7.3.** Fractured & locally brecciated, “granitic” gneiss, near North Hackberry Property.

### 7.3 Structure

The Peacock Mountains lie within the Basin and Range province of the western U.S. and local structural features tend to parallel the regional trends. The primary structural lineament trends on the Property range from about  $320^{\circ}$  to  $335^{\circ}$  azimuth. The lineament features host many of the post-metamorphic dikes, such as the main Hackberry mineralized zone southwest of the Hackberry Mine area (DeMatties, 1979; Malkoski, 1985), (see **Figure 7.2**). A secondary linear trend, striking  $270^{\circ}$  to  $290^{\circ}$  azimuth, is a more westerly trend associated with several splays off the main Hackberry mineralized trend (Malkoski, 1985). Locally, joint sets may provide significant structural features for mineralization where they increase in intensity as noted by the Author near the North Hackberry mineralized zones (see **Figure 7.2** and **Figure 7.4**).

### 7.4 Alteration

There appears to be little or no regional alteration assemblages developed on the Property-scale; however, local argillic and, to a lesser extent, chloritic wall rock alteration assemblages commonly envelope the main mineralized zones and veins (Malkoski, 1985). Argillic alteration is more widespread, often forming 3 to 6 meter (10 to 20 feet) wide zones in the gneissic wall rocks adjacent to mineralized vein systems. Where the country rock gneiss is encompassed within a mineralized zone, argillic alteration may be intense (Malkoski, 1985). Weak to moderate argillic alteration was observed during the Property inspection in the iron-stained, strongly jointed, foliated, granitic rocks near the northern part of the Hackberry vein system.



**Figure 7.4.** Strongly jointed and fractured granitic gneiss located near the North Hackberry Property.

## 7.5 Significant Mineralized Zones

Unless otherwise cited, the following descriptions rely heavily upon the work of Malkoski (1985), with minor contributions based on the Author's observations during the Property inspection.

This Report considers only the Valuation of the patented claims, the Hackberry (comprised of South Hackberry- Hackberry-North Hackberry, **Figure 7.2**) that strike in a general northwesterly direction along much of the length of the patented Property. The zones dip about

40° to the southwest in the south part of the Property and steepen to about 55°-80° southwest in the north part. The Hackberry mineralized structures may be traced by a combination of intermittent historic surface workings, base- and precious-metal mineralization (or anomalous base- and precious-metal rock geochemistry), or altered and sheared, quartz- veined, zones in outcrop and sub-crop. Based on satellite imagery and historical workings, this mineralized fracture system may be more extensive as it can be traced for a total distance of about 6 km (3.7 miles) northwest from the Hackberry Mine.

The poly-metallic vein zones on the Hackberry Property consist of a series of one or more fracture sets located within envelopes of locally argillically altered and sometimes foliated, granitic gneiss. The mineralized zones are generally discontinuous and erratically distributed within the main fault structures and their splays. Widths of individual vein sets vary greatly, randomly pinching and swelling from 0.3 to 1.5 meters (1 to 5 feet) with quartz-rich breccia- and vein-bearing zones reaching widths of 15 meters (50 feet) and variable mineralized strike lengths ranging from 6 to 180 meters (20 to 600 feet). The main Hackberry lode is an exception as the mineralized vein breccias vary from 122 to 335 meters (400 to 1100 feet) in length and 1.5 to 21 meters (5 to 70 feet) in width (Malkoski, 1985).

The mineralized fracture zones contain drusy to vuggy, locally cockscomb, white to clear, to slightly greenish quartz veinlets, lenses and breccia matrix containing up to 20 percent disseminated sulfide minerals. Primary sulfide minerals consist of moderate- to coarse- grained galena and sphalerite as intergrown aggregates and veinlets. Minor amounts of pyrite occur as disseminated patches and grains. Locally chalcopyrite is rarely intergrown with galena and sphalerite as is possible tetrahedrite. Primary sulfide minerals are present but not overly common in surface exposures and on historic Mine dumps. Alternatively, above the water table, oxidized varieties of the primary sulfide minerals prevail (cerussite, smithsonite, hemimorphite, malachite, chrysocolla). An unidentified black, sooty, mineral, observed as a coating on galena during the Property inspection, and noted by Malkoski (1985), may be argentite (silver sulfide). The mineralized zones, or lodes, usually have well defined boundaries with their long axis paralleling the host structure, although cross-cutting mineralized veinlets are present.

#### **7.5.1 Description of the Main Hackberry Mineralized Zone.**

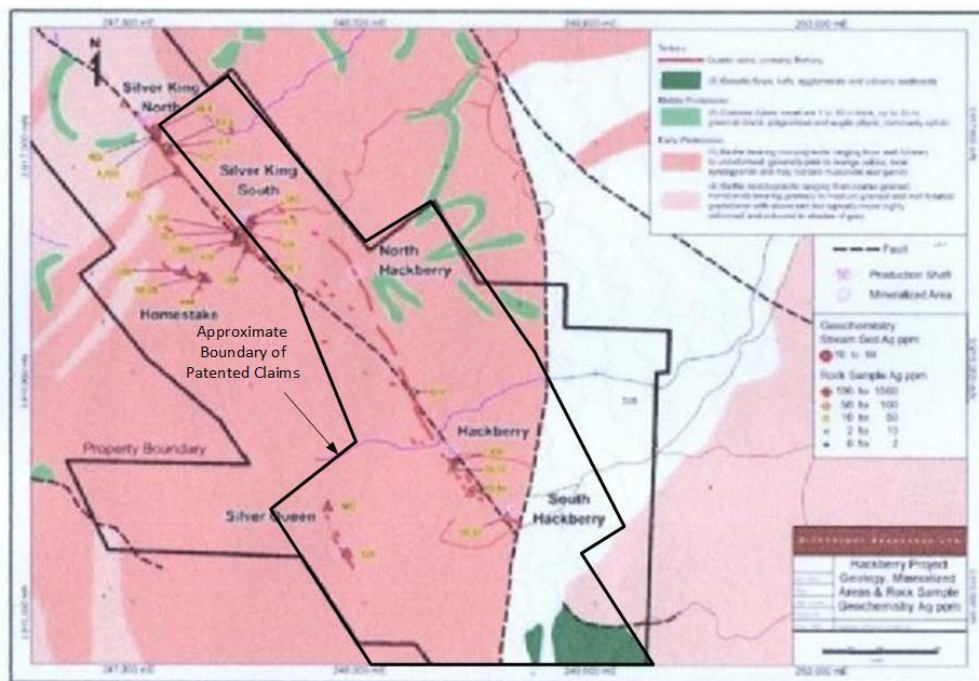
The most significant mineralized zone explored to date on the Property is the Hackberry vein zone, hosting the Hackberry and South Hackberry Mines. The decline shaft entrances for the Mines are located on the Sunshine and South Hackberry patented claims respectively. The mineralized zone continues intermittently approximately 1.75 km (1.1 miles) to the northwest of the Hackberry Mine to the North Hackberry prospects (see **Figure 7.2**). Neither the northern nor southern terminations of the mineralized zone have been delineated. The northern part of the zone appears to diffuse into several joint sets while the southern end is covered by a thick colluvium deposit, beyond which there appears to be no obvious indications of the mineralized structure in outcrop. The zone averages about six meters (20 feet) wide but reaches its widest surface expression of 21 meters (70 feet) approximately 240 meters (787 feet) northwest of the Hackberry decline shaft. The mineralized zone forms a broad “S” curve striking from 323° to 337° azimuth, dipping southwesterly from 39° to 63°, flattening as the lode trends more westerly and steepening, locally to near vertical, between bends (Malkoski, 1985). Flexures in structures such as this can be favorable sites for deposition of high-grade mineralized shoots.

A vitrophyre (siliceous) dike forms the footwall to the main Hackberry lode at the surface near the Hackberry Mine (DeMatties, 1979; Malkoski, 1985), but elsewhere the dike acts locally as a host to mineralization. As the mineralized zone reaches the North Hackberry surface workings, the dike-like appearance fades, and the zone splays into a series of locally intense joint sets, parallel shears, and veinlets. Locally intense argillic alteration of the hanging wall granitic gneiss occurs on the surface over a thickness of 0.5 to 6 meters (1.5 to 20 feet) along southern extents of the mineralized lode becoming less common to the northwest.

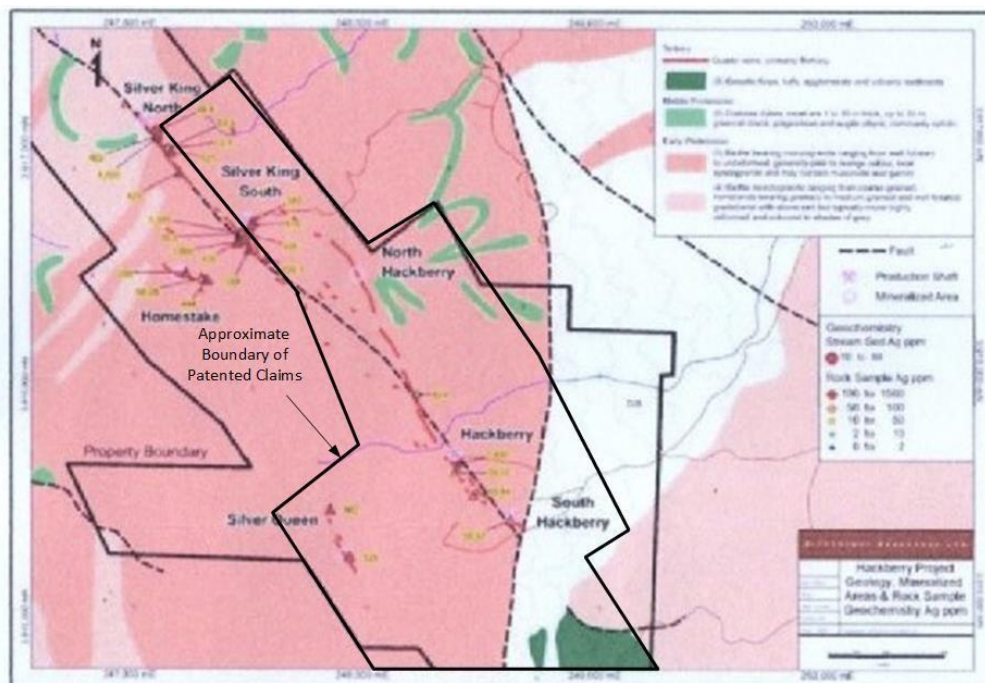
The sub-surface expression of the mineralized zone as originally described by Watts (1912) and Johns (1919) and summarized by Malkoski (1985) and Hamm (1987), occurs as a lens of vein breccia, mostly incorporated within the “vitrophyre” dike rock described by Malkoski (1985), and to a lesser extent, within granitic gneiss country rock. The mineralized lodes followed the dike along a northwesterly strike, dipping 35° to 45° to the southwest. The strike length of the northern part of the more recently mined lode was about 120 meters (400+ feet) on the 200-level of the Mine and about 215 meters (700 feet) on the 600-level. The upper reaches of the mineralized zone did not outcrop, terminating about 60 meters (200 feet) down-dip below the surface with the lower reaches extending to between the 600- and 800-levels, likely defined by lower silver grades at the time of mining (1919 metal values). The silver-rich mineralized lens raked approximately 60 degrees to the northwest. The higher-grade core was approximately 0.3 to 1.5 meters (1 to 5 feet) thick above the 500-level widening down-dip to about 4.8 meters (16 feet) on the 600-level (Malkoski, 1985). Following Mine closure in 1919, 3700 tons (3,356 tonnes) of silver-rich, poly-metallic mineralization from the lower and northern levels of the mineralized body were milled and returned 0.11 oz/t (3.77 grams/tonne) gold and 21.87 oz/t (749.8 grams/tonne) silver (Malkoski, 1985).

The composition of the mineralized lodes observed on the surface by Malkoski (1985) consisted of quartz vein breccia containing up to 20 percent coarse, euhedral, galena and sphalerite in aggregates and cross-cutting quartz stringers and veinlets. Locally minor fine-grained galena, tetrahedrite, pyrite and chalcopyrite occurred as disseminated grains and patches.

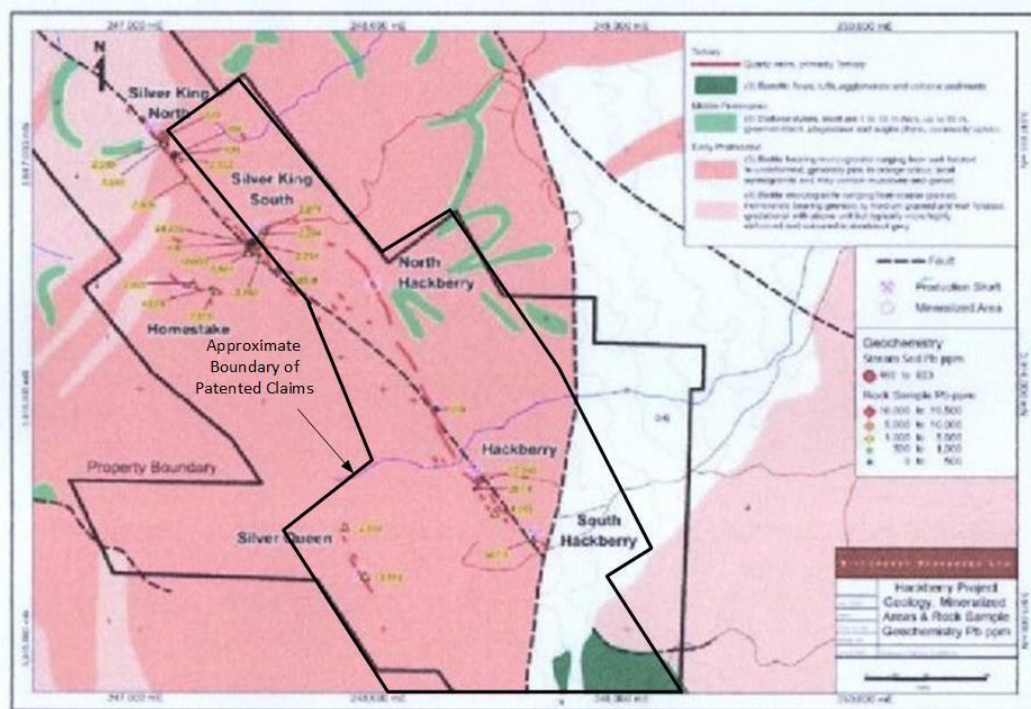
Analytical results from surface rock and dump sampling conducted by Malkoski (1985), and by Adams (2017), during a Property inspection (Sample HBY-001), indicate that most of the anomalous samples occur along the poorly exposed, southern extent of the Hackberry Lode. The samples were collected along an approximate 315meter (1033-foot) strike length of the vitrophyre (siliceous) dike. Some of the more strongly anomalous results are shown directly below and in **Figures 7.5, 7.6, 7.7, and 7.8** and **Table 14.1**.



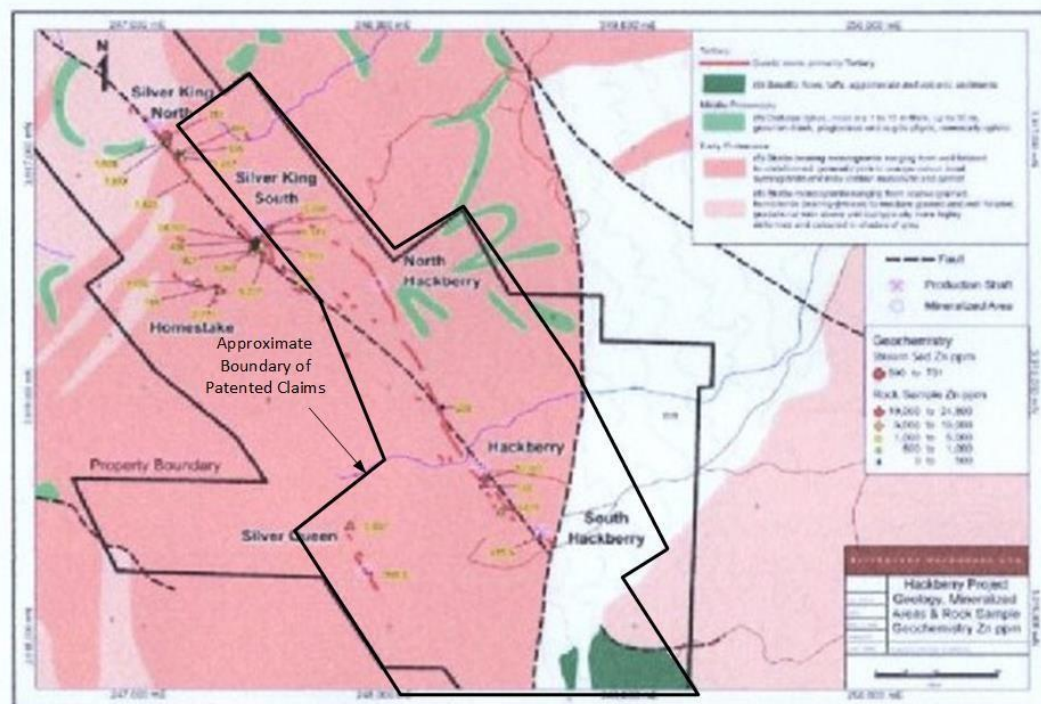
**Figure 7.5.** Geochemical Sample Locations, Hackberry Property, Mohave County, Arizona



**Figure 7.6.** Ag Analyses, for Select Samples, Hackberry Property, Mohave County, Arizona



**Figure 7.7.** Pb Analyses, for Select Samples, Hackberry Property, Mohave County, Arizona



**Figure 7.8.** Zn Analyses for Select Samples, Hackberry Property, Mohave County, Arizona

## 7.6 Metal Zoning

Malkoski (1985) described a vertical mineral zoning pattern on the Property based on his field mapping, research of available literature, and an emphasis on rock geochemistry analyses. Malkoski proposed an upper quartz zone, an intermediate precious-metal and sulfide zone, and a lower base-metals zone. Paraphrased from his property report, the zoning scenarios are as follows:

**Upper Quartz Zone** – The upper quartz zone exists in the outcrop areas of the Hackberry Lode.

- widespread argillic alteration of the granitic gneiss over 3 to 60-meter (1 to 200-foot) wide zones
- characteristic mineral is drusy to vuggy, white-grey-greenish quartz.
- rare, disseminated grains of pyrite, chalcopyrite, and galena, and their pseudomorphs.
- characteristic trace elements.
  - As, Sb forming broad anomalies over mineralized areas.
  - Cu in more localized anomalies.
  - Pb and Zn, which appear to dominate the hydrothermal system, form anomalies over mineralized ground in all zones.
  - Ag in moderate-sized anomalies over mineralized areas.
- vertical extent is unknown.

## 7.7 Metal Zoning

Malkoski (1985) described a vertical mineral zoning pattern on the Property based on his field mapping, research of available literature, and an emphasis on rock geochemistry analyses. Malkoski proposed an upper quartz zone, an intermediate precious-metal and sulfide zone, and a lower base-metals zone. Paraphrased from his property report, the zoning scenarios are as follows:

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- characteristic trace elements.
  - As, Sb forming broad anomalies over mineralized areas.
  - Cu in more localized anomalies.
  - Pb and Zn, which appear to dominate the hydrothermal system, form anomalies over mineralized ground in all zones.
  - Ag in moderate-sized anomalies over mineralized areas.
- vertical extent is unknown.

**Intermediate Precious-Metals and Sulfide Zone** – The intermediate precious-metals and sulfide zone was probably mined from about 30 meters to 150 meters (100 to 500 feet) down-dip in the Hackberry Mine.

- in the upper boundary of the zone, sulfide minerals and Ag ( $\pm$ Au) coincide and appear vertically gradational over about 30 meters (100 feet).
- the lower boundary of the zone is marked by a decrease in Ag ( $^{+}$ Au) and probably occurs at about 180 meters to 245 meters (600 to 800 feet) down-dip in the Hackberry Mine.
- vertical extent in the Hackberry Mine is about 90 to 120 meters (300 to 400 feet); the entire vertical height of the zone has not been mined elsewhere.
- mineralized widths are reported to have increased from 30 cm (1 foot) to over four meters (16 feet) on the 600-level of the Hackberry Mine.
- actual “pay streak” may remain a relative constant thickness while disseminated sulfide minerals become increasingly common over greater widths with increased depth.
- alteration appears to be like the upper quartz zone, but locally more restricted.
- characteristic minerals are dominant galena, subordinate sphalerite and pyrite, minor chalcopyrite and tetrahedrite, and possibly argentite, all in a quartz gangue.
- characteristic elements: Ag ( $\pm$ Au), Pb, Zn.
- zone characterized by low As+Sb and a high Ag/As+Sb ratio.

