# NI 43-101 TECHNICAL REPORT ON THE JERRITT CANYON MINE, ELKO COUNTY, NEVADA, USA

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| a | annum |
| A | ampere |
| bbl | barrels |
| btu | British thermal units |
| °C | degree Celsius |
| C$ | Canadian dollars |
| cal | calorie |
| cfm | cubic feet per minute |
| CIL | carbon in leach |
| cm | centimeter |
| $cm^2$ | square centimeter |
| dia | diameter |
| dmt | dry metric tonne |
| dwt | dead-weight ton |
| °F | degree Fahrenheit |
| ft | foot |
| $ft^2$ | square foot |
| $ft^3$ | cubic foot |
| ft/s | foot per second |
| g | gram |
| G | giga (billion) |
| gal | Imperial gallon |
| g/L | gram per liter |
| gpm | Imperial gallons per minute |
| g/t | gram per tonne |
| $gr/ft^3$ | grain per cubic foot |
| $gr/m^3$ | grain per cubic meter |
| ha | hectare |
| hp | horsepower |
| hr | hour |
| Hz | hertz |
| in. | inch |
| $in^2$ | square inch |
| J | joule |
| k | kilo (thousand) |
| kcal | kilocalorie |
| kg | kilogram |
| km | kilometer |
| $km^2$ | square kilometer |
| km/h | kilometer per hour |
| kPa | kilopascal |
| kVA | kilovolt-amperes |
| kW | kilowatt |
| kWh | kilowatt-hour |
| L | liter |
| lb | pound |
| L/s | liters per second |
| m | meter |
| M | mega (million); molar |
| $m^2$ | square meter |
| $m^3$ | cubic meter |
| µ | micron |
| MASL | meters above sea level |
| µg | microgram |
| $m^3/hr$ | cubic meters per hour |
| min | minute |
| µm | micrometer |
| mm | millimeter |
| mph | miles per hour |
| MVA | megavolt-amperes |
| MW | megawatt |
| MWhr | megawatt-hour |
| oz | Troy ounce (31.1035g) |
| oz/st, opt | ounce per short ton |
| ppb | part per billion |
| ppm | part per million |
| psia | pound per square inch absolute |
| psig | pound per square inch gauge |
| RL | relative elevation |
| s | second |
| st | short ton |
| stpa | short ton per year |
| stpd | short ton per day |
| t | metric tonne |
| tpa | metric tonne per year |
| tpd | metric tonne per day |
| US$ | United States dollar |
| USg | United States gallon |
| USgpm | US gallon per minute |
| v | volt |
| w | watt |
| wmt | wet metric tonne |
| wt% | weight percent |
| $yd^3$ | cubic yard |

# 1.0 SUMMARY

## 1.1 INTRODUCTORY STATEMENT

On April 28, 2020, Behre Dolbear & Company (USA), Inc. (Behre Dolbear) was commissioned by Ely Gold Royalties Inc. (Ely Gold) to prepare a Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) guidelines Technical Report on the Jerritt Canyon Mine. The mine is operated by Jerritt Canyon Gold LLC (JCG), a privately held company, located in the Jerritt Canyon Mining District, Elko County, Nevada, USA and is controlled by Sprott Mining Inc. (Sprott). Sprott holds an 80% interest in the property and the remaining 20% is controlled by Whitebox Advisors LLC (WBA).

*On September 9, 2019, Ely Gold closed the purchase of 100% of all rights and interests in a Per Ton Royalty Interest ("PTR") on the Jerritt Canyon Processing Facilities from an arms-length third party* [*Behre Dolbear, 2020*]. *On May 13, 2020, Ely Gold closed the purchase of a 0.5% net smelter returns royalty on the entire Jerritt Canyon property from Mr. Eric Sprott. Sprott originally acquired the royalty from Veris Gold USA Inc. in 2014, pursuant to an April 9, 2014 agreement* [*Behre Dolbear, 2020*].

Thus, this report has been prepared for a company that holds a royalty interest (not direct ownership) in the Jerritt Canyon Mine. Mining companies are typically not required to, and as a matter of practice, do not normally disclose detailed information to companies that hold a royalty interest in their operations unless legally or contractually mandated to do so. Therefore, access to information and details regarding the Jerritt Canyon Mine property is limited to what is available in the public domain.

Pursuant to Part 9.2(1) of NI 43-101, Behre Dolbear is not required to perform an onsite visit of the Project site, nor is required to complete those items under Form 43-101F1 that require data verification, inspection of documents, or personal inspection of the property. Ely Gold is relying on the exemption available under Part 9 of NI 43-101 for the completion of this NI 43-101 Technical Report. Behre Dolbear notes that some of the information residing in the public domain, particularly NI 43-101 Technical Report written by Roscoe Postle Associates Inc. (RPA), 55 University Avenue, Suite 501, Toronto, Ontario M5J 2H7, Canada, is assumed to be NI 43-101 complaint.