**Lower Base-Metals Zone** – The lower base-metals zone was likely only encountered in the lower levels of the Hackberry Mine workings on the 700- and 900-levels.

- zone heights and alteration assemblages are unknown.
- mineralogy is like the precious metals zone but with sub- or low-grade Ag ( $\pm$ Au).
- characteristic elements: Pb, Zn, ( $\pm$ Ag, Mo?).

Malkoski (1985) also suggested there may be a lateral structural uplifting of the vertical zoning patterns. He believed that, from east to west, the upper quartz zone crops out at the surface at the Hackberry Mine. He believed that his elemental abundance and metal ratio data support the field evidence. This would suggest as one traverses up elevation from east to west, one is going deeper into the vertical zoning systems, inferring some form of post-mineral structural uplifting from east to west. This same scenario can also be explained by different mineralizing episodes occurring at different elevations in the mineralizing system during multiple, repetitive influxes of the mineralizing fluids in a typical epithermal vein environment (Megaw, 2006).

## 8.0 DEPOSIT TYPE

Historical investigators did not present opinions on the type of hydrothermal mineral deposits of the Hackberry Mine areas. Adams (2017) believed that the Hackberry deposit is best represented as a mesothermal type deposit, or as a transition deposit type between mesothermal and an intermediate-sulfidation epithermal deposit, as described by Sillitoe (2003). This opinion is based on the main characteristics of the Hackberry hydrothermal vein system, listed below, compared to the very similar characteristics of the mesothermal, poly-metallic veins of the nearby Wallapai District, as described in **Section 23.0** below, as well as comparisons to current classifications and nomenclature (Buchanan, 1981; Sillitoe and Hedenquist, 2003, Megaw, 2006).

## Characteristic features of the mineralized zones of the Hackberry deposit

- vein and breccia vein system.
- vein filling: fine-grained to drusy and comb quartz.
- 1-20 percent primary sulfide mineral content of veins.
- elevated Ag ( $\pm$ Au); Ag:Au >500 (based on rock geochemistry of Malkoski, 1985, the Author's rock and dump geochemical analytical results and historic production data).
- common sulfide minerals: galena, sphalerite, + chalcopyrite, + minor pyrite.
- anomalous trace metals: As, Sb.
- associated clay (sericite/argillic) alteration assemblage of host rocks.
- probable association of polymetallic veins with intermediate intrusive (extrusive?) volcanic rocks.

## 9.0 EXPLORATION

There has been no modern-day exploration of the Property as of the effective date of this Report.

Limited historical exploration was conducted on the Property by various companies and individuals as noted in **Section 6**, however detailed data on the type, location and results of that exploration are lacking. An exception is work conducted by Malkoski (1985), who, utilizing a combination of reconnaissance geological mapping, rock geochemistry, metal ratios, and metal zoning data, identified several potential exploration drill targets, which to the Author's knowledge, have not been tested. Due to the historical nature of these data, the information related to these exploration targets has not been verified by a qualified person, as defined in NI 43-101, therefore there is no guarantee as to the accuracy or completeness of the actual data or the supporting documentation. However, the Author believes, to the best of his knowledge, that Malkoski's exploration targets have merit, and thus are summarized below and the target areas are shown on **Figure 9.1**.

**South Hackberry Mine** – southern extension of mineralized zone mined on the 600- to 700 level of the Hackberry Mine.

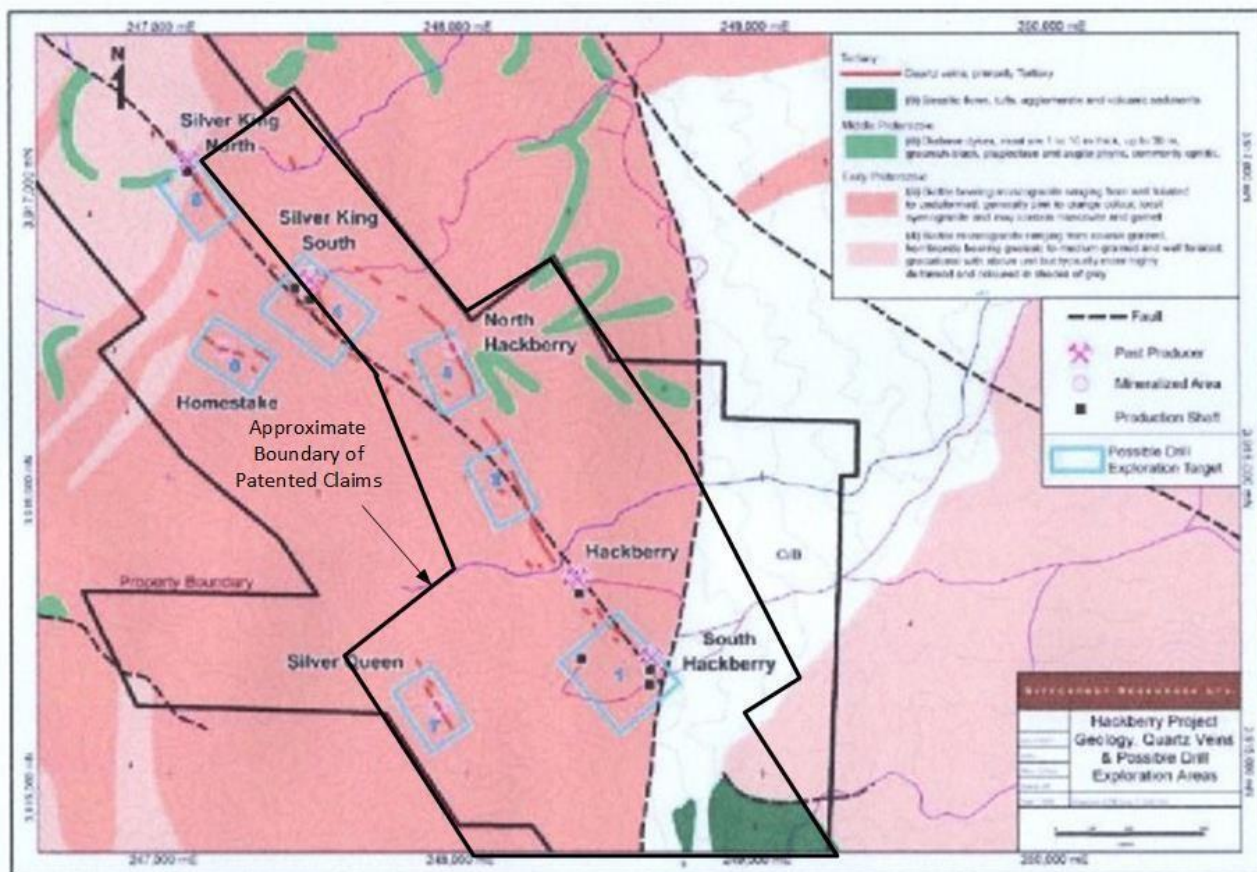
Supporting Data – anomalous surface geochemical results continue southeastward from the Hackberry Mine and historical records of the zone trending beyond the underground Hackberry workings into, and beneath, the historical South Hackberry Mine workings.

**North of the Old Hackberry Mine** – northern extension of Hackberry mineralized zone about 400 meters (1,310 feet) northwest of Hackberry Mine.

Supporting Data – weak surface geochemical results extending from the Hackberry Mine area; metal ratios and precious metal zoning on surface suggests target may be deep.

**Northern Hackberry vein system** - about 800 meters (2,625 feet) northwest of Hackberry Mine.

Supporting Data – Hackberry vein system consists of lenses of vein breccia; weak surface geochemistry suggests the target zone is likely above the intermediate precious metal sulfide zone.



**Figure 9-1.** Exploration Drill Target Areas of Malkoski (1985), Hackberry Property, Mohave County, Arizona

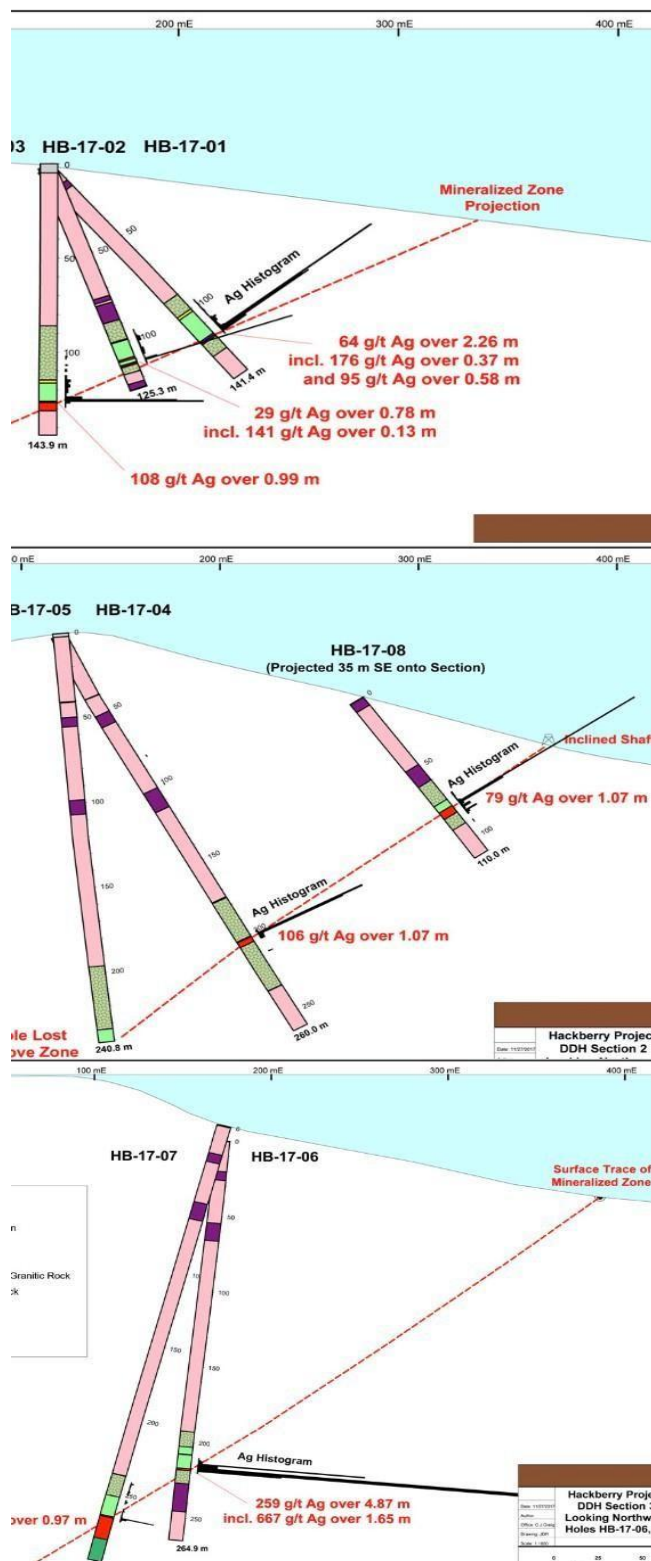
## 10.0 DRILLING

Recent core results are shown in **Table 10.1** and **Figure 10.1** below. The nine holes have been drilled on the property with an average drill depth of 609 ft. The average width of the vein cross section is 6 ft 4.75 inches. With multiple GPS locations of the vein reaching the surface, the Author has a verified 825-meter strike running in a northwestern direction (see **Figure 9.1**).

**Table 10.1** Verification of Vein Strike

|                       |                                                            |                       |                       |
|-----------------------|------------------------------------------------------------|-----------------------|-----------------------|
| <b>01.</b> 3.21meters | <b>02.</b> 0.97meters                                      | <b>03.</b> 0.99meters | <b>04.</b> 1.07meters |
| <b>05.</b> Lost       | <b>06.</b> 6.52meters                                      | <b>07.</b> 0.97meters | <b>08.</b> 1.07meters |
| <b>09.</b> 0.74meter  | <b>Average Width</b> 1.94meters ( <i>6ft 4.75 inches</i> ) |                       |                       |

**Figure 10.1** Recent Core Drilling Results



## 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

Only minimal rock and stream sediment samples were taken by recent investigators for verification purposes during the initial Property inspection. Verification samples were collected by Glen Adams, a Qualified Person as defined by NI 43-101, while visiting the Hackberry Property on September 8 and 9, 2016. Analytical results of samples HBN-002, HBN-006 and HBY-001 are noted in **Sections 7.5.1** and **7.5.2**. All the verification samples remained in Mr. Adams' possession until they were shipped by commercial carrier to ALS Geochemistry ("ALS") in Tucson, Arizona. The samples were prepared for analyses by ALS in Tucson. The analytical procedures (ME-GRA21, OG46 and ME-ICP41) were performed by ALS Canada Ltd. in North Vancouver, BC, Canada, an ISO/IEC 17025 accredited laboratory.

Historic rock sampling was carried out by Malkoski (1985), the analytical results of which are noted in **Sections 7.5.1, 7.5.2, 7.5.3** and **7.5.4**. Malkoski (1985) used the now defunct GCI laboratory of Toledo, California. No references were made regarding sample security, quality assurance or quality control (QA/QC) procedure.

## 12.0 DATA VERIFICATION

The Author has relied upon various authors of historic reports. While reasonable care was taken in preparing this Report, the early historical information has not been well documented or corroborated. Where possible, referenced reports were examined from alternative sources to verify authenticity. As many of the older reports were originally private company reports supplied by the Hughes Family Trust, verification of authenticity was not always possible. For the purposes that the historic reports were used, the Author, as a Qualified Person, believes to the best of his knowledge that the reports should be considered reliable unless otherwise stated in this Report.

## 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

No modern-day Mineral Processing or Metallurgical Testing has been completed at the Site. Historical data regarding silver-rich, poly-metallic mineralization from the Hackberry Mine suggested that expected recovery rates should be approximately 50 percent of the silver and gold, 90 percent of the lead, and 50 to 60 percent of the zinc (Breen, 1918). No recovery data pertaining to platinum or palladium was available for this report. The following areas of metallurgical testing are proposed.

- Head Assays: Determine the most effective analytical techniques for recovering gold (Au), Silver (Ag), Platinum Group Metals (PGMs), and Rare Earth Elements (REEs).
- Rougher Flotation: Gold from composites can be floated using simple reagent suite consisting of potassium amyl xanthate (PAX), Aeropromoter™, and a frother. The flotation test will be more successful with a finer grind. Gold recovery will be higher, but the concentration grade will be lower. Most of the gold will float in the first three minutes. Sulfidization of the feed material may improve gold recovery.
- Cleaner Flotation: Gold recovery may increase with a combined rougher concentrate and cleaned scavenger concentrate with regrind.
- Whole Ore Leach Tests (see **Section 17**): Amino acid (no cyanide) leach tests may show that the finer grind sizes will result in improved gold extraction. A particle size of 200 mesh may result in the highest extraction. Whole Ore Leach may be the best option for this deposit. Leach tests should be completed at

lower levels to decrease consumption. Gold extractions will be significantly higher when tests are maintained at higher concentrations.

- Mineralogy: Determine bulk major and minor mineralogy of all rock types, with emphasis on Au, Ag, PGMs, and REEs.
- Gravity: Early reports on the character of the lode ore suggest friability (free gold). While this may be possible, the bulk of gold is directly amino acid leachable and so a gravity circuit may not be feasible. • Grindability: Determine Bond's ball mill work indices for the bulk ore. The desired work indices should be 14.0 with the ball mill able to process +/- 840 tons per day to produce a product of P<sub>80</sub> of 200 mesh at this index.

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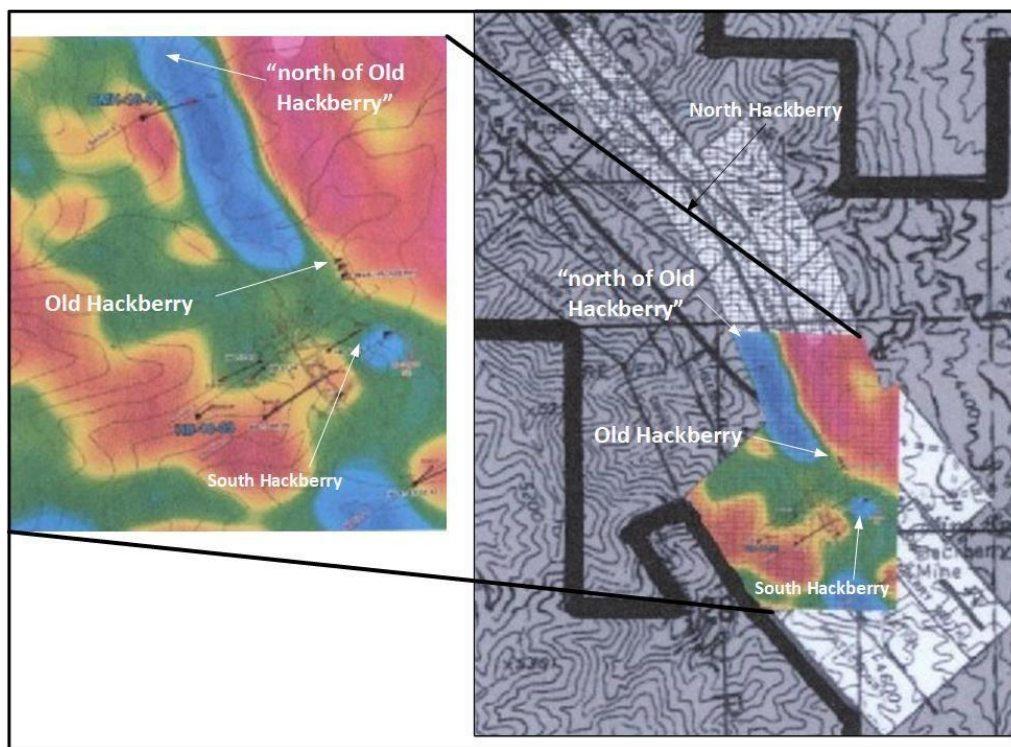
## 14.0 MINERAL RESOURCE ESTIMATE

A mineral Resource estimate is here provided for the Property with the caveat that this Valuation qualifies as “Indicated” and “Inferred” Resources based on detailed geologic modeling and limited analytical data. Historic mineral Resources estimates are stated in **Section 6.3**.

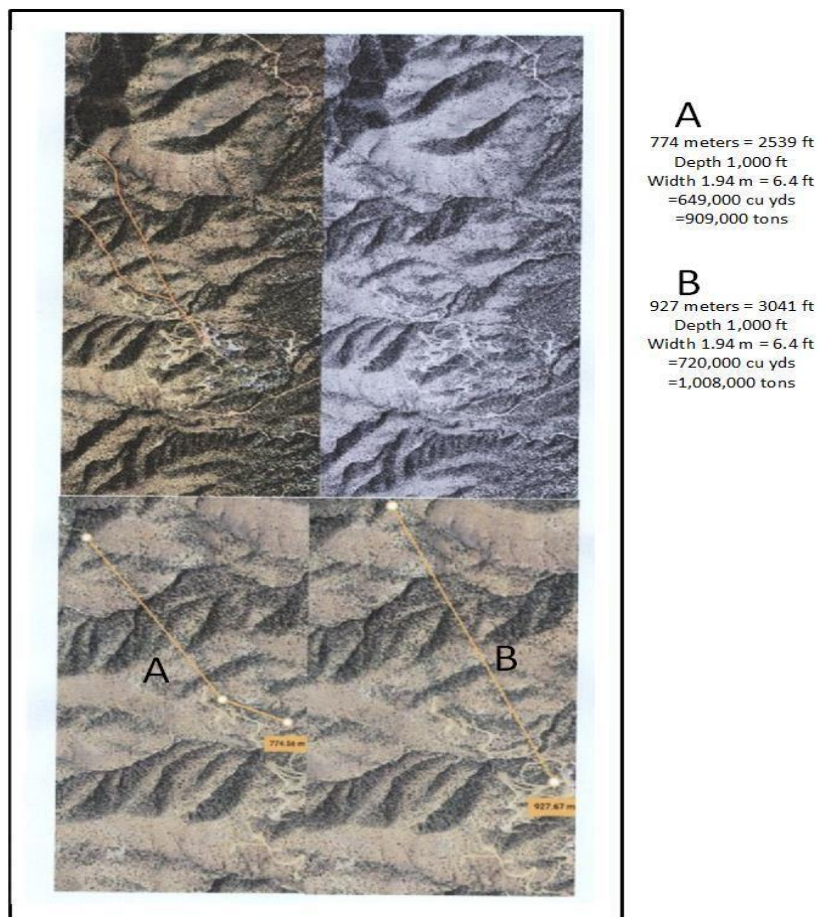
The Author has reviewed all available estimates of the volumes (in short tons) of each of the three Hackberry Mine Sites. The interpreted volumes of South Hackberry and the Old and North Hackberry Mine Sites are shown below as “Indicated Resources”. The estimated volume of ore shoots (“Inferred” Resources) has been calculated by making assumptions of shoot/vein length from a magnetic survey (1000 meters, 3300 feet, **Figure 14.1**), from a satellite trace of the ore shoot/vein (774 meters, 2539 feet, “A” in **Figure 14.2**), and from the literature (825 meters, 2722 feet). If we assume the width of the shoot/vein to be 1.94 meters (6.39 feet, from the literature) and the depth to be 259 meters (850 feet), the calculated volume of the “Inferred” ore shoot is:

$$\begin{aligned} 2842 \text{ ft} \times 850 \text{ ft} \times 6.39 \text{ ft} &= 15,436,323 \text{ ft}^3 \\ 15,436,323 \text{ ft}^3 / 27 &= 571,716 \text{ yd}^3 \\ 571,716 \text{ yd}^3 \times 1.5 &= 860,000 \text{ tons} \end{aligned}$$

**Figure 14.1** Magnetic Survey Showing Non-ferrous Areas (blue) in Relation to Areas of Indicated and Inferred Resources



**Figure 14.2** Length of Ore Shoot Based upon Satellite Imagery



The Author has reviewed all available estimates of the grades (in ounces per short ton) of each of the MOI, gold, silver, platinum, and palladium for the period from 1884 to 2022 (**Table 14.1**). While there is historical basis for the older estimates of silver, the historical values cited in the literature for gold, platinum, and palladium are highly suspect. Because modern assay protocols are much more efficient at detecting these MOI, only the most recent assay values are used in this Valuation for both the in-ground resource and tailings estimates (**Table 14.1**).

Silver has a wide range of grades (just over 1 ounce per ton (OPT) to 300 OPT) established between 1884 and 2022 in the Hackberry Properties. The disparity lies in the media being sampled. Tailings piles typically yield a grade of less than 1 OPT (but may be as high as 50 OPT). Assay samples from fracture or fault intersection in a shoot may yield grades upwards of 100 OPT. A conservative value of 20.9 OPT is used in this Valuation as an average of all Resources that may be mined. Although not added to the current Valuation, silver has an isotope that, when stabilized, may add as much as 50% of value to the silver Resource.

Gold has not been actively recovered in the lifetime of the Hackberry Properties. There is a wide range of assay values (0.08 OPT to 5.26 OPT) for gold in **Table 14.1**. An average value of 1.18 OPT is used in this Valuation. Although not added to the current Valuation, gold has an isotope that, when stabilized, may add as much as 20% of value to the gold Resource.

Platinum has never been sought after or recovered in the long history of the Mines and it is not abundant in these Properties. An average value of 0.011 OPT is used in this Valuation (**Table 14.1**). Although not added to the current Valuation, platinum has three isotopes that, when stabilized, may add value to the platinum Resource.

Palladium has never been sought or recovered in the long history of the Hackberry Mines, but it is abundant in these Patented claims (**Table 14.1**). An average value of 0.45 OPT is used in this Valuation. Although not added to the current Valuation, palladium has three isotopes that, when stabilized, may add value to the palladium Resource.

**Table 14.1** Grade Determination of the Hackberry MOI from 1874 to Present

| Date     | Silver OPT | Gold OPT | Platinum OPT | Palladium OPT | Reference              | Note           |
|----------|------------|----------|--------------|---------------|------------------------|----------------|
| 1884     | 126        |          |              |               | ?                      | vein           |
| 1912     | 156        |          |              |               | Ridenaar in Watts 1912 | shoot          |
| 1912     | 122-300    |          |              |               | Ridenaar in Watts 1912 | shoot          |
| 1912     | 150-180    |          |              |               | Ridenaar in Watts 1912 | vein           |
| 1918     | 25         | 0.1      |              |               | Johns 1918             | shoot          |
| 1918     | 20         | 0.08     |              |               | Breen 1918             | shoot          |
| 1919     | 32         |          |              |               | Breen 1918             | shoot          |
| 1919     | 100        |          |              |               | Breen 1918             | intersection   |
| 1919     | 151.8      | 0.225    |              |               | Robertson 1974         | concentrate    |
| 1919     | 15.2       |          |              |               | Robertson 1974         | shoot          |
| 1919     | 16.14      |          |              |               | Robertson 1974         | shoot          |
| 1919     | 32         | 0.1      |              |               | Warne 1983             | resource       |
| 1919     | 21.87      |          |              |               | Malkoski 1985          | shoot          |
| 1968     | 47.5       |          |              |               | Hamm 1987              | tailings       |
| 2017     | 1.03       |          |              |               | Adams 2017             | tailings       |
| 2017     | 2.35       |          |              |               | Adams 2017             | tailings       |
| 2017     | 2.01       |          |              |               | Adams 2017             | tailings       |
| 2017     | 50.44      |          |              |               | Adams 2017             | outcrop        |
| 2022     | 49.95      | 5.26     | 0            | 0.88          | Vesta Minerals 2022    | vertical shaft |
| 2022     | 0.34       | 0.08     | 0.0011       | 0.14          | Vesta Minerals 2022    | lower shaft    |
| 2022     | 48.47      | 0.11     | 0.0014       | 0.03          | Vesta Minerals 2022    | main shaft     |
| 2022     | 0.44       | 0.12     | 0.03         | 0.34          | Vesta Minerals 2022    | upper shaft    |
| 2022     | 5.29       | 0.34     | 0.02         | 0.84          | Vesta Minerals 2022    | upper shaft    |
| sum OPT  | 104.49     | 5.91     | 0.0525       | 2.23          |                        |                |
| OPT avg. | 20.90      | 1.18     | 0.011        | 0.45          |                        |                |

The results of the five assays (total scans for gold, silver, platinites, and Rare Earth Elements (REEs)) are included in **Appendix E**. The abundance of REEs in the Hackberry Properties (**Table 14.2**) will add extra value to the Mines Resources in the future.

**Table 14.2** Concentrations of Selected Rare Earth Elements (from **Appendix E**)

| REEs    |                  |                  |                |                |                   |
|---------|------------------|------------------|----------------|----------------|-------------------|
|         | Scandium<br>(Sc) | Scandium<br>(Sc) | Cerium<br>(Ce) | Cerium<br>(Ce) | Neodymium<br>(ND) |
|         | ppm              | OPT              | ppm            | OPT            | ppm               |
|         | 16.88            | 0.60             | 4.55           | 0.16           | 7.87              |
|         | 57.24            | 2.02             | 22.25          | 0.78           | 11.39             |
|         | 60.63            | 2.14             | 23.64          | 0.83           | 8.69              |
|         | 57.24            | 2.02             | 130.91         | 4.62           | 49.9              |
|         | 70.62            | 2.49             | 18.77          | 0.66           | 7.2               |
| Total   | 262.61           | 9.26             | 200.12         | 7.06           | 85.08             |
| Average | 52.52            | 1.85             | 40.02          | 1.41           | 17.02             |

The Indicated resources (South Hackberry, North and Old Hackberry, and tailings) and Inferred resources (the ore shoots identified by geophysics and aggregate) show that the total short tons to be mined is 2,100,000 (**Table 14.3**). Using spot market values of March 04, 2026, and the calculated ounces of each Metal of Interest (MOI) (**Table 14.1**), a Valuation of **\$6.96 billion** (**Table 14.4**) is achieved.

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**Table 14.3** Estimated Ounces and Grades of Metals at the Hackberry Mine

| Indicated resources        | Au oz                   | Au oz                  | Pt oz               | Pd oz                  | Sc oz                   | Total                   | Indicated resources        |
|----------------------------|-------------------------|------------------------|---------------------|------------------------|-------------------------|-------------------------|----------------------------|
| Price/Oz                   | \$5209                  | \$96                   | \$2234              | \$1739                 | Private contract        |                         | Price/Oz                   |
| South Hackberry            | \$2,458,648,000         | \$802,560,000          | \$9,829,600         | \$313,020,000          | Private contract        | \$3,584,057,600         | South Hackberry            |
| North & Main Hackberry     | \$2,765,979,000         | \$902,880,000          | \$11,058,300        | \$352,147,500          | Private contract        | \$4,032,064,800         | North & Main Hackberry     |
| Ore Shoots                 | \$5,286,093,200         | \$1,725,504,000        | \$21,133,640        | \$672,993,000          | Private contract        | \$7,705,723,840         | Ore Shoots                 |
| Tailings (all)*            | \$92,788,692            | \$51,321,600           | \$2,703,140         | \$86,080,500           | Private contract        | \$232,893,932           | Tailings (all)*            |
| <b>Total Indicated USD</b> | <b>\$10,603,508,892</b> | <b>\$3,482,265,600</b> | <b>\$44,724,680</b> | <b>\$2,198,965,500</b> | <b>Private contract</b> | <b>16,329,464,672</b>   | <b>Total Indicated USD</b> |
|                            |                         |                        |                     |                        |                         |                         |                            |
| Inferred Resources         | Au oz                   | Au oz                  | Pt oz               | Pd oz                  | Sc oz                   | Total                   | Inferred Resources         |
|                            |                         |                        |                     |                        | Private contract        |                         |                            |
| South Hackberry            |                         |                        |                     |                        |                         |                         | South Hackberry            |
| North & Main Hackberry     |                         |                        |                     |                        |                         |                         | North & Main Hackberry     |
| Aggregate                  | \$1,721,053,600         | \$561,792,000          | \$6,880,720         | \$219,114,000          | Private contract        | \$2,508,840,320         | Aggregate                  |
| <b>Total Inferred USD</b>  | <b>\$1,721,053,600</b>  | <b>\$561,792,000</b>   | <b>\$6,880,720</b>  | <b>\$219,114,000</b>   | <b>Private contract</b> | <b>\$2,508,840,320</b>  | <b>Total Inferred USD</b>  |
| <b>Total Inf + Ind USD</b> | <b>\$12,324,562,492</b> | <b>\$4,044,057,600</b> | <b>\$51,605,400</b> | <b>\$2,418,079,500</b> | <b>Private contract</b> | <b>\$18,838,304,992</b> | <b>Total Inf + Ind USD</b> |

Note: Ti is Titanium oxide, Ni is Nickel cathode; Sc, Ce, and Nd are 99.99% pure metals

**Table 14.4** In-Ground Valuation of Resources in the Hackberry Mine Properties

| Indicated resources               | Tons      | Au oz        | Ag oz        | Pt oz        | Pd oz        | Sc oz        |
|-----------------------------------|-----------|--------------|--------------|--------------|--------------|--------------|
| <b>Grade</b>                      |           |              |              |              |              |              |
| <b>South Hackberry</b>            | 400,000   | 472,000      | 8,360,000    | 4,400        | 180,000      | 740,000      |
| <b>North &amp; Main Hackberry</b> | 450,000   | 531,000      | 9,405,000    | 4,950        | 202,500      | 832,500      |
| <b>Ore Shoots</b>                 | 860,000   | 1,014,800    | 17,974,000   | 9,460        | 387,000      | 1,591,000    |
| <b>Tailings (all)</b>             | 110,000   | 17,820       | 534,600      | 1,210        | 49,500       | 203,500      |
| <b>Total Indicated Ounces</b>     | 1,820,000 | 2,035,620    | 36,273,600   | 20,020       | 819,000      | 3,367,000    |
|                                   |           |              |              |              |              |              |
| <b>Inferred Resources</b>         |           | <b>Au oz</b> | <b>Ag oz</b> | <b>Pt oz</b> | <b>Pd oz</b> | <b>Sc oz</b> |
|                                   |           | (1.18 opt)   | (20.9 opt)   | (0.011 opt)  | (0.45 opt)   | (1.85 opt)   |
| <b>South Hackberry</b>            | 400,000   |              |              |              |              |              |
| <b>North &amp; Main Hackberry</b> | 450,000   |              |              |              |              |              |
| <b>Aggregate</b>                  | 280,000   | 330,400      | 5,852,000    | 3,080        | 126,000      | 518,000      |
| <b>Total Inferred Ounces</b>      | 280,000   | 330,400      | 5,852,000    | 3,080        | 126,000      | 518,000      |
| <b>Total Inf + Ind Ounces</b>     | 2,100,000 | 2,366,020    | 42,125,600   | 23,100       | 945,000      | 3,885,000    |

#### 14.1 Factors that may affect the Mineral Resource Estimate

The process of mineral resource estimation relies on technical information which requires subsequent calculations or estimates to derive sub-totals, totals, and weighted averages. Such calculations or estimates inherently involve a degree of rounding and consequently introduce a margin of error. The Author considers these errors to be material to the resource estimation.

Areas of uncertainty that may materially impact the Mineral Resources include the following:

- Variations in the forecast commodity price.
- Variations in the assumptions used in the constraining stope shapes, including mining loss/dilution, metallurgical recoveries, geotechnical assumptions, and operating costs.
- Variations in assumptions as to permitting, environmental, and social license to operate. The project currently is not permitted for production.

The Author is unaware of any legal, political, environmental, or other risks that could materially affect the potential development of a mineral reserve.

## 15.0 MINERAL RESERVE ESTIMATE

A “Mineral Reserve” is the economically mineable part of the Mineral Resource for which mining, and processing/metallurgy information and other relevant factors demonstrate that economic extraction is feasible. Based on the above statement, the Valuation presented here does not qualify as “Reserves”.

## 16.0 MINING METHODS

Modern surface mining methods will occupy the first 2 years of mining at the South Hackberry mining claims, **Figures 4.3, 9.1**), when the Mine is re-activated. Approximately 400,000 tons of tailings and aggregate will be mined this way. The volume of the tailings piles was determined by the height of each pile and corresponding footprint of each pile.

The plan for the Hackberry Properties is to extract 2.1 million tons of mineral Resources by mining in twenty years. A proposed Plan of Operations (“POO”) for the Resources is based on the following criteria.

- The cut and fill mining method uses Rock Fill (RF) and Cemented Rock Fill (CRF).
- The ore production rate ramped up to 380 tpd over 330 operating days per year.
- Mill throughput of 532 tpd at a rate of 5 days per week.
- An underground design for 10% planned dilution, 15% unplanned dilution, and a mining recovery of 95%.
- Development drifting and raising of approximately 10,000 feet for the LoM.
- Four operating crews with an average of 16 workers/crew – crews work 10hour shifts, four days on and four days off.

A proposed Mine production schedule calls to produce 380 tpd 7 days per week and 532 tpd of ore processed by the mill working five days per week. Mining recoveries of 95% are planned with a dilution factor of approximately <25%. The ore is to be placed in a stockpile at the mill and a loader is proposed to feed the mill at three eight-hour shifts, five days per week.

### 16.1 Mine Design

The underground mining method proposed for the Hackberry Project is a mechanized cut and fill using RF and CR, based on similar mines in the Yavapai District (Copperstone, Alvarado, Congress). A conventional long hole mining method may also be considered.

The primary ramp development is planned in the footwall of the ore body to access the cut and fill stopes. The main haulage drifts and ramps are planned to be developed at a 14-foot height and 14-foot width. The main ramp is designed to limit curves and turns to promote efficient truck haulage and to reduce ventilation constraints. Muck bays 30 feet deep are planned every 500 feet along the ramp to facilitate the development mucking process. As the

development progresses these muck bays will be converted for use as sumps, transformer bays, storage areas, and exploration drill bays.

The stope access ramps will be developed from the main haulage ramp and is planned at 12-foot height and 10-foot width to allow sufficient access height for highly productive mining equipment. A nominal level spacing of 60 feet is selected, providing access to five 12-foot-high drift and fill cuts from a single access point. The first access ramp is driven at -15% to access the first of five lifts of the stope. The remaining four lifts will be developed by backslashing and ramping up at +15% for each successive lift. Every lift will provide access to the next drift and fill ore production cut which is immediately above the previous cut. Each stope access point also includes a 30-foot muck bay.

The Mine operations schedule is based on 330 days a year, 7 days a week, with up to four 10-hour shifts each working day. The development, stope mining, and backfill schedules will be created monthly. There will be four crews scheduled working a four-on four-off schedule. The ore production rate will be up to 380 tons per day with a 3-year ramp up period. The mill rate will be up to 532 tpd based on a 5-day work schedule. Slower activity in developing new stopes, backfill placement, and unplanned delays brings the total to seven active areas (“Targets”) to be scheduled in the Mine plan. Mining recoveries of 95% will be applied and overall dilution factors will average less than 25%. Dilution factors will be calculated based on internal stope dilution calculations and external dilution factors of 10%. The ore will be placed in a stockpile at the mill and a loader will be employed to feed the mill at a rate of up to 380 tons per day per crew using ten-hour shifts, five days a week. The projected mining method proposed for the Hackberry Mine Project is a mechanized cut and fill using rock fill (RF) and cemented rock fill (CR). A conventional long hole mining method may also be considered.

## 16.2 Production Schedule

The production schedule is up to 380 tpd for mining based upon mining 330 days per year (see **Table 1.3**).

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## 17.0 RECOVERY METHODS

Historically the ore was milled through a gasoline-powered, pilot, 5- or 10-stamp mill. Listed below are 5 processing options. The sale of a dore bar has much lower offtake costs.

**Gravity:** Early reports on the character of the lode ore suggest friability (free gold). While this may be possible, the bulk of gold is directly leachable (without cyanide) and so a gravity circuit (**Appendix D, Figure D-1**) may not be feasible. Gravity separation may be enhanced by grindability, determined by Bond's ball mill work indices for the bulk ore of P<sub>80</sub> of 200 mesh at this index.

**Flotation Producing a Concentrate:** The flotation concentrate is estimated to assay plus or minus 500 grams per ton gold (Au) and would be sold to a broker or smelter. A marketing study is needed to determine the marketability and cost of sales for this grade of Au concentrate. The flotation circuit would consist of a rougher flotation followed by two stages of cleaners to produce the required grade of concentrate. Recoveries of Au from flotation for high grade saleable concentrate averages approximately 88%.

**Flotation and Amino Acid Leach of the Concentrate:** The objective of this process is to produce a rougher concentrate maximizing recovery of gold, then amino acid leach the concentrate and produce a dore bar. Recoveries for gold from flotation concentrate produced for final leach average approximately 90%. Testing for final recovery of gold from leaching the flotation concentrate may require considerable testing (**Appendix D, Figure D-2**).

**Whole Ore Leach (WOL):** WOL utilizes direct leaching of the entire ore feed. This option also includes the production of a dore bar. WOL results in gold extraction of 88% to 97%. WOL exhibits the highest operating costs of these first three options but the increase in recoveries and elimination of concentrate smelter charges make this option economically superior.

**Dry Air Separator System:** DRSS is a system that initially grinds feed ore to anywhere from 200 to 1200 mesh. Then the system separates feed ore with a four-stage vibrating dry separation screen system, a high-powered metal detector for nugget identification and collection, and a dry air separator to reduce the feed to a higher grade. The enriched ore then goes through a closed loop aqua regia system which will further concentrate the precious metals within. A dore bar is produced.

Although the operating costs for the whole ore leaching of Hackberry ore are the highest operating costs of the first four options, the increase in recoveries and elimination of smelter charges make the option economically superior. **Appendix D, Figure D-3** shows a block flow sheet for the whole ore option.

## **18.0 PROJECT INFRASTRUCTURE**

There are currently no remnants of mining equipment or any signs of infrastructure at the Mine site.

### **18.1 Planned Infrastructure**

Within a 30-mile radius of the Site is Kingman, Arizona, which is equipped to provide housing, shopping, and schools for Mine personnel and their families.

#### **18.1.1 Office, Mine Shop, Warehouse & Storage, & Lab/Change House Area**

SOG will construct an office, warehouse, and laboratory buildings, and shops (based on building requirements needed in similar, adjacent, mines in the district).

Office. A 2,000-square foot administration building will house all the administrative and management personnel. It will be a single story pre-engineered, prefabricated, multi-trailer building with corrugated metal roofing and siding located north of the entrance to the plant, outside the fence line. Visitor parking will be provided outside the fence line at the office facilities. Employee parking will also be provided as necessary within the facilities area. This configuration will allow many of the Site's vendors and other visitors to access management and operating personnel without entering the process plant or Mine area.

Mine Shop. A Mine shop will be a prefabricated steel construction butler-type building with tin siding and have approximately 5,400 square feet two-inch rolled fiberglass insulation that will cover the roof and walls, with plywood around the base of the walls. The facility is planned to be built on the northwest side of the facilities area. Two truck bays, compressed air piping, welding equipment outlets, offices and a tool store will be included. The Mine shop will be a "drivethrough" facility with rail placed in the floor to protect the concrete from tracked equipment. Maintenance on all heavy vehicles will be conducted in this shop.