This technical report relies primarily upon the NI 43-101 Technical Report prepared by RPA titled "Technical Report on the Jerritt Canyon Mine, Elko County, Nevada, USA" effective September 28, 2018, as well as general information available in the public domain.

As a result, much of the information, assessments, and analysis in this report was neither prepared by Behre Dolbear nor was Behre Dolbear permitted access to the property or to the data, which it requires to verify such information, assessments, and analysis. Having regard to such limitations, Behre Dolbear is not aware of any reason to believe that such information, assessments, or analysis was not prepared or determined in accordance with industry standards and best practices.

The principal author of this Behre Dolbear technical report was employed at the Jerritt Canyon Mine as the Exploration Manager from 1995 to 2000 and does have first-hand knowledge of the geology, exploration potential, and some of the historical data of the property. Additionally, the principal author was employed, in other capacities, by the owners of the Jerritt Canyon Mine from 1976 to 2000. As such, Behre Dolbear has updated some of the historical data presented in the RPA report, particularly as concerned with the timing of the underground mining at the project prior to 2000. Updates to the text by Behre Dolbear was made to reflect current tense, data, and/or information and is annotated by the use of brackets, *italicized, and labeled* [*Behre Dolbear 2020*].

In the 2018 RPA report, it is stated that JCG is a private company that currently operates the Mine. The operation is a long-term producer, currently with four mines planning to produce, on average, 2,800 tons per day (stpd) for the remainder of 2018 from underground primarily using the cut-and-fill mining method. The four mines include the SSX-Steer Complex (SSX), West Mahala, Smith, and Saval 4. The existing processing plant is operating at a rate of 1.3 million tons of ore per year and includes primary crushing, drying, secondary, and tertiary crushing, followed by dry grinding, roasting, and thickening, using a carbon-in-leach (CIL) for gold recovery and electrowinning for gold refining. Table 1.1 shows ore production from 2015-2017.

**TABLE 1.1**
**PRODUCTION BY JCG FROM 2015 TO DECEMBER 2017**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Mine | Tons Mined | Au (oz/st) | Contained Ounces (Au) |
|---|---|---|---|
| Smith | 1,331,880 | 0.145 | 192,819 |
| SSX | 1,173,973 | 0.141 | 165,250 |
| Starvation | 193,573 | 0.215 | 41,531 |
| Saval 4 | 104,469 | 0.159 | 16,605 |
| | | | |
| **Total** | **2,803,895** | **0.148** | **416,205** |

Table 1.2 lists the Mineral Resource estimate for Jerritt Canyon as of June 30, 2018. Mineral Reserves have not been estimated for the Mine.

**TABLE 1.2**
**SUMMARY OF MINERAL RESOURCES AS OF JUNE 30, 2018**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Category | Tonnage (tons) | Grade (oz/st Au) | Contained Gold (oz) |
|---|---|---|---|
| Measured | 4,775,974 | 0.207 | 986,420 |
| Indicated | 948,937 | 0.227 | 215,179 |
| **Measured and Indicated** | **5,724,911** | **0.210** | **1,201,599** |
| | | | |
| Inferred | 3,870,249 | 0.197 | 763,921 |

**Notes:**
1) Mineral Resources are estimated using excavation volumes as at June 30, 2018.
2) CIM (2014) definitions were followed for Mineral Resources.
3) Mineral Resources are estimated using gold price of $1,500/oz.
4) Underground Mineral Resources are estimated at a cut-off grade of 0.10 oz/st Au.
5) Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
6) Numbers may not add due to rounding.

The classification of Measured, Indicated, and Inferred Resources conforms to Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves dated May 10, 2014 (CIM (2014) definitions).

RPA, in its report, indicated that it is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate. *Behre Dolbear, in its research, reached a similar conclusion* [*Behre Dolbear, 2020*].

## 1.2 CONCLUSIONS

*Behre Dolbear is not aware of any issues that have not been otherwise disclosed in this report that would materially affect the current estimates of the mineral resources and operating parameters for the Project. Behre Dolbear used the analyses obtained from the public domain and they appear reasonable, given the current market conditions. Except for some historical inaccuracies in the RPA Report (corrected by Behre Dolbear) of some pre-2000 historic data, particularly concerning timing of the earliest underground operations, Behre Dolbear agrees with the interpretations and conclusions in the RPA report* [*Behre Dolbear, 2020*].

*In particular, Behre Dolbear agrees that the exploration potential for expanding mineral resources within and adjacent to the known mineralized areas is highly likely. Also, Behre Dolbear opines that the potential for discovery of new mineralized areas is considerable due to the many known favorable structural/stratigraphic intersections have not yet been drill tested. Furthermore, Behre Dolbear opines that potential exists, albeit below the water table, for discovery of new mineralization in deeper thrust sheets where through going structural feeders intersect the favorable stratigraphic package* [*Behre Dolbear, 2020*].