Warehouse and Storage. A 2,600 square-foot warehouse will be located at the south end of the facilities area. The warehouse will be a prefabricated steel construction building with tin siding. All project supplies, except for process plant reagents, will be received, stored, and dispersed from this facility. The facility will include inside storage for parts and supplies, an office, and a tool crib/small parts area. A fenced storage yard south of the warehouse will be used to store large items or bulk materials that can withstand exposure to the elements. The outside storage areas will consist of a compacted, graveled area.

Most reagents and chemicals delivered to the Site will be for use at the process plant or at the laboratory; these materials will be checked in at the main warehouse, then delivered to these facilities and will be stored there. An attached area to the plant facility will provide storage of bulk reagents. The reagent storage and mixing area will have a truck ramp for bulk unloading. The lubricants and oil storage will be located outside on the northeast side of the Mine shop. These will be contained in lined, bermed areas that will drain to a central collection sump to contain any spills that may occur.

Light vehicles and small mobile equipment maintenance will be performed in the smaller shop attached to the warehouse. The area will have reinforced concrete and an overhead crane.

Laboratory/Change House Area. An analytical laboratory will be a single-story pre-engineered building with corrugated roofing and siding located with the change house just east of the entrance to the plant. The laboratory will be approximately 1,750 square feet and consist of a sample preparation area, wet laboratory, environmental laboratory, offices, lunchroom, restrooms, and a future fire assay metallurgical laboratory. A 10-ft double door will provide access at the north end of the building to receive materials into the sample preparation area.

The sample preparation area will be isolated from the analytical laboratory by a wall. It will contain sample crushers, pulverizers, sample splitters, and a dust-collection system to capture and contain any dust generated from this operation.

The analytical laboratory will contain the wet laboratory, reagent storage area, balance rooms, and analytical equipment. Also included will be a facility to collect and manage waste chemicals in the laboratory. Disposal of the chemical or laboratory waste will follow appropriate regulatory requirements dependent upon the waste generated. Laboratory offices are also included in this facility.

The employee change house will be a single-story pre-engineered steel building with corrugated metal roofing and siding located with the laboratory building just to the east of the plant area, inside the fence line. Employees will park in the designated parking area inside the fence and walk about 50 feet to the change house. The change house facility will be approximately 1,750 square feet. Separate changing rooms, with showers and bathrooms, will be provided for men and women. A full septic system capable of 1,500 gallons per day will be in place. Waste products from the laboratory will be generally compatible with the milling operation and will be returned to the milling circuit.

### **18.1.2 Other Necessary Infrastructure**

#### Lube Oil Tank Farm

An outside area for lubricant storage will be located on the north of the Mine shop. This area will contain tanks or totes for engine oil, waste oil, hydraulic oil, gear oil and anti-freeze.

The lubricant storage area will be constructed with containment to prevent hydrocarbon contamination of the surrounding area. The storage areas will drain to a central collection sump where all spills will be collected.

#### Diesel Fuel/Gasoline Dispensing Area

Diesel fuel for the equipment fleet will be located on the north of the Mine shop area outside the building. Pumps and dispensers will be provided for fueling. A drive-through dispensing system will be provided for vehicles and for filling the fuel/lube truck. Two 115 m<sup>3</sup> diesel storage tanks (30,000 gallons each) will be used to store diesel fuel. The gasoline dispensing area will be with the diesel dispensing area. All fuel storage will be constructed with containment to prevent hydrocarbon contamination of the surrounding area. These storage areas will drain to a central collection sump where all spills will be collected.

### Wash Bay

A contained concrete pad will be supplied for washing heavy and light vehicles. The wash station is to be located to the west of the Mine shop and designed as a drive-through facility. Pressure washers and associated hoses/tanks will be provided. This pad will be sloped to the central collection area to prevent any contaminated solution from being discharged. A concrete sump designed to be emptied with a loader will be used to remove mud and material from the facility.

#### **18.1.3 Power**

The electrical power supply for the Site facilities will be provided by on-site generators, which will provide power for the entire facility.

The eventual electric load for the Site's Mine and process facilities is estimated to be 12.5 megawatts and will require a minimum transmission voltage of 13.8 Kilovolt. Power requirements are expected at the Mine, mill, and facilities and will require 4160, 480, and 220/110 voltage.

#### **18.1.4 Water**

Fresh water for the facilities will be supplied by up to three permitted groundwater monitoring wells located after geological and geophysical surveys provide the best sites for groundwater production. Water from any water-based circuits will be transported to the tailings facility via a pipeline and booster system. Water from the existing water wells will be transported to the mill site via a currently installed pipeline and booster system. Both systems will be discharged to the reclaimed water pond with the water from the pond filling the 35-foot-diameter water tank located in the administration area. Water will be supplied from the fresh/fire water tank with a level indicator, to the facilities by pump. Fresh water will be distributed to a gland seal water tank and horizontal centrifugal pumps for seal water for mechanical equipment. Fresh water will also be distributed to a mill process tank for use points in the mill, and to the fire water distribution system for the mill site and administration areas.

Decanted water collected from the reclaim pond, thickeners, and filtering circuit will be collected in the process water holding tank and recycled to the process circuit. Process water will also be pumped from the reclaim pond to the process water holding tank and will be distributed by pump and pipeline to mill usage points.

Drinking water will be set up on a reverse osmosis system or trucked to the Site using a local drinking water vendor.

#### **18.1.5 Communications**

An internal switchboard and telephone system will be provided for communications between the on-site offices in the main office, laboratory, and Mine shop area. Supervisors' and mechanics' vehicles and the process plant and crusher will be equipped with mobile radio units. Supervisors will be equipped with hand-held radios. A satellite phone system will provide external voice and data communications. Cell phone communications are currently available on-site using a local provider. Hand-held radio communication through FM radio communications is currently permitted.

## **18.2 General Sitework**

### **18.2.1 Roads**

The Mine access road is an existing, well-traveled gravel road and jeep trail that leads to the mine Site from Route 66. Several facility roads will be used to access all areas of the Mine, plant, and administration facilities. The Mine access road will be regularly maintained by SOG and will be considered accessible year around.

### **18.2.2 Site Drainage**

Diversion ditches are planned around the entire Site to protect the facilities from damage due to rainfall runoff and to help control sediment runoff.

### **18.2.3 Fencing**

The entire Site including the Mine area and waste dumps will be fenced. A total of up to 45,000 feet of this fence is planned to be put in place and will require minor maintenance. The main facilities will be fenced using approximately 500 feet of 6-foot-high chain link fence, which will tie into the barbed wire fence.

Approximately 200 linear feet of standard 6-foot-high chain link fence will be installed around the outside warehouse yard. The recovery plant building will be fenced with approximately 400 feet of 9-foot-tall chain link fence.

Main access to the Site will be through a controlled security checkpoint. There is no need for allowing through-access to any other areas, so access to the Site will be restricted to those having business with the operation. Other security measures will include gates located on access roads that cross the fence boundaries.

## **18.3 Archeological**

No archeological survey has been conducted but is planned as a requirement of the National Historic Preservation Act, the State Historic Preservation Act, and the land managing agencies.

## **18.4 Waste Disposal**

### **18.4.1 Hazardous Waste**

Hazardous wastes, which will primarily involve waste oils, process reagents, and laboratory chemicals, will be disposed of in a safe and environmentally sound manner. Waste oils will be incinerated or recycled by the supplier, while most reagents and chemicals that require disposal will be used as part of the flotation process. Spills of such materials on-site will be given the highest operating priority and will generally involve the excavation of contaminated soils, neutralization of the affected site, and disposal and/or neutralization of the affected soils onsite or at a licensed facility off-site. The mining equipment on-site will be immediately available for use in such circumstances.

#### **18.4.2 Sewage**

Sewage disposal will be by means of two to-be-installed septic tanks and leach fields. The septic system will be installed at the main office and laboratory complex. Portable toilet systems will be utilized on-site. Liquid waste from the laboratory will be contaminated with various chemicals and cannot be discharged to a drain field. It will be collected in the to-bebuilt concrete cesspool equipped with an automatic sump pump, and periodically pumped with the contents safely disposed of off-site in a legal and environmentally sound manner. Floor drainage from the fueling and lube storage and pumping systems, and the wash-down area will be directed to a collection sump where an oil separator will eliminate grease and oil prior to discharge of the water.

#### **18.4.3 Solid Waste**

Solid waste will be contracted to be removed on a weekly schedule to a permitted landfill.

### **18.5 Transportation**

Except for key management, employees will be transported to and from the Site by company vans and/or buses, when possible, to minimize any impacts from traffic to and from the Site. Employee transportation is included in General and Administrative operating costs. Five, half-ton pickups are planned for general and site transportation requirements of senior personnel.

Support transportation equipment includes a maintenance truck and a welding truck.

## 19.0 MARKET STUDIES AND CONTRACTS

Gold markets are stable, transparent, SOG markets serviced by well-known smelters and refiners located throughout the world. Gold dore will be refined to 0.9999 or 0.99999 purity in the refinery, and, as such, would be a fungible (interchangeable) commodity bought and sold universally. Therefore, no contracts are planned to be negotiated at this stage of the Project. The Project does not plan to have forward sales of gold, nor plan to have any hedging programs currently.

SOG has not conducted any market studies, as gold is widely traded on the world markets. Due to the size of the bullion market, which in 2017 saw a demand for gold of 130.9 million ounces, the production from the Hackberry Mine would perhaps influence gold prices (it is projected to produce about 202,000 ounces per year, approximately 0.16% of world demand). Hackberry will influence global prices in REEs if they are detected in high concentrations as expected.

## 20.0 ENVIRON STUDIES, PERMITTING, & SOCIAL OR COMMUNITY IMPACT

To support the development and approval of a Plan of Operations (“POO”) and State environmental permitting requirements, the following environmental studies/surveys will be conducted:

- Water Resource Assessment (surface and groundwater)
- Threatened and Endangered Species and Wildlife Assessment
- Air Quality Assessment
- Biologic Survey
- Cultural Resources Assessment
- Noise Assessment
- Reclamation Design
- Tailings Storage and Reclamation Pond

In addition to the above-listed studies/surveys, SOG will abide by the following State and Federal permits and plans (**Table 20.1**).

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**Table 20.1** Required State Permits

| STATE AGENCY                                |                                             |                                                                                    |                                   |                                                      |                                                                                |
|---------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------|
| Agency                                      | Item                                        | Description                                                                        | Term                              | Conditions                                           | Permit Disposition                                                             |
| Arizona Department of Environmental Quality | Air Quality - Individual Permit             | Terms for air emissions control. Mobile and stationary emission sources            | 5 years                           | Inspections, monitoring, maintenance, and reporting; | Application acceptance expected                                                |
| Arizona Department of Environmental Quality | Aquifer Protection Permit (APP)             | Dumps, tailings, leaching facilities, processing plant for ground water protection | Life                              | Inspections, monitoring, maintenance, and reporting; | Application accepted expected                                                  |
| Arizona Department of Environmental Quality | AZPDES General Storm Water Permit           | Discharge of storm water                                                           | 5 years                           | Delineated in storm water management plan            | Application acceptance expected                                                |
| Arizona Department of Environmental Quality | Section 404 (Dredge & Fill) Clean Water Act | Discharge of fill material to onsite washes                                        | 3 years                           | Variety                                              | Not Required                                                                   |
| Arizona Department of Water Resources       | Groundwater Withdrawal Permits              | Groundwater withdrawal rights                                                      | 20 years                          | Groundwater withdrawal                               | Application acceptance expected                                                |
| Arizona Department of Water Resources       | Safety of Dams Permit                       | Requirements for dam construction                                                  | Requirements for dam construction | Life                                                 | Not required on BLM property                                                   |
| Arizona State Mine Inspector                | Reclamation Plan                            | Post-mining land uses and plans for regrading                                      | Life                              | Annual updates                                       | Reclamation Plan developed as part of Plan of Operations – acceptance expected |

**Table 20.2** Required Federal Permits

| <b>FEDERAL AGENCY</b>                    |                                  |                                                                  |              |                                                                                                      |                                                          |
|------------------------------------------|----------------------------------|------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| <b>Agency</b>                            | <b>Item</b>                      | <b>Description</b>                                               | <b>Term</b>  | <b>Conditions</b>                                                                                    | <b>Permit Disposition</b>                                |
| Environmental Protection Agency          | NPDES General Storm Water Permit | Discharge of storm water                                         | 5 years      | Delineated in storm water management plan                                                            | Application acceptance expected                          |
| Mine Safety and Health Administration    | MSHA Number                      | Miner registration number                                        | Life         | Operate following MSHA rules                                                                         | To be obtained                                           |
| BLM                                      | Closure Plan                     | Bonding                                                          | Life of Mine | Manage according to plan and update as required                                                      | Closure Plan developed as part of Plan of Operations     |
| BLM                                      | NEPA Review                      | Review of federal agency actions with CEQ oversight              | Life of Mine | Follow the Record of Decision                                                                        | NEPA Review completion expected                          |
| BLM                                      | Plan of Operations               | Plan for mining operations                                       | Life of Mine | Manage according to plan and update as required                                                      | Reclamation Plan developed as part of Plan of Operations |
| Bureau of Alcohol, Tobacco, and Firearms | Blasting Operator Registration   | Registration of all personnel that may handle blasting materials | As needed    | Background and fingerprint checks of all persons with access, update as required by Federal Agencies | Application starts upon contractor identification        |
| Federal Communication Commission         | Radio Licenses                   | Equipment must be licensed                                       | 10 years     | Follow license requirements                                                                          | To be obtained                                           |

## 21.0 CAPITAL AND OPERATING COSTS

### 21.1 Capital Cost Estimate

#### 21.1.1 Introduction

The capital cost estimate includes costs associated with the development of the infrastructure, modular black sand facility, administrative and maintenance infrastructure, and the natural gas, water, and electrical systems.

#### 21.1.2 Basis of Estimate

The main components of the Basis of Estimate are listed in **Table 21.1**. The estimate has an accuracy of +/-25 percent. All costs presented in Q2 2025 U.S. dollars.

A conceptual basis for the development of site infrastructure (mill, processing pad, overburden storage facility, roads, shops offices, process plant, and refinery) was defined as the basis for capital cost estimates. The capital costs were developed based on a nominal mining rate of up to 380 tons per day on average for the Hackberry Mine. The estimate includes facilities, mobile equipment, and sustaining capital required for a year of construction and the initial year of operation. It is estimated that the Hackberry Mine will be mined out in approximately 20 years. Capital costs are described for the general categories of initial capital, sustaining capital, and contingency in **Table 21.1**.

**Table 21.1** Initial Capital, Sustaining Capital, and Contingency

| Capital Description | Estimated Capital Expenditure (\$US) |
|---------------------|--------------------------------------|
| Initial Capital     | \$24,000,000                         |
| Sustaining Capital  | \$12,000,000                         |
| Contingencies (10%) | \$4,000,000                          |
| <b>Total</b>        | <b>\$40,000,000</b>                  |

#### 21.1.3 Direct Costs

The direct costs for the project are divided into categories based on the physical areas of the Project. The estimated costs for the direct costs are detailed in **Table 21.2**.

The Construction capital cost for the Hackberry Mine is listed in **Table 21.3** and consists of costs associated with project construction which is assumed to begin in year -1, prior to production. Sunk costs associated with feasibility studies, permitting, and finance are not included in the evaluation. The construction capital costs include direct costs, indirect costs, owner's costs, and contingency. Direct capital cost includes the plant, initial process area construction, crusher plant, stacker conveyor, infrastructure buildings and services, site roads, and the mobile equipment fleet. Indirect costs include engineering, procurement, and construction management (EPCM). Development cost includes an allowance for property maintenance and development of management team and workforce, and the training of the workforce. A contingency of 5% on direct capital items excluding the mobile equipment

was assumed. The mobile equipment fleet was estimated to cost \$US 3.56 M in year -1, with some of the equipment costs deferred into sustaining capital.

**Table 21.2** Hackberry Mine Project Direct Cost Elements

| Primary Hardware                        | Ancillary Hardware                              | Activities                                 | Site Security                        | Management                                   |
|-----------------------------------------|-------------------------------------------------|--------------------------------------------|--------------------------------------|----------------------------------------------|
| Primary Crusher                         | Quonset Huts<br>Storage Trailers                | Exploration Drilling<br>Sampling Trenching | Claims<br>Acquisition<br>Costs       | Insurance Theft Liability<br>Medical         |
| Secondary<br>Crusher<br>Leaching        | Fuel Tanks Water<br>Trucks                      | Engineering<br>Geologist Prove<br>Reserves | Security<br>Cameras IP<br>Monitoring | BLM Reclamation<br>Bonds                     |
| grinders<br>Conveyors                   | Trucks Excavators<br>Dozers Loaders<br>Aircraft | Line Tailings Ponds                        |                                      | Salaries Employees<br>Management Contractors |
| Concentrators<br>Magnetic<br>Separators | Mill Site Vehicles                              | Drill Wells                                |                                      | Reserve Funds 24-month<br>Prepay             |
| Generators                              | Equipment Leases<br>Backhoe, etc.               |                                            |                                      |                                              |

**Table 21.3** Initial Capital Cost Elements

| Capital Item            | Estimated Capital Cost (\$USD) |
|-------------------------|--------------------------------|
| Direct Capital Cost     | \$11,000,000                   |
| Sustaining Capital Cost | \$10,000,000                   |
| Development Cost        | \$1,800,000                    |
| Contingency 5%          | \$1,200,000                    |
| <b>Total</b>            | <b>\$24,000,000</b>            |

## 21.2 Sustaining Capital

Sustaining capital for the Hackberry Mine includes all capital costs occurring after the startup of production (years -1 and 1). It includes incremental capital for expansion of production capacity (process expansion, haul road construction, stockpile storage expansion). It also included estimates for the creation of a dewatering system (if needed) which is projected to begin in year 2. Capital cost is estimated based on CostMine cost data by InfoMine USA, Inc. and escalated to 2020. Evaluation of the dewater requirement is an area of high uncertainty in the capital cost estimate used here, which assumes the creation of a system. Sustaining capital is listed in **Table 21.4**, including a contingency of 5% on direct items.

**Table 21.4** Sustaining Capital Costs

| Capital Item                    | Sustaining Capital Cost (\$US) |
|---------------------------------|--------------------------------|
| Sustaining Capital              | \$11,400,000                   |
| Remaining Contingency 5%        | \$600,000                      |
| <b>Total Sustaining Capital</b> | <b>\$12,000,000</b>            |

### 21.3 Working Cost

A working cost for the Hackberry Mine equivalent to the estimated operating cost for the first 4 months of production is included in the financial analysis. This cost is \$5 million to allow for the lag between startup of processing and production of the first Au dore. This cost is assumed recovered at the end of operations.

### 21.4 Initial Fills

An allowance of \$5 million was included in the first production year to account for consumable stocks and maintenance materials at startup. This cost is assumed recovered at the end of operations.

### 21.5 Operating Costs

Operating cost assumptions for the Hackberry Mine are based on similar-scale surface and lode mining operations using on-site processing scenarios in Nevada and Arizona, and on process cost estimates for key consumables based on the available metallurgical test data, power consumption estimates, and prevailing costs for key materials in similar Arizona mining operations. The operating cost assumptions are listed in **Table 21.5** based on processed tons of mineralized material.

**Table 21.5** Hackberry Mine Estimated Unit Operating Costs

| Capital Item                                   | Estimated Operating Cost (\$US/process ton) |
|------------------------------------------------|---------------------------------------------|
| Mining (includes waste and stockpile handling) | \$-76.50                                    |
| Processing                                     | \$-36.27                                    |
| Administrative                                 | \$-14.02                                    |
| Transportation and refining                    | \$-1.76                                     |
| <b>Cash Operating Costs</b>                    | <b>\$-128.55</b>                            |
| Production Taxes                               | \$-0.92                                     |
| <b>Total Operating Costs</b>                   | <b>\$-129.47</b>                            |
| Capital Costs                                  | \$-31.80                                    |
| Reclamation                                    | \$-0.57                                     |
| <b>All-in Sustaining Costs</b>                 | <b>\$-161.84</b>                            |

Dewatering operating costs were developed considering historical annual dewatering costs at facilities where a dewatering system is required. Dewatering affects electrical power usage. Dewatering at the claims is likely because groundwater may be encountered at depth. Reclamation cost is consistent with the projected scale of the mining operation. More definitive estimates will require detailed design of the facilities.

## 22.0 ECONOMIC ANALYSIS

Information contained and certain statements made herein are considered forward-looking within the meaning of applicable Canadian securities laws. These statements address future events and conditions and so involve inherent risks and uncertainties. Actual results could differ from those currently projected.

### 22.1 BASIS OF ANALYSIS

An economic evaluation of the Hackberry Mine has been performed based on the schedule of production physicals and the capital and operating cost estimates in **Table 21.1**. The evaluation assumes constant US dollars from June 30, 2025, and does not consider any royalty. Economic analysis of the base case scenario for the Project uses a price of \$1,925 per ounce for gold (Au), \$23 per ounce of silver (Ag), \$913 per ounce of platinum (Pt), \$1228 per ounce of palladium (Pd), and \$1,605 per ounce of scandium (Sc). In addition, \$0.70 per ounce of nickel (Ni) and \$47 per short ton of aggregate is used in this Current PFS. The economic model shows an After-Tax Net Present Value @ 10% (“NPV-10%”) of \$ 3 billion and After-Tax Internal Rate of Return (“IRR”) of 478%. **Table 22.2** summarizes the projected Net Present Value, NPV10; Internal Rate of Return, IRR; years of positive cash flows to repay the negative cash flow (“payback period”) on both After Tax and Before-Tax bases. Construction of the project is assumed to require 1 year before startup of production, with a LoM of twenty years for the Hackberry Mine. Recovery of metal inventory is assumed during rinse down of the process area in the final year.

The gold/silver production model for the Hackberry Mine assumes an inventory buildup of 15% of the recoverable metal in year 1 to account for the startup of the metal processing. Pad inventory is assumed to continue increasing at a rate of 11% of recoverable metal production in year 2. Recovery of the year 1 inventory increment is assumed in year 2 and recovery of the metal inventory continues through year 3.

This evaluation is based on the Hackberry Mine in-situ resource model which consists of material in the “Indicated” and “Inferred Resource” classifications. The existing assay and production results are consistent enough to suggest that further core drilling and analyses will confirm the results of the initial assays and provide a review of the project economics.

### 22.2 ECONOMIC MODEL PARAMETERS

Mining physicals in the production schedule from **Table 1.3** were used with unit operating cost assumptions from **Table 21.5** to calculate annual operating costs for the Hackberry Mine. Capital costs were input on an annual basis using a conceptual schedule for construction in year -1, followed by sustaining capital and contingencies over the LoM. Economic and physical performance parameters are listed in **Table 22.1**, for the base case price assumptions, and for spot price assumptions as of June 30, 2025.

**Table 22.1** Projected Performance Parameters for the Hackberry Mine

| Parameter                           | Base Case Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gold (Au) Price Assumption          | \$5,209.00 per ounce                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Silver (Ag) Price Assumption        | \$96.00 per ounce                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Platinum (Pt) Price Assumption      | \$2234.00 per ounce                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Palladium (Pd) Price Assumption     | \$1,739.00 per ounce                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Scandium (Sc) price Assumption      | Private offtake contracts 0.9999g = \$175 - \$270 / g                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Cerium (Ce) price Assumption        | \$0.10 per ounce                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Neodymium (Nd) price Assumption     | \$2.02 per ounce                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Titanium (Ti) price Assumption      | \$0.054 per ounce                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Nickel (Ni) price Assumption        | \$0.70 per ounce                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Resource – “Indicated”              | Au: 2.1 Mt@ 1.18opt= 2.2 M oz @ \$5209/oz=\$11.4B<br>Ag: 2.1 Mt@ 20.9 opt=43.8 M oz @ \$96/oz=\$4.2 B<br>Pt: 2.1 Mt@ .011 opt=23,100 oz @ \$2234/oz=\$51 M<br>Pd: 2.1 Mt@ .45 opt=945,000 oz @ \$1739/oz=\$1.64B<br>Ti: 2.1 Mt@ .054opt=1.3 M oz @ \$0.054=\$67,408<br>Ni: 2.1 Mt@ .57opt=1.04 M oz @ \$.7=\$619,305                                                                                                                                                                  |
| Resource – “Inferred”               | Au: .28 M t @ 1.18 oz/t=330,000 oz @\$5209/oz=\$1.7 B<br>Ag: .28 M t @ 20.9 oz/t=5.9 M oz @ \$96/oz=\$566 M<br>Pt: .28 M t @ .035 oz/t=3,080 oz @\$2234/oz=\$6.8 M<br>Pd: .28 M t @ .45oz/t=49,500 oz @ \$1739/oz=\$86 M<br>Ti: .28 Mt @ 0.054oz/t=204,400 oz @ 0.054/oz=\$11,038<br>Ni: .28 Mt @ .57opt=159,600 oz @ \$.7=\$112 M<br>Sc: .28 Mt @ 1.85opt=3.8 M oz @ \$18 B<br>Ce: .28 Mt @ 1.41opt=1.6 M oz @ \$0.10/oz=\$159,330<br>Nd: .28 Mt @ .6opt=678,000 oz @ \$2.02=\$1.4 M |
| Resource – “aggregate”              | 280,000 tons @ \$47/ton = \$13.2 M                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Net Cash Flow Yearly Avg            | \$US 500 M                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Average Annual Gold Production      | 125,000 oz                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Average Annual Silver Production    | 2.2 M oz                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Average Annual Platinum Production  | 1,200 oz                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Avg. Annual Palladium Production    | 45,000 oz                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Average Annual Titanium Production  | 77,000 oz                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Average Annual Nickel Production    | 60,000 oz                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Average Annual Scandium Production  | 105,000 oz                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Average Annual Cerium Production    | 80,000 oz                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Average Annual Neodymium Production | 34,000 oz                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Average Total Mining Rate           | 639 tpd/330 days                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Average Processing Rate             | 895 tpd/250 days                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

The Project is planned to be both a surface and a lode mining operation with milling and processing of the ore, with the estimated production of 2.1 million tons from its Indicated and Inferred Resources, grading of 1.18 opt lode gold. The Mine will be owner-operated with a probable lease strategy for mining equipment. The process operations are planned to run at a rate of up to 532 tons per day, five

days a week with 96% availability during the operating days, with mineralized material being crushed, milled, and processed. Gold recovery is expected to average 95% for gold. **Table 14.2** shows the estimated valuation of the Hackberry Mine.

Economic analysis of the base case scenario for the Project uses a price of \$1,925 per ounce for gold. The economic model shows an After-Tax Net Present Value @ 10% (“NPV-10%”) of \$3 billion and After-Tax Internal Rate of Return (“IRR”) of 478%. **Table 22.2** summarizes the projected Net Present Value, NPV-10; Internal Rate of Return, IRR; years of positive cash flows to repay the negative cash flow (“payback period”) on both After Tax and Before-Tax bases.

**Table 22.2** Net Present Value (NPV) and Internal Rate of Return (IRR)

| Project Valuation Overview       | Before Tax           | After Tax            |
|----------------------------------|----------------------|----------------------|
| Net Cashflow                     | 10 B                 | 6.9 B                |
| NPV @ 5.0%                       | 6.1 B                | 4.5 B                |
| NPV @ 7.5%                       | 5.0 B                | 3.7 B                |
| NPV @ 10%                        | 4.1 B                | 3.0 B                |
| Internal Rate of Return (IRR)    | 703%                 | 478%                 |
| Payback Period (years)           | <1 year              | <1 year              |
| Total Initial Capital (millions) | -40                  | -40                  |
| Max. Neg. Cashflow (millions)    | No negative cashflow | No negative cashflow |

**Table 1.3** summarizes the projected production schedule and cash flows. The economic evaluation and schedule is based on Indicated and Inferred Reserves. All or any part of estimated mineral Resources may be converted to mineral Reserves in the future. The projected Life of Mine (LoM) for the Project is twenty years with one year of pre-production and construction. Approximately 2.2 million ounces of gold is projected to be mined and produced for sale. An initial capital investment of \$40,000,000 including contingency/working capital/reclamation is projected in addition to capital from the Mine equipment capital lease.

Following the All-In-Sustaining-Cost (“AISC”) guidelines, LoM average base case Total Operating Cost (including production taxes) is expected to be \$1,000 per ounce. The All-In-Sustaining-Cost is projected to be \$1,050 per ounce. The production cost is calculated to be \$161.84 per ton of ore mined (**Table 21.5**).

## 22.3 SENSITIVITY ANALYSIS

The Project, like almost all precious metals projects, is responsive to changes in the price of its chief commodity, gold. From the base case, a change in the average gold price of US\$100/oz Au would change the NPV (after taxes) by about 1.5% (\$105 million). Likewise, the change in the price of Au affects the net cash flow, the IRR, and the payback period.

## 22.4 COST AND RECOVERY

The Project is very sensitive to the cost of operations, increasing in the NPV-10 for each increase in the operating costs. The Project is less sensitive to variances in the cost of capital, experiencing a decline in the NPV-10 for each increase in the capital costs.

## 22.5 PROJECT TIMELINE

Based upon all the factors enumerated in this Report, the following timeline for completion of all tasks to Mine at full capacity by year 4 is proposed, when lode mining operations begin at all Targets (**Table 22.3**).

**Table 22.3** Tasks to Complete to Mine at Full Capacity

| Year      | -1                                                                                                                                                                                                                      | 1                                                                                                                                                                                                                               | 2                                                                                    | 3                                                                      | 4-19                                                     | 20+                                                |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|
| Tasks     | Bonding, Permitting; Insurance; Build haul roads, pads, and line pits, Exploration drilling, sampling, and analysis, prove reserves. Drill wells. Craft mining plan. Install security measures and begin IP monitoring. | Complete processing facility(ies); Purchase primary hardware; Set up Quonset huts and trailers. Purchase ancillary hardware; Establish management system, employee salaries; Manage contractors. Begin placer mining operation. | Expand mining operations by adding to existing processing facility(ies); add shifts. | Expand mining operations by adding to existing facilities; add shifts. | Complete mining. Mine at full capacity (lode) in year 5. | Demobilize equipment and facilities; reclaim Site. |
| Est. Cost | \$15 million                                                                                                                                                                                                            |                                                                                                                                                                                                                                 |                                                                                      | \$10 million                                                           | \$13 million                                             | \$2 million                                        |

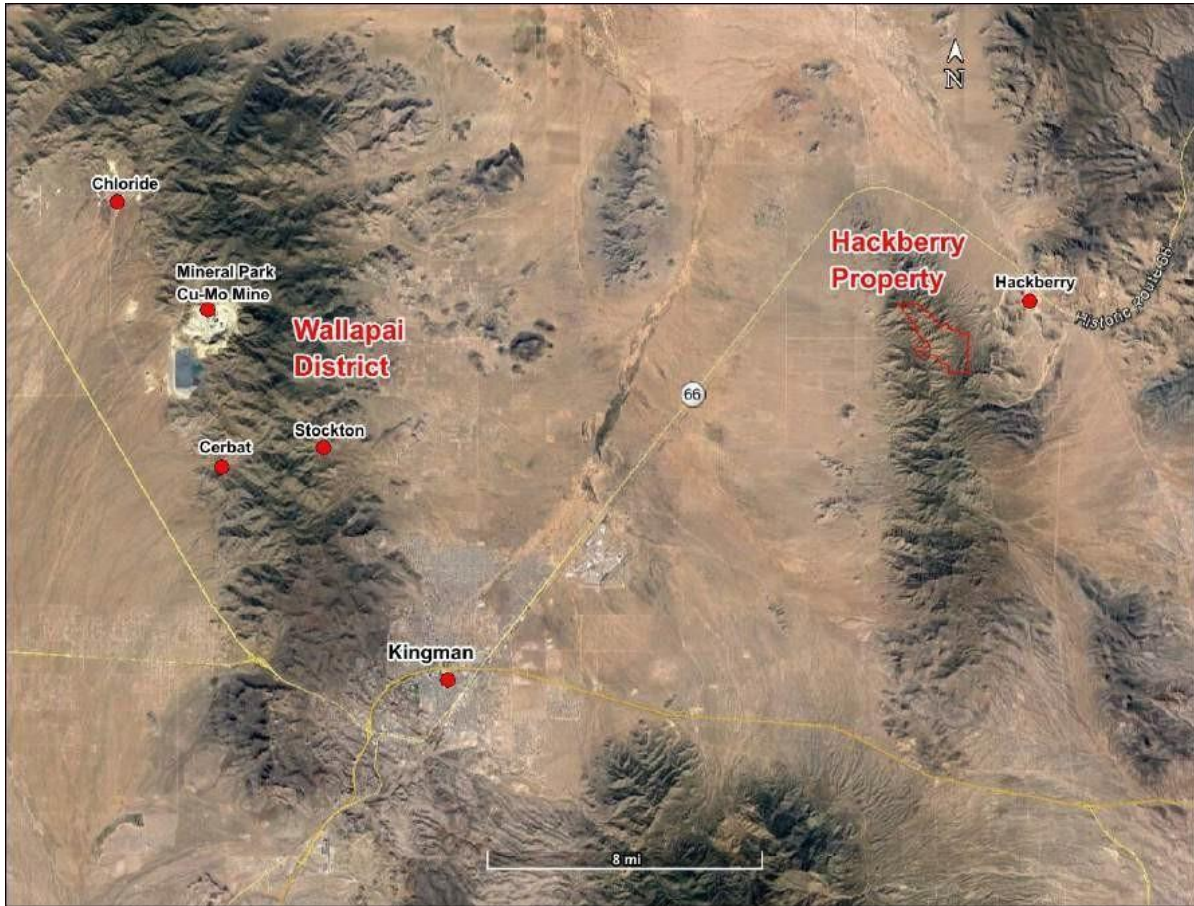
## 22.6 CONCLUSION

The Hackberry Mine is a patented (fee simple) mining Property. A patented mining property is one for which the Federal Government has passed its title to the claimant, making it private land. A person may mine and remove minerals from a patented mining property. The Patented Hackberry Mining Project may be economically viable based on the parameters considered in this Study. The base case scenario will produce 2.5 million recoverable and salable ounces of gold, 44 million ounces of silver, 23,000 ounces of platinum, 896,000 ounces of palladium, 1.5 million ounces of titanium, 1.2 million ounces of nickel, 2.1 million ounces of scandium, 1.6 million ounces of cerium, and 678,000 ounces of neodymium in a twenty-year period. The Project is most sensitive to the spot prices of the metals of interest and to operating costs, but sensitive to a lesser extent to capital costs. The base case economic analysis of the Project at a gold price of \$1,925/oz shows an after tax NPV-10 of \$3 billion using a 320 ton/day (average) crushing/grinding/Whole Ore Leach (WOL) lode processing plant.

## 23.0 ADJACENT PROPERTIES

Other ore deposits in northwest Arizona exhibit characteristics like the Peacock District mineralization and the Hackberry deposit. One such group of ore deposits occurs within the adjacent Wallapai District located north of Kingman, Arizona, and only 30 kilometers (18.6 miles) west of the Hackberry Property (**Figure 23.1**). Because the two closely spaced mining districts share so many significant characteristics, a summary of the Wallapai District is presented here in **Section 23** solely to provide geologic comparisons. The nearby Wallapai District presents a much larger, and significantly more diverse, public data pool compared to the more restricted, mostly unpublished private reports available on the Hackberry Property. The Wallapai District data adds some corroboration to conclusions drawn concerning the Hackberry geological and mineralogical environments.

The Wallapai District is in the Arizona Mohave crustal sub province of Duebendorfer (2015), as is the Hackberry Property. The Wallapai District extends northwest from Kingman, Arizona for about 48 km (30 miles). Included in the district, besides the Hackberry Mine properties, are the Chloride, Mineral Park, Cerbat, and Stockton mining camps. The mining of base- and precious-metal veins in the Wallapai District occurred from 1863 to 1948, from more than 70 mines. Metal production from 1904 through 1948 totaled about \$22.5 million dollars (Dings, 1951). Geologically, the basement rocks of the Wallapai District consist of Precambrian fine- to medium-grained amphibolites, mafic schists, and amphibolitic gneisses (Thomas, 1949; Dings, 1951; Eaton, 1980). Intruding the gneissic terrain are Precambrian monzonitic to granitic bodies ranging in age from  $1,740 \pm 20$  to  $1,340 \pm 20$  million years (Lang, 1988). The Laramide Ithaca Peak monzonitic porphyry stocks, dated at  $73.3 \pm 2.6$  m.y. (Lang, 1988), intrude the central Cerbat Mountains and host the Mineral Park Cu-Mo porphyry deposit. The Mineral Park Cu-Mo deposit, now closed and on care and maintenance status, operated from 1965 to June 2013 producing 614 million pounds (279 million kilograms) of Cu in concentrate, 160 million pounds (72.6 million kilograms) of Cu as cathode, 55 million pounds (25 million kilograms) of Mo in concentrate and historical data indicates over 5 million ounces (155,521 kilograms) of Ag (Simmerman, 2013).



**Figure 23-1.** Wallapai District with Hackberry Property Location, Mohave County, Arizona

Of the over 70 historic poly-metallic vein mines in the Wallapai District, two mines, the Tennessee-Schuylkill mine in the Chloride camp and the Golconda mine in the Cerbat camp, account for over 90 percent of the district's lead and zinc, and accessory precious-metal, production (Dings, 1951). The Tennessee-Schuylkill mine, the more studied of the two deposits is summarized below based on data from Schrader (1909), Thomas (1949), Dings (1951), Eaton (1981) and Lang (1988).

## **24.0 OTHER RELEVANT DATA AND INFORMATION**

The Author knows of no additional relevant data that might materially impact the interpretations and conclusions presented in this PFS.

## **25.0 INTERPRETATIONS AND CONCLUSIONS**

The Hackberry Property consists of silver-rich, poly-metallic, vein deposits hosted within a mixed sequence of Precambrian feldspathic “granitic” gneisses and minor biotitic and biotiteamphibolite gneisses. The Precambrian rocks are intruded by a limited number of intermediate to mafic, probably mid-Proterozoic volcanic dikes that pre-exist the poly- metallic mineralizing events on the Property. Prominent structural fracture zones strike northwestsoutheast for almost 2 km (1.2 miles) along most of the length of the Property dipping southwest at 40° on the southern part of the Property and steepening to 55° to 80° southwest on the northern part. The structural fracture zones host intermittent but persistent, base- and precious-metal bearing quartz vein systems including the past-producing, Hackberry and South Hackberry high-grade silver deposits.

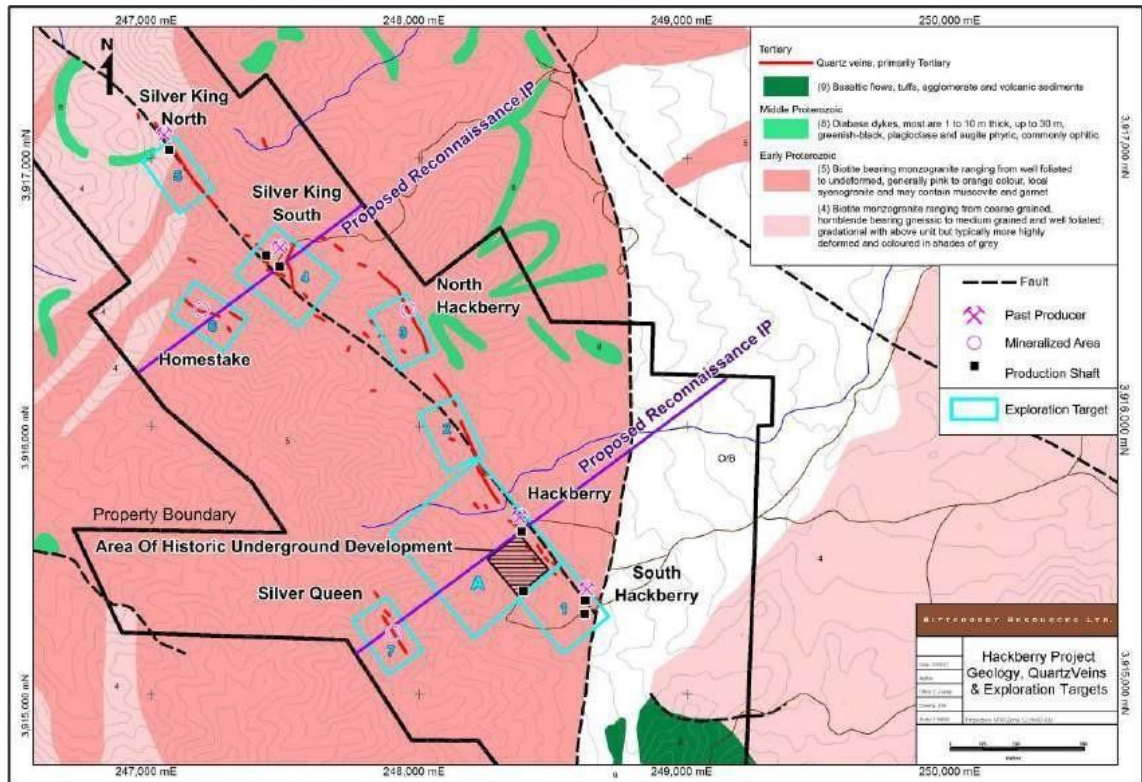
Much of the available data on the Property is in the form of private historical reports, several written prior to 1920. However, for the purposes that the historic reports were used, the Author, as a Qualified Person, believes, to the best of his knowledge, that the reports should be considered reliable unless otherwise stated in the Report.