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

### 1.2.1 Geology and Mineral Resources

- Site geologists have a good understanding of the regional, local, and deposit geology and controls on mineralization.
- Exploration and development sampling and analysis programs involve standard practices, providing generally reasonable results. The resulting data can effectively be used for the estimation of Mineral Resources and Mineral Reserves.
- The methods and procedures utilized to gather geological, assaying, density, and other information are reasonable and meet generally accepted industry standards.
- Sampling and assaying have been carried out using industry standard quality assurance/quality control (QA/QC) practices. These practices include, but are not limited to, sampling, assaying, chain of custody of the samples, secure sample storage, use of third-party laboratories, and use of standards, blanks, and duplicates.
- Since 2015, JCG has made considerable advances in the compilation and interpretation of historical geophysical and geochemical datasets resulting in the identification of four high priority target areas, which include Winters Creek, East Dash, Murray North, and Starvation. The property holds significant exploration potential, particularly in the southern portion.
- JCG has executed approximately one million feet of reverse circulation (RC) drilling and 81,000 ft of core drilling. This has enabled JCG to increase the size and confidence of the existing resources.
- Exploration protocols for drilling, sampling, analysis, security, and database management meet industry standard practices. The drill hole database was verified by RPA and is suitable for Mineral Resource estimation work.
- The geological wireframes are reasonable and plausible interpretations of the drill results.
- The resource model has been prepared using appropriate methodology and assumptions, including:

    - Treatment of high grade assays;
    - Compositing length;
    - Customized search parameters;
    - Bulk density;

  - Cut-off grade; and
  - Classification.

- As of June 30, 2018 and at a cut-off grade of 0.1 oz/st Au, the Measured and Indicated Mineral Resources at Jerritt Canyon total 5.7 million tons grading 0.210 oz/st Au containing 1.2 million ounces of gold. In addition, Inferred Mineral Resources are estimated at 3.9 million tons grading 0.197 oz/st Au containing 0.8 million ounces of gold.
- Mineral Resource estimates have been prepared utilizing acceptable estimation methodologies. The classification of Measured, Indicated, and Inferred Mineral Resources conforms to CIM (2014) definitions.

### 1.2.2 Mining and Mineral Reserves

- No Mineral Reserves have been estimated.
- Mining operations at Jerritt Canyon are well established and carried out by an experienced mining contractor at the Smith and SSX mines using the cut and fill mining method and by the owner's workforce at the Saval 4 mine using the sub-level longhole mining method.
- A long term operating plan has not been prepared to convert Mineral Resources to Mineral Reserves although JCG forecasts production from the four mines through *and beyond 2020* [*Behre Dolbear, 2020*].
- The Mine is challenged with high dilution caused by current mining method design parameters and project economics, as well as mineralized zones with inadequate mass or thickness to be economically recovered at current gold prices.

### 1.2.3 Mineral Processing and Metallurgical Testing

- Since JCG took ownership of the property in 2015, a number of projects have been completed that were required to mitigate the lack of maintenance performed by the previous owners and to alleviate health, safety, and environmental concerns. The bulk of the work has been completed and operating conditions have improved.
- Although historical operating data indicates that there is a relationship between gold grade and recovery, the Life of Mine (LOM) plan assumes a flat gold recovery of 85%.

### 1.2.4 Infrastructure

- The Mine is a mature operation that has been operating for more than 39 years, and as a result the infrastructure is in place, however, the tailings storage capacity is nearing the end of its life and new water treatment facilities are required to achieve a workable water balance and provide sufficient storage capacity on the property.

### 1.2.5 Environmental Considerations

- All of the necessary permits and approvals are in place to operate the Mine, however, there are a number of deficiencies in the operation that have the potential to impact mining including:

  - High concentrations of sulphate and total dissolved solids (TDS) in surface water seepage from four of the eighteen rock disposal areas (RDA);
  - Seepage from the tailing storage facility (TSF-1);
  - Limited tailings storage capacity;

- Water management constraints and the lack of a water treatment plant (WTP); and
- Numerous and nearly constant requests for modifications to permits and failure to follow through with commitments made to the regulators.

### 1.2.6 Safety

There were a large number of Mine Safety and Health Administration (MSHA) citations and extended shutdowns imposed during 2017.

## 1.3 RECOMMENDATIONS

RPA makes the following recommendations. *Behre Dolbear agrees with RPA's recommendations* [*Behre Dolbear, 2020*].

### 1.3.1 Geology and Mineral Resources

- Continue to explore the Winters Creek, East Dash, Murray North, and Starvation areas.
- Complete detailed domain and resource modelling for the above areas to estimate Mineral Resources associated with these areas.
- Continue drilling to expand Mineral Resources.
- Continue to convert Inferred Mineral Resources to Indicated Mineral Resources.
- Update the block models on a regular basis.
- Improve ore tracking and reconciliation procedures.