Based on the available data cited in this Report, as well as a personal inspection of the Property, the following conclusions have been drawn about the Hackberry Property:

- Both the initial and the final mine closures of the Hackberry Mine were for reasons other than the depletion of the silver-rich, poly-metallic mineralization being mined.
- Areas of potential high-grade base- and precious-metal mineralization may remain unmined in the Hackberry mine between the 200-level and the 600-levels estimated to total 100,000 to 150,000 tons (90,710 to 136,065 tonnes) grading about 25 oz/t (857 grams/ton) silver (Johns, 1918, Hamm, 1987). It is unknown what techniques were used to determine the size or grade of the potential Resource. There has been no recent exploration (although it is planned) to substantiate the existence of additional Resources and/or Reserves.
- The high-grade mineralized zone mined on the 400-level of the Hackberry mine appears to be striking southeastward across the southern property boundary and trending into the South Hackberry mine area (Watts, 1912; Hamm, 1987). This high-grade mineralized zone may be present down-dip, below the lowest developed levels of the South Hackberry mine.
- Underground evidence from the Hackberry Mine indicates that hidden high-grade mineralized zones occur at depth but there is no visual evidence of such grades at the surface. Other highgrade mineralized zones having the same hidden characteristics may be present elsewhere along the mineralized structures of the Hackberry Property.

- It is possible that the Hackberry mineralized zone continues southeast of the South Hackberry mine beneath a thick colluvium deposit.
- Anomalous As+Sb and Ag/(As+Sb) surface data suggests that mineralization may plunge to the northwest (Malkoski, 1985), like the high-grade mineralized zones in the Hackberry Mine.
- There has been one investigation (including 9 drills) conducted on the Property since the cessation of mining activities in 1920.
  - There have been no recent, successful attempts to re-enter the underground workings to conduct significant mapping and sampling campaigns.
  - Malkoski (1985) conducted a limited sampling program targeting only the known mineralized zones and historic workings. There have been no Property-scale surface geochemical or geophysical surveys conducted on the Property.
- The geological and structural setting, as well as the silver-rich, poly-metallic mineralization of the Hackberry Property, suggests numerous shared characteristics with the nearby Wallapai Mining District. The more-studied characteristics of the Wallapai District aid in better understanding various characteristics of the Hackberry Property.
- Two deposits in the Wallapai District were mined to depths exceeding 425 meters (1400 feet), suggesting that mineralized zones of the Hackberry Property could extend to greater depths than were historically mined.
- Based on all the available data, the Hackberry Property appears to have excellent exploration potential to host significant undiscovered mineral Resources including:
  - Historically documented, but un-mined, Resources between the 200- and 600- levels, and possibly elsewhere, in the Hackberry Mine workings (**Figure 25.1**).
  - Potential for undiscovered, hidden mineral Resources or continuations of mineralized zones down-dip beneath, or along strike from, the mined portions in the Hackberry and South Hackberry mines (**Figure 25.1**).
  - Potential for undiscovered mineral Resources at depth and along strike from the Hackberry mineralized trends, including the geochemically defined targets proposed by Malkoski (1985), (**Figure 25.1**).

The Hackberry Property exhibits ample evidence of significant, undiscovered, high- grade, silver, gold, and base-metal mineralization potential to constitute an exploration property of merit. SOG should conduct an initial multi-disciplinary exploration effort on the Hackberry Property which should include detailed, geologic mapping, structural analysis, rock, soil, and silt sampling and geophysical surveys. The objectives of the exploration program are to define potential high quality drill targets, with the goal of defining a Mineral Resource and/or Reserve. A comprehensive drilling program, as part of this exploration phase, must be the principal objective for an updated Site Valuation.



**Figure 25.1.** Target Areas with Potential for Undiscovered Mineral Resources, Hackberry Property, Mohave County, Arizona  
 (Target areas are shown in cyan, plus the Hackberry mine target area marked as A. Numbers refer to Malkoski's targets noted in Section 9.0 and proposed IP/Resistivity lines are shown in purple)

## 26.0 RECOMMENDATIONS

The Hackberry Property exhibits good exploration potential, and it is recommended that SOG conduct an in-depth, Property-wide, exploration program. The exploration program should include detailed geological mapping, including alteration mapping, and structural analysis, rock, soil, and silt geochemical sampling and state-of-the-art geophysical surveys, including a detailed Nuclear Magnetic Resonance (NMR) survey and possible IP/Resistivity surveys. Initially, it is recommended that IP / Resistivity surveys be conducted on two reconnaissance lines (see **Figure 25.1**), to determine the effectiveness of the technique in this specific mineralized environment. If it is determined that IP / Resistivity is not an effective tool, attention should be paid towards increased drilling of geologically selected targets during exploration. BLM permitting should be initiated as soon as possible for the pertinent exploration activities being conducted on BLMmanaged lands.

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## **Appendix A Certification**

### **Certificate of Qualified Person (QP); Author**

I, Mark H. Slatten, do certify that:

1. I, Mark H. Slatten, am employed at Maverick Eco-miners, Inc, located at 23811 Washington Avenue, C110241, Murrieta, CA 92562.
2. I am a graduate of University of California, Los Angeles (BS, 1976), University of California, Riverside (MS, 1978), and am currently enrolled at Northcentral University in Prescott, AZ (pending in 2017) and have practiced my profession continuously since 1978.
3. I am a Professional Geologist registered in AK (#287), AZ (#25803), CA (#4351), IL (#196.01295), IN (#2316), NV (CEM #1575), and WA (#2782). In addition, I am a Professional Geophysicist (CA #932), a Certified Engineering Geologist (CA #1605), and a Certified Hydrogeologist (CA #521). Furthermore, I am a Diplomate of the American Environmental Society (DIPaes # 00002), a member of the SME, and a member of AAAS. Finally, I am a member in good standing of the Golden Key International Honour Society and the Delta Mu Delta Honor Society.
4. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the Hackberry Mine Properties Project or securities from any investor.
5. As of the date of this certificate, to the best of my knowledge, information and belief, the Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the Report for which I am responsible not misleading.
6. I have read National Instrument 43-101 and Form 43-101F1 and by reason of my education and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101. This report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.
7. As a qualified person, I am independent of the issuer as defined in Section 1.4 of National Instrument 43-101.
8. I have modified some or all of Sections 1 through 13 and am the author of Sections 14 through 26.
9. I have not been involved, prior to this current work, with SOG.
10. I visited the Site July 2022.
11. I have been retained by SOG to prepare a mineral resource estimate for the Hackberry Project. This assignment was completed using my "best practice" and Canadian Securities Administrators

National Instrument 43-101 guidelines. The report is based on my review of project files and discussions with my client. I consent to the filing of the Report with any stock exchange and other Certification regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Report.

Dated: March 06, 2026

Signature of Qualified Person: Mark H. Slatten



MARK H. SLATTEN  
CEO, Principal Geologist  
Maverick Eco-miners, Inc.

## Appendix B Abbreviations, Terms, Acronyms, & Metric Conversions

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\mu\text{m}$ | Micrometer (micron)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Acanthite     | The low-temperature (below 177°C) form of silver sulfide ( $\text{Ag}_2\text{S}$ ).                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Argentite     | The high temperature (above 177°C) form of silver sulfide ( $\text{Ag}_2\text{S}$ ).                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| alluvium      | The bits of rock and minerals that are the result of the erosion of preexisting units, such as strata, hard rock, or older alluvium.                                                                                                                                                                                                                                                                                                                                                                                                        |
| Alunite       | Alunite is a hydrated aluminum potassium sulfate mineral, formula $\text{KA}_{13}(\text{SO}_4)_2(\text{OH})_6$ .                                                                                                                                                                                                                                                                                                                                                                                                                            |
| amsl          | Above mean sea level.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Andesite      | Andesite most commonly denotes fine-grained, usually porphyritic rocks; in composition these correspond roughly to the intrusive igneous rock diorite and consist essentially of andesine (a plagioclase feldspar) and one or more ferromagnesian minerals, such as pyroxene or biotite. Smaller amounts of sanidine, a potassium-rich feldspar, may be present. The larger crystals of feldspar and ferromagnesian minerals are often visible to the naked eye; they lie in a finer groundmass, usually crystalline, but sometimes glassy. |
| APP           | Aquifer Protection Permit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| argillization | The weathering of feldspars to clay minerals, especially in wall rocks adjacent to veins.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| assay         | Evaluation of a sample by physical, chemical, or other means to determine the concentration(s) of members of the precious group metals (PGM) consisting of platinum, palladium, silver, and gold, among others.                                                                                                                                                                                                                                                                                                                             |
| auriferous    | Gold-bearing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| backslashing  | Cutting back into country rock to gain access to ore during stoping.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| beneficiating | Treating ore to make it more suitable for smelting, crushing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Bismuthinite  | Bismuthinite is a mineral consisting of bismuth sulfide ( $\text{Bi}_2\text{S}_3$ ). It is an important ore for bismuth.                                                                                                                                                                                                                                                                                                                                                                                                                    |
| BLM           | U.S. Bureau of Land Management.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| breccia       | Breccia is a rock composed of broken fragments of minerals or rock cemented together by a fine-grained matrix that can be like or different from the composition of the fragments.                                                                                                                                                                                                                                                                                                                                                          |
| b.y. B.P.     | Billion years before present.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| cataclastic   | Formed by mechanical crushing through faulting; typically results in a breccia                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| CCD           | Continuous counter-current decantation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Cerargyrite   | Also called Horn Silver, gray, very heavy halide mineral composed of silver chloride ( $\text{AgCl}$ ); it is an ore of silver. It forms a complete solid solution series with bromyrite, silver bromide ( $\text{AgBr}$ ), in which bromine completely replaces chlorine in the crystal structure.                                                                                                                                                                                                                                         |

|                  |                                                                                                                                                                                                                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cf.              | Compare to.                                                                                                                                                                                                                                                                                                                                |
| Cinnabar         | Ore of mercury.                                                                                                                                                                                                                                                                                                                            |
| clast            | Individual constituent, grain, or fragment of a sediment or rock.                                                                                                                                                                                                                                                                          |
| cyanidation      | Saturation of crushed head ore by cyanide to recover gold by leaching on a pad, or in a drum or tank.                                                                                                                                                                                                                                      |
| detachment fault | A low-angle normal fault formed due to the gravitational instability of an uplifted block, along which there is considerable horizontal displacement.                                                                                                                                                                                      |
| drift            | A horizontal “hallway” in an underground mine.                                                                                                                                                                                                                                                                                             |
| epigenetic       | Said of a mineral deposit of later origin than the enclosing rocks.                                                                                                                                                                                                                                                                        |
| epithermal       | Mineral veins and ore deposits deposited from warm waters at shallow depths at lower temperature and pressure.                                                                                                                                                                                                                             |
| exhumation       | Uncovering by erosion or faulting.                                                                                                                                                                                                                                                                                                         |
| Famatinite       | A mineral $\text{Cu}_3\text{SbS}_4$ consisting of a reddish gray copper antimony sulfide; may contain selenium.                                                                                                                                                                                                                            |
| flotation        | Process by which valuable metals are separated from matrix using agitated water; metals particles stick to bubbles while the unwanted particles sink.                                                                                                                                                                                      |
| fluvatile        | Related to deposition by rivers and streams.                                                                                                                                                                                                                                                                                               |
| head ore         | Ore that enters the processing plant via the hopper and represents the basic mined material at the start of production.                                                                                                                                                                                                                    |
| horobetsuite     | Mineral of bismuthinite-stibnite series with special reference to horobetsuite from the Horobetsu Mine, Hokkaido, Japan. Horobetsuite occurs in the sulfur deposit of Horobetsu Mine, associated with free sulfur and iron sulfide minerals.                                                                                               |
| hypogene         | In ore deposit geology, hypogene processes occur deep below the earth's surface, and tend to form deposits of primary minerals, as opposed to supergene processes that occur at or near the surface and tend to form secondary minerals.                                                                                                   |
| IAPP             | Industrial Artificial Pond Permit.                                                                                                                                                                                                                                                                                                         |
| ICP              | Inductively coupled plasma mass spectrometry.                                                                                                                                                                                                                                                                                              |
| ICP-MS           | A type of mass spectrometry which is capable of detecting metals and several non-metals at concentrations as low as one part in $10^{12}$ (part per trillion). This is achieved by ionizing the sample with inductively coupled plasma and then using a mass spectrometer to separate and quantify those ions.                             |
| Infomine         | An on-line mining costs website.                                                                                                                                                                                                                                                                                                           |
| IRR              | Internal rate of return.                                                                                                                                                                                                                                                                                                                   |
| kriging          | In statistics, originally in geostatistics, kriging or Gaussian process regression is a method of interpolation for which the interpolated values are modeled by a Gaussian process governed by prior covariances. Under suitable assumptions on the priors, kriging gives the best linear unbiased prediction of the intermediate values. |

|                   |                                                                                                                                                                                                                                                                                                                            |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lacustrine        | Related to deposition in lakes and ponds.                                                                                                                                                                                                                                                                                  |
| latite            | An igneous, volcanic rock, with aphanitic - aphyric to aphyric- porphyritic texture. Its mineral assemblage is usually alkali feldspar and plagioclase in approximately equal amounts. Quartz is less than five percent and is absent in a feldspathoid -bearing latite, and olivine is absent in a quartz bearing latite. |
| limonitic         | Adjective form of limonite; an amorphous brownish secondary mineral consisting of a mixture of hydrous ferric oxides, important as an iron ore.                                                                                                                                                                            |
| lithogeochemistry | Is defined as the determination of the chemical composition of bedrock material with the objective of detecting distribution patterns of elements that are spatially related to mineralization.                                                                                                                            |
| lithologic        | The character of rock or rock formation.                                                                                                                                                                                                                                                                                   |
| LoM               | Life of mine.                                                                                                                                                                                                                                                                                                              |
| Ma                | Million years before present.                                                                                                                                                                                                                                                                                              |
| massic            | Describing any measure obtained by dividing a physical quantity by a mass.                                                                                                                                                                                                                                                 |
| matrix            | The bits of rock that have been ground down to a smaller size such that they fill in the spaces between the larger clasts (e.g., boulders) in a deposit.                                                                                                                                                                   |
| M oz              | Million ounces.                                                                                                                                                                                                                                                                                                            |
| msl               | Mean sea level.                                                                                                                                                                                                                                                                                                            |
| mt                | Million U.S. short ton(s).                                                                                                                                                                                                                                                                                                 |
| m.y. B.P.         | Million years before present.                                                                                                                                                                                                                                                                                              |
| NEPA              | National Environmental Protection Act.                                                                                                                                                                                                                                                                                     |
| NOI               | Notice of Intent.                                                                                                                                                                                                                                                                                                          |
| NPDES             | National Pollutant Discharge Elimination System.                                                                                                                                                                                                                                                                           |
| NPV               | Net Present Value.                                                                                                                                                                                                                                                                                                         |
| oxide             | A binary compound of oxygen with another element or group.                                                                                                                                                                                                                                                                 |
| oz                | ounce.                                                                                                                                                                                                                                                                                                                     |
| oz/t or opt       | Ounce per ton.                                                                                                                                                                                                                                                                                                             |
| PGMs              | Platinum Group Metals, consisting of Platinum (Pt), Palladium (Pd), Rhodium (Rh), Ruthenium (Ru), Iridium (Ir), and Osmium (Os).                                                                                                                                                                                           |
| placer deposit    | A deposit composed of erosional detritus, such as sand and gravel; typically, in river channels and stream beds.                                                                                                                                                                                                           |
| porphyry stock    | Porphyry is a textural term for an igneous rock consisting of large-grained crystals such as feldspar or quartz dispersed in a fine-grained silicate rich, generally aphanitic, matrix or groundmass. "Stock" refers to a pluton, neck, or dike (i.e., an intrusive body).                                                 |
| QA/QC             | Quality Assurance/Quality Control.                                                                                                                                                                                                                                                                                         |
| QP                | Qualified Person as defined by National Institute 43-101 protocols.                                                                                                                                                                                                                                                        |

|             |                                                                                                                                                                                                                                                                                                                                    |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| refractory  | Refractory minerals can be defined as minerals or synthetic inorganic crystal phases that have high melting points. They should also be resistant to deformation and to softening at high temperatures.                                                                                                                            |
| selvage     | A distinct border of a mass of igneous rock. It is usually fine-grained or glassy due to rapid cooling.                                                                                                                                                                                                                            |
| shoot       | A long straight drift in ore.                                                                                                                                                                                                                                                                                                      |
| SRM         | Standard Reference Material.                                                                                                                                                                                                                                                                                                       |
| sulfide     | Class of minerals containing sulfide as the major anion, e.g., pyrite                                                                                                                                                                                                                                                              |
| sulfidation | Sulfidation is a process of installing sulfide ions in a material or molecule. The process is widely used to convert oxides to sulfides. High sulfidation epithermal gold forms where hot acidic hydrothermal fluids remain undiluted by groundwater and drops gold from solution before it reaches the atmosphere or hydrosphere. |
| supergene   | Processes that occur at or near the surface and tend to form secondary minerals.                                                                                                                                                                                                                                                   |
| tectonism   | Related to mountain building, including faulting.                                                                                                                                                                                                                                                                                  |
| terrane     | A geographical area related by its genesis, e.g., river system, volcano, deep ocean.                                                                                                                                                                                                                                               |
| ton         | U.S. Customary (short ton).                                                                                                                                                                                                                                                                                                        |
| tuff        | A light, porous rock formed by consolidation of volcanic ash.                                                                                                                                                                                                                                                                      |
| tpy/tpd     | Tons per year/tons per day (U.S.).                                                                                                                                                                                                                                                                                                 |
| vein        | An epigenetic mineral filling of a fracture in a host rock, in tabular or sheet form, often with associated replacement of the host rock.                                                                                                                                                                                          |

## CHEMICAL SYMBOLS

|                           |                                      |
|---------------------------|--------------------------------------|
| Aluminum                  | Al                                   |
| Ammonia                   | NH <sub>3</sub>                      |
| Antimony                  | Sb                                   |
| Arsenic                   | As                                   |
| Bismuth                   | Bi                                   |
| Cadmium                   | Cd                                   |
| Calcium                   | Ca                                   |
| Calcium carbonate         | CaCO <sub>3</sub>                    |
| Calcium oxide             | CaO                                  |
| Calcium sulfide dehydrate | CaSO <sub>4</sub> ·2H <sub>2</sub> O |
| Carbon                    | C                                    |
| Carbon monoxide           | CO                                   |
| Chlorine                  | Cl                                   |
| Chromium                  | Cr                                   |
| Cobalt                    | Co                                   |
| Copper                    | Cu                                   |
| Cyanide                   | CN                                   |
| Gold                      | Au                                   |

|                                                                                                                          |                  |
|--------------------------------------------------------------------------------------------------------------------------|------------------|
| Hydrogen                                                                                                                 | H                |
| Iron                                                                                                                     | Fe               |
| Lead                                                                                                                     | Pb               |
| Magnesium                                                                                                                | Mg               |
| Manganese                                                                                                                | Mn               |
| Manganese dioxide                                                                                                        | MnO <sub>2</sub> |
| Molybdenum                                                                                                               | Mo               |
| Nickel                                                                                                                   | Ni               |
| Nitrogen                                                                                                                 | N                |
| Nitrogen oxide compounds                                                                                                 | NO <sub>x</sub>  |
| Oxygen                                                                                                                   | O <sub>2</sub>   |
| Palladium                                                                                                                | Pd               |
| Platinum                                                                                                                 | Pt               |
| Platinum Group Metals (PGMs): Palladium (Pd), Platinum (Pt), Rhodium (Rh), Iridium (Ir), Ruthenium (Ru), and Osmium (Os) |                  |
| Potassium                                                                                                                | K                |
| Silver                                                                                                                   | Ag               |
| Sodium                                                                                                                   | Na               |
| Sulfur                                                                                                                   | S                |
| Tin                                                                                                                      | Sn               |
| Titanium                                                                                                                 | Ti               |
| Tungsten                                                                                                                 | W                |
| Uranium                                                                                                                  | U                |
| Zinc                                                                                                                     | Zn               |

**METRIC CONVERSION FACTORS (divide by)**

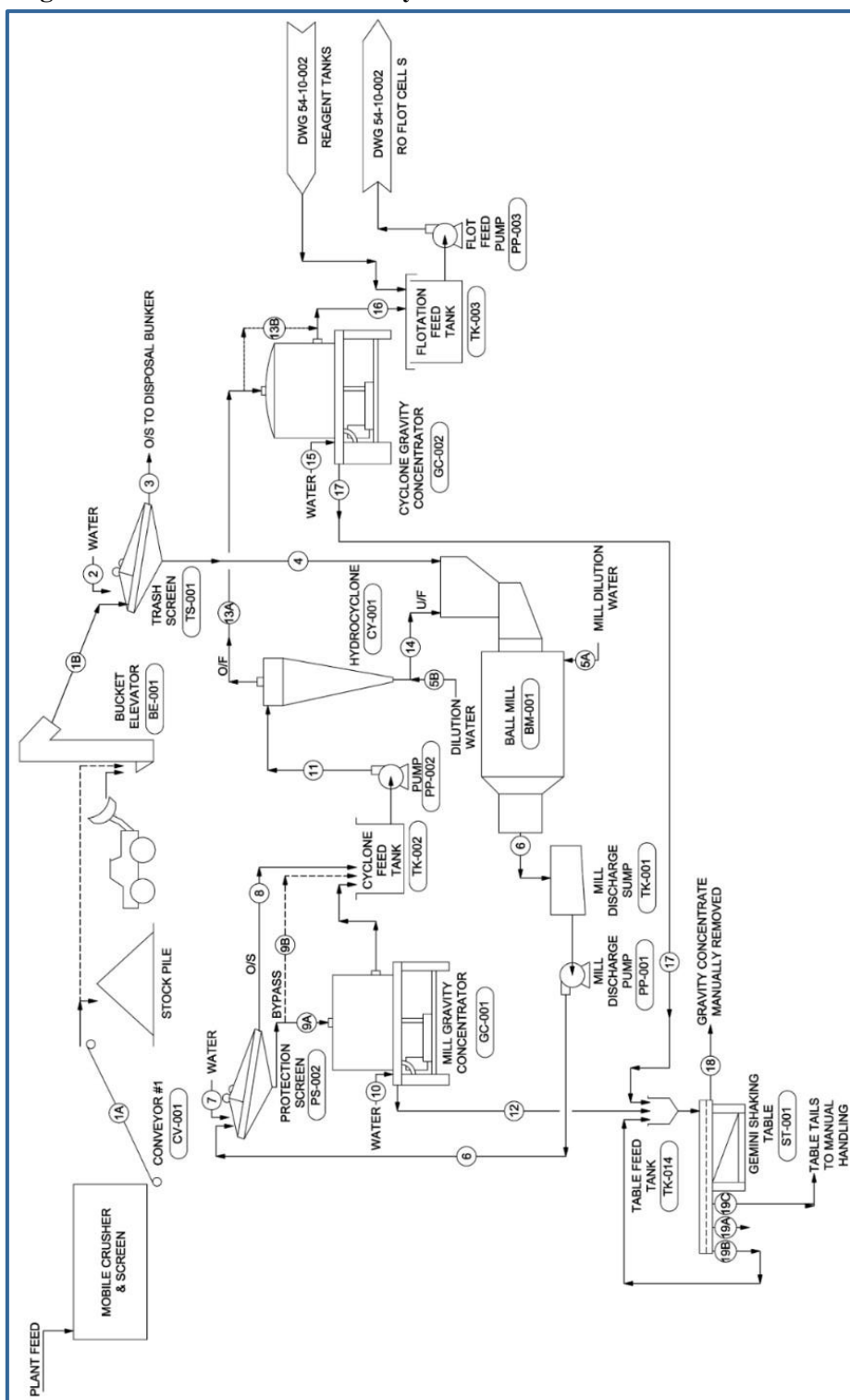
|                                        |         |
|----------------------------------------|---------|
| Short tons to tonnes                   | 1.10231 |
| Pounds to tonnes                       | 2204.62 |
| Ounces (Troy) to tonnes                | 32,150  |
| Ounces (Troy) to kilograms             | 32.150  |
| Ounces (Troy) to grams                 | 0.03215 |
| Ounces (Troy)/short ton to grams/tonne | 0.02917 |
| Acres to hectares                      | 2.47105 |
| Miles to kilometers                    | 0.62137 |
| Feet to meters                         | 3.28084 |

## APPENDIX C Claims

**Table B-1 Hughes Family Trust Patented Mining Claims, Mohave County, Arizona**

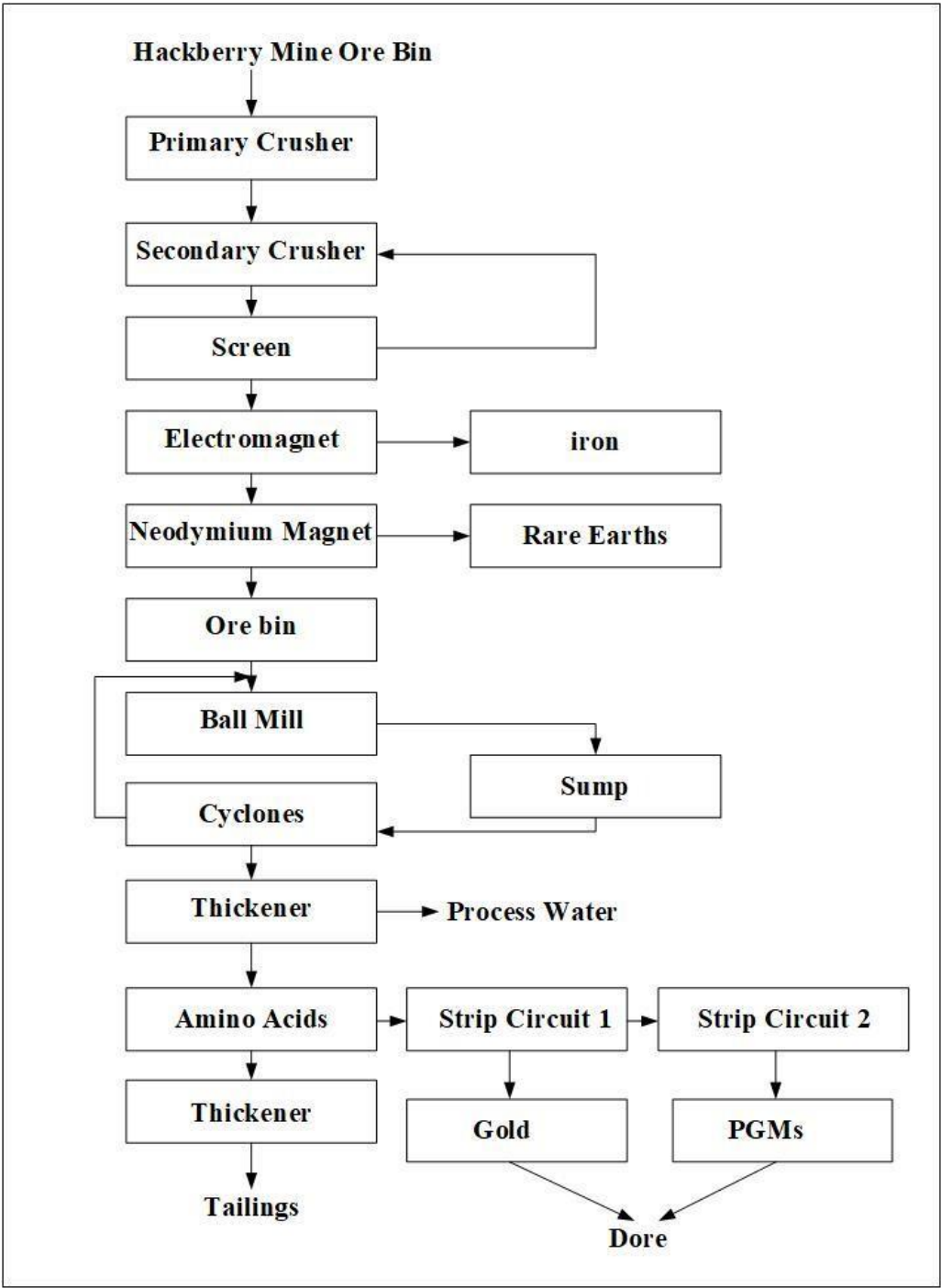
| <u>Claim Name</u>           | <u>Mineral Survey-Lot<br/>Number</u> | <u>County Document<br/>Number</u> |
|-----------------------------|--------------------------------------|-----------------------------------|
| Homestead                   | MS # 3497                            | Book HH, Page 689                 |
| Homestead<br>No. 3          | MS # 3497                            | Book VV, Page 531                 |
| Homestead<br>No. 7          | MS # 3497                            | Book VV, Page 535                 |
| Hackberry South             | MS # 37                              | Book 6, Page 647                  |
| North<br>Hackberry No.<br>2 | MS # 3497                            | Book W, Page 529                  |
| North<br>Hackberry No.<br>3 | MS # 3497                            | Book W, Page 530                  |
| North<br>Hackberry No.<br>4 | MS # 3497                            | Book W, Page 531                  |
| Sunshine                    | MS # 2598A                           | Book 21, Page 61                  |
| Sunshine No. 2              | MS # 2598A                           | Book 21, Page 61                  |
| Protection                  | MS # 3496                            | Book HH, Page 690                 |
| Protection No.<br>1         | MS # 3496                            | Book VV, page 537                 |
| Protection No.<br>2         | MS # 3496                            | Book VV, Page 538                 |

### Figure C-1 Process Flow – Gravity Circuit



[illegible]

Figure C-3 Process Flow WOL



## Appendix D Full Scan Assay Results from Vesta Minerals

Vesta Minerals Inc. Quantitative Analysis

3863 South Valley View Blvd. #11 Las Vegas, Nevada 89103

Telephone (702) 716-0534

Sample ID: O3 + COLD RAA + DROP + FILTER

Sample Date/Time: Tuesday, March 22, 2022 13:46:42

Report Date/Time: Thursday, March 24, 2022 11:51:15

Autosampler Position: 308

Sample Description:

Batch ID: 03222022

Sample File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Sample\VESTA03222022.sam

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\QA #2007 Full Spectrum Minor 2 I60 Au, Ag, Ppms, Rees Background.r

Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\O3 + COLD RAA + DROP + FILTER.691

Analytical Results - PerkinElmer ICP-MS

| Analyte | Isotope Mass | Conc. Mean | Report Unit |
|---------|--------------|------------|-------------|
| Ag      | 107          | 1415.85    | ppm         |
| Ag-1    | 109          | 1415.81    | ppm         |
| Au      | 197          | 148.92     | ppm         |
| Au-1    | 199          | 356.04     | ppm         |
| Pd      | 106          | 24.81      | ppm         |
| Pt      | 195          | -1.46      | ppm         |
| Rh      | 103          | 5.65       | ppm         |
| Ir      | 193          | 5.21       | ppm         |
| Ru      | 102          | 4.32       | ppm         |
| Os      | 192          | -148.86    | ppm         |
| La      | 139          | 1.12       | ppm         |
| Ce      | 140          | 4.55       | ppm         |
| Pr      | 141          | 3.23       | ppm         |
| Nd      | 142          | 7.87       | ppm         |
| Pm      | 141          | 3.23       | ppm         |
| Sm      | 152          | 0.75       | ppm         |
| Eu      | 153          | 0.68       | ppm         |
| Gd      | 158          | 1.12       | ppm         |
| Tb      | 159          | 0.59       | ppm         |
| Dy      | 164          | 0.52       | ppm         |
| Ho      | 165          | 0.52       | ppm         |
| Er      | 166          | 0.41       | ppm         |
| Tm      | 169          | 0.40       | ppm         |
| Lu      | 175          | 0.31       | ppm         |
| Sc      | 45           | 16.87      | ppm         |
| Th      | 232          | 12.68      | ppm         |
| Y       | 89           | 1.54       | ppm         |
| Yb      | 172          | 0.38       | ppm         |
| Ti      | 48           | 147.99     | ppm         |
| V       | 51           | 63.81      | ppm         |
| Rb      | 85           | 2.04       | ppm         |

Sample ID: O3 + COLD RAA + DROP + FILTER

Report Date/Time: Thursday, March 24, 2022 11:51:15

Page 1

|    |     |           |     |
|----|-----|-----------|-----|
| Cs | 133 | 1.88      | ppm |
| Re | 187 | 0.62      | ppm |
| Al | 27  | -2165.46  | ppm |
| As | 75  | 68.64     | ppm |
| Ba | 138 | 128.95    | ppm |
| Be | 9   | 0.55      | ppm |
| Bi | 209 | -1.73     | ppm |
| Ca | 43  | 33318.57  | ppm |
| Cd | 111 | 2.14      | ppm |
| Co | 59  | 125.38    | ppm |
| Cr | 52  | -573.25   | ppm |
| Cu | 63  | -59.11    | ppm |
| Ga | 69  | 6.27      | ppm |
| In | 115 | 2.05      | ppm |
| K  | 39  | 230.63    | ppm |
| Li | 7   | 3.11      | ppm |
| Mg | 24  | 157692.86 | ppm |
| Mn | 55  | -47.84    | ppm |
| Pb | 208 | 446.02    | ppm |
| Se | 82  | 3.36      | ppm |
| Sr | 88  | 3668.02   | ppm |
| Tl | 205 | 0.92      | ppm |
| Zn | 64  | -86.70    | ppm |
| Hf | 180 | -10.87    | ppm |
| Sb | 121 | 0.52      | ppm |
| Sn | 118 | 135.67    | ppm |
| Te | 130 | 8.78      | ppm |
| B  | 11  | 6773.80   | ppm |
| Ge | 74  | -0.40     | ppm |
| Mo | 98  | 7.35      | ppm |
| Nb | 93  | 99.36     | ppm |
| P  | 31  | 129.06    | ppm |
| Si | 28  | 10042.89  | ppm |
| Ta | 181 | 150.80    | ppm |
| W  | 184 | 453.76    | ppm |
| Zr | 90  | -20.42    | ppm |
| S  | 32  | 20909.97  | ppm |
| Hg | 202 | 394.91    | ppm |
| Ni | 58  | -261.51   | ppm |

Sample ID: O3 + COLD RAA + DROP + FILTER  
Report Date/Time: Thursday, March 24, 2022 11:51:15  
Page 2

## Vesta Minerals Quantitative Analysis

### Sample ID: HACKBERRY #4 LOWER SHAFT

Sample Date/Time: Sunday, October 17, 2021 14:53:49

Report Date/Time: Sunday, October 17, 2021 15:00:51

Autosampler Position: 311

Sample Description:

Batch ID: 10162021

Sample File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Sample\VESTA10162021.sam

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\ga #2500 ffull iso au, ag, pgms, rees background.mth

Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\HACKBERRY #4 LOWER SHAFT.965

### Analytical Results - PerkinElmer ICP-MS

| Analyte | Isotope Mass | Conc. Mean | Report Unit |
|---------|--------------|------------|-------------|
| Ag      | 107          | 9.59       | ppm         |
| Ag-1    | 109          | 9.24       | ppm         |
| Au      | 197          | 2.36       | ppm         |
| Au-1    | 199          | 6.82       | ppm         |
| Pd      | 106          | 3.86       | ppm         |
| Pd-1    | 108          | 3.18       | ppm         |
| Pd-2    | 105          | 2.80       | ppm         |
| Pd-3    | 110          | 3.65       | ppm         |
| Pt      | 195          | 0.03       | ppm         |
| Pt-1    | 194          | 0.04       | ppm         |
| Pt-2    | 196          | 0.05       | ppm         |
| Pt-3    | 198          | 0.23       | ppm         |
| Rh      | 103          | 0.01       | ppm         |
| Ir      | 193          | 0.14       | ppm         |
| Ir-1    | 191          | 0.13       | ppm         |
| Ru      | 102          | 0.04       | ppm         |
| Ru-1    | 104          | 1.09       | ppm         |
| Ru-2    | 101          | -0.12      | ppm         |
| Os      | 192          | -3.40      | ppm         |
| Os-1    | 190          | 0.52       | ppm         |
| Os-2    | 189          | 0.41       | ppm         |
| La      | 139          | 8.50       | ppm         |
| Ce      | 140          | 22.25      | ppm         |
| Ce-1    | 142          | 14.11      | ppm         |
| Pr      | 141          | 2.84       | ppm         |
| Nd      | 142          | 11.39      | ppm         |
| Nd-1    | 144          | 4.10       | ppm         |
| Nd-2    | 146          | -0.74      | ppm         |
| Pm      | 141          | 2.84       | ppm         |
| Sm      | 152          | 2.50       | ppm         |
| Sm-1    | 154          | 3.54       | ppm         |
| Eu      | 153          | 0.76       | ppm         |
| Eu-1    | 151          | 0.72       | ppm         |
| Gd      | 158          | 2.08       | ppm         |

Sample ID: HACKBERRY #4 LOWER SHAFT

Report Date/Time: Sunday, October 17, 2021 15:00:51

Page 1

|      |     |             |     |
|------|-----|-------------|-----|
| Gd-1 | 160 | 1.92        | ppm |
| Gd-2 | 156 | 3.22        | ppm |
| Tb   | 159 | 0.28        | ppm |
| Dy   | 164 | 1.52        | ppm |
| Dy-1 | 162 | 1.62        | ppm |
| Dy-2 | 163 | 1.54        | ppm |
| Ho   | 165 | 0.30        | ppm |
| Er   | 166 | 0.81        | ppm |
| Er-1 | 168 | 0.79        | ppm |
| Er-2 | 167 | 0.78        | ppm |
| Tm   | 169 | 0.11        | ppm |
| Lu   | 175 | 0.11        | ppm |
| Sc   | 45  | 57.24       | ppm |
| Th   | 232 | 2.30        | ppm |
| Y    | 89  | 5.05        | ppm |
| Yb   | 172 | 0.74        | ppm |
| Yb-1 | 174 | 0.75        | ppm |
| Yb-2 | 173 | 0.75        | ppm |
| Ti   | 48  | 4035.35     | ppm |
| V    | 51  | 143.23      | ppm |
| Rb   | 85  | 49.98       | ppm |
| Cs   | 133 | 2.53        | ppm |
| Re   | 187 | 0.00        | ppm |
| Al   | 27  | 27254.26    | ppm |
| As   | 75  | 69.75       | ppm |
| Ba   | 138 | 611.79      | ppm |
| Be   | 9   | 3.94        | ppm |
| Bi   | 209 | 2.56        | ppm |
| Ca   | 43  | 3472.92     | ppm |
| Cd   | 111 | 3.72        | ppm |
| Co   | 59  | 29.22       | ppm |
| Cr   | 52  | 711.79      | ppm |
| Cu   | 63  | 143.36      | ppm |
| Cu-1 | 65  | 134.08      | ppm |
| Fe   | 57  | -3244336.44 | ppm |
| Ga   | 69  | 31.63       | ppm |
| In   | 115 | 0.08        | ppm |
| K    | 39  | 8706.67     | ppm |
| Li   | 7   | 50.57       | ppm |
| Mg   | 24  | 5461.52     | ppm |
| Mn   | 55  | 638.94      | ppm |
| Pb   | 208 | 74.54       | ppm |
| Se   | 82  | -0.16       | ppm |
| Sr   | 88  | 234.86      | ppm |
| Tl   | 205 | 0.73        | ppm |
| U    | 238 | 1.22        | ppm |

Sample ID: HACKBERRY #4 LOWER SHAFT  
Report Date/Time: Sunday, October 17, 2021 15:00:51  
Page 2

|      |     |           |     |
|------|-----|-----------|-----|
| Zn   | 64  | 96.44     | ppm |
| Zn-1 | 66  | 78.19     | ppm |
| Zn-2 | 68  | 96.88     | ppm |
| Hf   | 180 | 1.31      | ppm |
| Sb   | 121 | 4.86      | ppm |
| Sn   | 118 | 1.23      | ppm |
| Te   | 130 | -0.17     | ppm |
| B    | 11  | -620.74   | ppm |
| Ge   | 74  | 3.49      | ppm |
| Mo   | 98  | 3.88      | ppm |
| Nb   | 93  | 9.21      | ppm |
| P    | 31  | 1044.96   | ppm |
| Si   | 28  | 250502.14 | ppm |
| Ta   | 181 | 1.57      | ppm |
| W    | 184 | 17.36     | ppm |
| Zr   | 90  | 50.53     | ppm |
| S    | 32  | 10982.25  | ppm |
| C    | 12  | 147436.21 | ppm |
| Hg   | 202 | 3.79      | ppm |
| Hg-1 | 200 | 8.04      | ppm |
| Hg-2 | 199 | 6.82      | ppm |
| Ni   | 58  | 609.57    | ppm |
| Ni-2 | 60  | 138.76    | ppm |
| Ni-3 | 62  | 147.82    | ppm |

Sample ID: HACKBERRY #4 LOWER SHAFT  
Report Date/Time: Sunday, October 17, 2021 15:00:51  
Page 3

## Vesta Minerals Quantitative Analysis

**Sample ID: HACKBERRY #3 MAIN SHAFT**

Sample Date/Time: Sunday, October 17, 2021 14:44:06

Report Date/Time: Sunday, October 17, 2021 14:51:08

Autosampler Position: 310

Sample Description:

Batch ID: 10162021

Sample File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Sample\VESTA10162021.sam

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\qa #2500 ffull iso au, ag, pgms, rees background.mth

Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\HACKBERRY #3 MAIN SHAFT.964

### Analytical Results - PerkinElmer ICP-MS

| Analyte | Isotope Mass | Conc. Mean | Report Unit |
|---------|--------------|------------|-------------|
| Ag      | 107          | 1373.53    | ppm         |
| Ag-1    | 109          | 1358.31    | ppm         |
| Au      | 197          | 3.17       | ppm         |
| Au-1    | 199          | 255.11     | ppm         |
| Pd      | 106          | 0.96       | ppm         |
| Pd-1    | 108          | 0.79       | ppm         |
| Pd-2    | 105          | -4.46      | ppm         |
| Pd-3    | 110          | 36.71      | ppm         |
| Pt      | 195          | 0.04       | ppm         |
| Pt-1    | 194          | 0.05       | ppm         |
| Pt-2    | 196          | 0.06       | ppm         |
| Pt-3    | 198          | 2.62       | ppm         |
| Rh      | 103          | 0.05       | ppm         |
| Ir      | 193          | 0.15       | ppm         |
| Ir-1    | 191          | 0.15       | ppm         |
| Ru      | 102          | 0.05       | ppm         |
| Ru-1    | 104          | 0.94       | ppm         |
| Ru-2    | 101          | 0.00       | ppm         |
| Os      | 192          | -3.42      | ppm         |
| Os-1    | 190          | 0.43       | ppm         |
| Os-2    | 189          | 0.42       | ppm         |
| La      | 139          | 12.61      | ppm         |
| Ce      | 140          | 23.64      | ppm         |
| Ce-1    | 142          | 12.44      | ppm         |
| Pr      | 141          | 2.56       | ppm         |
| Nd      | 142          | 8.69       | ppm         |
| Nd-1    | 144          | -0.51      | ppm         |
| Nd-2    | 146          | -7.81      | ppm         |
| Pm      | 141          | 2.56       | ppm         |
| Sm      | 152          | 1.29       | ppm         |
| Sm-1    | 154          | 1.41       | ppm         |
| Eu      | 153          | 0.27       | ppm         |
| Eu-1    | 151          | 0.27       | ppm         |
| Gd      | 158          | 1.06       | ppm         |

**Sample ID: HACKBERRY #3 MAIN SHAFT**

Report Date/Time: Sunday, October 17, 2021 14:51:08

Page 1

|      |     |             |     |
|------|-----|-------------|-----|
| Gd-1 | 160 | 0.82        | ppm |
| Gd-2 | 156 | 2.41        | ppm |
| Tb   | 159 | 0.10        | ppm |
| Dy   | 164 | 0.41        | ppm |
| Dy-1 | 162 | 0.49        | ppm |
| Dy-2 | 163 | 0.41        | ppm |
| Ho   | 165 | 0.06        | ppm |
| Er   | 166 | 0.18        | ppm |
| Er-1 | 168 | 0.17        | ppm |
| Er-2 | 167 | 0.16        | ppm |
| Tm   | 169 | 0.02        | ppm |
| Lu   | 175 | 0.02        | ppm |
| Sc   | 45  | 60.63       | ppm |
| Th   | 232 | 4.17        | ppm |
| Y    | 89  | 1.65        | ppm |
| Yb   | 172 | 0.14        | ppm |
| Yb-1 | 174 | 0.14        | ppm |
| Yb-2 | 173 | 0.15        | ppm |
| Ti   | 48  | 620.55      | ppm |
| V    | 51  | 6.46        | ppm |
| Rb   | 85  | 45.45       | ppm |
| Cs   | 133 | 1.74        | ppm |
| Re   | 187 | 0.01        | ppm |
| Al   | 27  | 28472.28    | ppm |
| As   | 75  | 149.21      | ppm |
| Ba   | 138 | 105.89      | ppm |
| Be   | 9   | 1.27        | ppm |
| Bi   | 209 | 4.00        | ppm |
| Ca   | 43  | 1125.16     | ppm |
| Cd   | 111 | 66.88       | ppm |
| Co   | 59  | 8.22        | ppm |
| Cr   | 52  | 1282.74     | ppm |
| Cu   | 63  | 214.67      | ppm |
| Cu-1 | 65  | 198.60      | ppm |
| Fe   | 57  | -1119010.38 | ppm |
| Ga   | 69  | 14.60       | ppm |
| In   | 115 | 0.01        | ppm |
| K    | 39  | 4577.34     | ppm |
| Li   | 7   | 16.30       | ppm |
| Mg   | 24  | 2309.86     | ppm |
| Mn   | 55  | 132.03      | ppm |
| Pb   | 208 | 4043.38     | ppm |
| Se   | 82  | 0.27        | ppm |
| Sr   | 88  | 196.06      | ppm |
| Tl   | 205 | 0.53        | ppm |
| U    | 238 | 8.68        | ppm |

Sample ID: HACKBERRY #3 MAIN SHAFT

Report Date/Time: Sunday, October 17, 2021 14:51:08

Page 2

|      |     |           |     |
|------|-----|-----------|-----|
| Zn   | 64  | 7050.96   | ppm |
| Zn-1 | 66  | 6393.42   | ppm |
| Zn-2 | 68  | 6237.70   | ppm |
| Hf   | 180 | 0.37      | ppm |
| Sb   | 121 | 219.00    | ppm |
| Sn   | 118 | 0.11      | ppm |
| Te   | 130 | 0.01      | ppm |
| B    | 11  | -549.29   | ppm |
| Ge   | 74  | 4.01      | ppm |
| Mo   | 98  | 7.65      | ppm |
| Nb   | 93  | 1.96      | ppm |
| P    | 31  | 107.54    | ppm |
| Si   | 28  | 292647.42 | ppm |
| Ta   | 181 | 0.83      | ppm |
| W    | 184 | 2.99      | ppm |
| Zr   | 90  | 12.06     | ppm |
| S    | 32  | 11430.03  | ppm |
| C    | 12  | 142702.36 | ppm |
| Hg   | 202 | 236.64    | ppm |
| Hg-1 | 200 | 180.70    | ppm |
| Hg-2 | 199 | 255.11    | ppm |
| Ni   | 58  | 183.28    | ppm |
| Ni-2 | 60  | 24.18     | ppm |
| Ni-3 | 62  | 26.19     | ppm |

## Vesta Minerals Quantitative Analysis

**Sample ID: HACKBERRY #2 UPPER SHAFT**

Sample Date/Time: Sunday, October 17, 2021 14:34:24

Report Date/Time: Sunday, October 17, 2021 14:41:26

Autosampler Position: 309

Sample Description:

Batch ID: 10162021

Sample File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Sample\VESTA10162021.sam

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\iga #2500 ffull iso eu, ag, pgms, rees background.mth

Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\HACKBERRY #2 UPPER SHAFT.963

### Analytical Results - PerkinElmer ICP-MS

| Analyte | Isotope Mass | Conc. Mean | Report Unit |
|---------|--------------|------------|-------------|
| Ag      | 107          | 12.59      | ppm         |
| Ag-1    | 109          | 12.32      | ppm         |
| Au      | 197          | 3.31       | ppm         |
| Au-1    | 199          | 50.06      | ppm         |
| Pd      | 106          | 9.70       | ppm         |
| Pd-1    | 108          | 9.08       | ppm         |
| Pd-2    | 105          | 9.03       | ppm         |
| Pd-3    | 110          | 7.57       | ppm         |
| Pt      | 195          | 0.71       | ppm         |
| Pt-1    | 194          | 0.66       | ppm         |
| Pt-2    | 196          | 0.72       | ppm         |
| Pt-3    | 198          | 1.34       | ppm         |
| Rh      | 103          | 0.11       | ppm         |
| Ir      | 193          | 1.01       | ppm         |
| Ir-1    | 191          | 0.58       | ppm         |
| Ru      | 102          | 0.18       | ppm         |
| Ru-1    | 104          | 3.33       | ppm         |
| Ru-2    | 101          | -0.30      | ppm         |
| Os      | 192          | -5.25      | ppm         |
| Os-1    | 190          | 1.12       | ppm         |
| Os-2    | 189          | 0.97       | ppm         |
| La      | 139          | 58.72      | ppm         |
| Ce      | 140          | 130.91     | ppm         |
| Ce-1    | 142          | 70.20      | ppm         |
| Pr      | 141          | 14.36      | ppm         |
| Nd      | 142          | 49.91      | ppm         |
| Nd-1    | 144          | 0.09       | ppm         |
| Nd-2    | 146          | -39.62     | ppm         |
| Pm      | 141          | 14.36      | ppm         |
| Sm      | 152          | 7.27       | ppm         |
| Sm-1    | 154          | 7.79       | ppm         |
| Eu      | 153          | 1.01       | ppm         |
| Eu-1    | 151          | 0.98       | ppm         |
| Gd      | 158          | 5.66       | ppm         |

**Sample ID: HACKBERRY #2 UPPER SHAFT**

Report Date/Time: Sunday, October 17, 2021 14:41:26

Page 1

|      |     |             |     |
|------|-----|-------------|-----|
| Gd-1 | 160 | 4.26        | ppm |
| Gd-2 | 156 | 13.38       | ppm |
| Tb   | 159 | 0.52        | ppm |
| Dy   | 164 | 1.92        | ppm |
| Dy-1 | 162 | 2.23        | ppm |
| Dy-2 | 163 | 1.90        | ppm |
| Ho   | 165 | 0.27        | ppm |
| Er   | 166 | 0.72        | ppm |
| Er-1 | 168 | 0.63        | ppm |
| Er-2 | 167 | 0.69        | ppm |
| Tm   | 169 | 0.08        | ppm |
| Lu   | 175 | 0.07        | ppm |
| Sc   | 45  | 57.24       | ppm |
| Th   | 232 | 32.85       | ppm |
| Y    | 89  | 5.54        | ppm |
| Yb   | 172 | 0.47        | ppm |
| Yb-1 | 174 | 0.48        | ppm |
| Yb-2 | 173 | 0.54        | ppm |
| Ti   | 48  | 1960.48     | ppm |
| V    | 51  | 57.23       | ppm |
| Rb   | 85  | 75.76       | ppm |
| Cs   | 133 | 3.47        | ppm |
| Re   | 187 | 0.01        | ppm |
| Al   | 27  | 68091.35    | ppm |
| As   | 75  | 22.19       | ppm |
| Ba   | 138 | 463.40      | ppm |
| Be   | 9   | 2.81        | ppm |
| Bi   | 209 | 2.18        | ppm |
| Ca   | 43  | 3199.91     | ppm |
| Cd   | 111 | 5.79        | ppm |
| Co   | 59  | 14.97       | ppm |
| Cr   | 52  | 572.31      | ppm |
| Cu   | 63  | 51.51       | ppm |
| Cu-1 | 65  | 48.01       | ppm |
| Fe   | 57  | -1656338.24 | ppm |
| Ga   | 69  | 38.90       | ppm |
| In   | 115 | 0.18        | ppm |
| K    | 39  | 9746.78     | ppm |
| Li   | 7   | 27.99       | ppm |
| Mg   | 24  | 5820.69     | ppm |
| Mn   | 55  | 255.13      | ppm |
| Pb   | 208 | 258.80      | ppm |
| Se   | 82  | -0.06       | ppm |
| Sr   | 88  | 468.80      | ppm |
| Tl   | 205 | 1.17        | ppm |
| U    | 238 | 3.61        | ppm |

Sample ID: HACKBERRY #2 UPPER SHAFT  
Report Date/Time: Sunday, October 17, 2021 14:41:26  
Page 2

|      |     |           |     |
|------|-----|-----------|-----|
| Zn   | 64  | 596.67    | ppm |
| Zn-1 | 66  | 543.71    | ppm |
| Zn-2 | 68  | 555.83    | ppm |
| Hf   | 180 | 0.74      | ppm |
| Sb   | 121 | 4.81      | ppm |
| Sn   | 118 | 2.43      | ppm |
| Te   | 130 | -0.20     | ppm |
| B    | 11  | -422.51   | ppm |
| Ge   | 74  | 2.52      | ppm |
| Mo   | 98  | 4.18      | ppm |
| Nb   | 93  | 6.22      | ppm |
| P    | 31  | 400.70    | ppm |
| Si   | 28  | 255501.99 | ppm |
| Ta   | 181 | 2.09      | ppm |
| W    | 184 | 32.81     | ppm |
| Zr   | 90  | 26.89     | ppm |
| S    | 32  | 10032.78  | ppm |
| C    | 12  | 149523.26 | ppm |
| Hg   | 202 | 47.90     | ppm |
| Hg-1 | 200 | 43.40     | ppm |
| Hg-2 | 199 | 50.06     | ppm |
| Ni   | 58  | 244.89    | ppm |
| Ni-2 | 60  | 13.05     | ppm |
| Ni-3 | 62  | 19.09     | ppm |

## Vesta Minerals Quantitative Analysis

**Sample ID: HACKBERRY #1 UPPER SHAFT**

Sample Date/Time: Sunday, October 17, 2021 14:24:41

Report Date/Time: Sunday, October 17, 2021 14:31:43

Autosampler Position: 308

Sample Description:

Batch ID: 10162021

Sample File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Sample\VESTA10162021.sam

Method File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\Method\qa #2500 ffull iso au, ag, pgms, rees background.mth

Dataset File: C:\Users\Public\Documents\PerkinElmer Syngistix\ICPMS\DataSet\Default\HACKBERRY #1 UPPER SHAFT.962

### Analytical Results - PerkinElmer ICP-MS

| Analyte | Isotope Mass | Conc. Mean | Report Unit |
|---------|--------------|------------|-------------|
| Ag      | 107          | 149.97     | ppm         |
| Ag-1    | 109          | 146.39     | ppm         |
| Au      | 197          | 9.51       | ppm         |
| Au-1    | 199          | 485.69     | ppm         |
| Pd      | 106          | 23.83      | ppm         |
| Pd-1    | 108          | 23.34      | ppm         |
| Pd-2    | 105          | 19.66      | ppm         |
| Pd-3    | 110          | 40.15      | ppm         |
| Pt      | 195          | 0.63       | ppm         |
| Pt-1    | 194          | 0.65       | ppm         |
| Pt-2    | 196          | 0.67       | ppm         |
| Pt-3    | 198          | 5.46       | ppm         |
| Rh      | 103          | 0.11       | ppm         |
| Ir      | 193          | 5.80       | ppm         |
| Ir-1    | 191          | 5.75       | ppm         |
| Ru      | 102          | 0.26       | ppm         |
| Ru-1    | 104          | 7.85       | ppm         |
| Ru-2    | 101          | -0.85      | ppm         |
| Os      | 192          | -2.40      | ppm         |
| Os-1    | 190          | 1.02       | ppm         |
| Os-2    | 189          | 0.92       | ppm         |
| La      | 139          | 9.51       | ppm         |
| Ce      | 140          | 18.77      | ppm         |
| Ce-1    | 142          | 10.11      | ppm         |
| Pr      | 141          | 2.09       | ppm         |
| Nd      | 142          | 7.22       | ppm         |
| Nd-1    | 144          | 0.20       | ppm         |
| Nd-2    | 146          | -5.37      | ppm         |
| Pm      | 141          | 2.09       | ppm         |
| Sm      | 152          | 1.71       | ppm         |
| Sm-1    | 154          | 5.94       | ppm         |
| Eu      | 153          | 0.67       | ppm         |
| Eu-1    | 151          | 0.50       | ppm         |
| Gd      | 158          | 0.98       | ppm         |

**Sample ID: HACKBERRY #1 UPPER SHAFT**

Report Date/Time: Sunday, October 17, 2021 14:31:43

Page 1

|      |     |             |     |
|------|-----|-------------|-----|
| Gd-1 | 160 | 0.78        | ppm |
| Gd-2 | 156 | 2.05        | ppm |
| Tb   | 159 | 0.12        | ppm |
| Dy   | 164 | 0.44        | ppm |
| Dy-1 | 162 | 0.49        | ppm |
| Dy-2 | 163 | 0.42        | ppm |
| Ho   | 165 | 0.10        | ppm |
| Er   | 166 | 0.23        | ppm |
| Er-1 | 168 | 0.21        | ppm |
| Er-2 | 167 | 0.21        | ppm |
| Tm   | 169 | 0.06        | ppm |
| Lu   | 175 | 0.05        | ppm |
| Sc   | 45  | 70.62       | ppm |
| Th   | 232 | 3.43        | ppm |
| Y    | 89  | 1.79        | ppm |
| Yb   | 172 | 0.18        | ppm |
| Yb-1 | 174 | 0.18        | ppm |
| Yb-2 | 173 | 0.19        | ppm |
| Ti   | 48  | 529.89      | ppm |
| V    | 51  | 13.00       | ppm |
| Rb   | 85  | 56.16       | ppm |
| Cs   | 133 | 1.76        | ppm |
| Re   | 187 | 0.06        | ppm |
| Al   | 27  | 29567.67    | ppm |
| As   | 75  | 80.31       | ppm |
| Ba   | 138 | 2375.41     | ppm |
| Be   | 9   | 1.29        | ppm |
| Bi   | 209 | 3.10        | ppm |
| Ca   | 43  | 795.69      | ppm |
| Cd   | 111 | 53.56       | ppm |
| Co   | 59  | 6.56        | ppm |
| Cr   | 52  | 708.18      | ppm |
| Cu   | 63  | 12.69       | ppm |
| Cu-1 | 65  | 12.39       | ppm |
| Fe   | 57  | -1209569.71 | ppm |
| Ga   | 69  | 78.43       | ppm |
| In   | 115 | 0.06        | ppm |
| K    | 39  | 5249.55     | ppm |
| Li   | 7   | 22.76       | ppm |
| Mg   | 24  | 1261.70     | ppm |
| Mn   | 55  | 72.01       | ppm |
| Pb   | 208 | 3378.98     | ppm |
| Se   | 82  | 0.58        | ppm |
| Sr   | 88  | 286.16      | ppm |
| Tl   | 205 | 1.51        | ppm |
| U    | 238 | 11.43       | ppm |

Sample ID: HACKBERRY #1 UPPER SHAFT

Report Date/Time: Sunday, October 17, 2021 14:31:43

Page 2

|      |     |           |     |
|------|-----|-----------|-----|
| Zn   | 64  | 6287.53   | ppm |
| Zn-1 | 66  | 5694.06   | ppm |
| Zn-2 | 68  | 5601.72   | ppm |
| Hf   | 180 | 0.66      | ppm |
| Sb   | 121 | 52.97     | ppm |
| Sn   | 118 | 0.97      | ppm |
| Te   | 130 | -0.74     | ppm |
| B    | 11  | -388.47   | ppm |
| Ge   | 74  | 5.57      | ppm |
| Mo   | 98  | 17.70     | ppm |
| Nb   | 93  | 4.43      | ppm |
| P    | 31  | 139.82    | ppm |
| Si   | 28  | 320780.64 | ppm |
| Ta   | 181 | 7.19      | ppm |
| W    | 184 | 10.09     | ppm |
| Zr   | 90  | 17.04     | ppm |
| S    | 32  | 8033.69   | ppm |
| C    | 12  | 143814.89 | ppm |
| Hg   | 202 | 436.70    | ppm |
| Hg-1 | 200 | 338.49    | ppm |
| Hg-2 | 199 | 485.69    | ppm |
| Ni   | 58  | 176.39    | ppm |
| Ni-2 | 60  | 8.59      | ppm |
| Ni-3 | 62  | 10.10     | ppm |

Sample ID: HACKBERRY #1 UPPER SHAFT  
Report Date/Time: Sunday, October 17, 2021 14:31:43  
Page 3