### 1.3.2 Mining and Mineral Reserves

- Adopt long-term planning and Mineral Reserve estimation processes, initiated by a mining method optimization trade-off study, and carry out multiple mining method planning exercises with the intention of reducing operating cut-off grades.
- Estimate Mineral Reserves.
- Adjust mobile mining fleet as necessary to achieve reduced mining heights and dilution.
- Review cut-off grades and modifying factors as part of the planning process and optimize them where appropriate.

### 1.3.3 Mineral Processing and Metallurgical Testing

- As the mechanical aspects of the plant are operational and functional, a strong emphasis should be placed on metallurgical aspects. JCG reports that the recovery is improving now that it is achieving better metallurgical control. Based on the data reviewed, it is RPA's opinion that there is potential to increase recovery by one or two percent.
- Since the mines are not able to supply sufficient mineralized material to keep the mill at full capacity, processing material in the low-grade stockpiles that has a value higher than the incremental processing and general and administrative (G&A) operating costs has the potential to increase cash flow and reduce the cost per ton.

### 1.3.4 Infrastructure

- Construction of the additional TSF capacity and a WTP are critical to operation of the Mine. These projects should be completed as soon as possible, as planned.

### 1.3.5 Environmental Considerations

- In order to maintain the excellent working relationship with the regulators, Jerritt Canyon should actively develop a permitting strategy and plan that involves seeking permit approvals and modifications on a regular basis.

### 1.3.6 Safety

- Efforts to alleviate air quality concerns in the processing facilities and provide working areas that can be accessed without wearing respirators should be a top priority and pursued vigorously.

## 1.4 ECONOMIC ANALYSIS

Under NI 43-101 rules, producing issuers may exclude the information required in Section 22.0 - Economic Analysis on properties currently in production, unless the Technical Report includes a material expansion of current production. RPA notes that JCG is a producing issuer, the Jerritt Canyon Mine is currently in production, and a material expansion is not being planned.

## 1.5 TECHNICAL SUMMARY

### 1.5.1 Property Description and Location

The JCG property is located in Elko County, northeast Nevada. The mill site, shops, and administration and security buildings are located approximately 45 miles north of the town of Elko. The property forms an irregular area that extends approximately 21 miles north-south and 17 miles east-west at its widest and is approximately 119 square miles. The property is bounded by 116° 10′ west and 115° 78″ west longitude and 41° 23′ north and 41° 46′ north latitude. The property boundaries have been surveyed and are located in the field with wooden stakes.

The operations are located on a combination of public and private lands, with the deposits and mining related surface facilities being located primarily on mining claims in United States Forest Service (USFS) land within the Humboldt-Toiyabe National Forest. The process facilities, offices, shops, and tailings dams are located on private land owned by JCG. Additional claims in the southern part of the land package are mostly located on private land with some located on land administered by the United States Bureau of Land Management (BLM).

### 1.5.2 Land Tenure

Land tenure on the JCG property includes patented claims, unpatented claims, and fee land. The property covers a large area that extends approximately 21 miles north-south and 17 miles east-west at its widest and is approximately 119 square miles.

### 1.5.3 Existing Infrastructure

The Mine has been in commercial production for approximately 39 years and the infrastructure to support a mining and milling operation is established. Surface rights to sustain mining operations on the Mine property are secured through current ownership and claim holder rights. The current infrastructure includes:

- Office buildings;
- Warehouse facilities;

- Maintenance shops;
- Laboratory facilities;
- Communication networks;
- Onsite security;
- TSFs; and
- Water management systems.

The main access road is approximately seven miles long and is a 22 ft wide paved road between Nevada Highway 225 and the mill site. A 100 ft wide haul road provides access between the major mines and the mill site. This road network is approximately 17 miles long.

Power to the Mine is purchased from Nevada Energy through a 125 kV, three-phase transmission line. Monthly power consumption is approximately 8.0 MWh.

Water available on site is sufficient to support all mining and milling operations. All water used at the Mine is from permitted and certificated water rights held by JCG and regulated by the Nevada Division of Water Resources.

### 1.5.4 History

#### 1.5.4.1 Ownership History

In 1972, Food Machinery Corporation (FMC) discovered the *Alchem disseminated gold deposit* [*Behre Dolbear, 2020*] at Jerritt Canyon.

The ownership history of the property is summarized as follows.

In 1976, *FMC, later to become Meridian Gold LLC (Meridian) formed a joint venture (JV) with Freeport Minerals Company* [*Behre Dolbear, 2020*], later to become Freeport McMoran (Freeport), to explore and develop the property. Mining at Jerritt Canyon commenced in 1980, with *Freeport as the operator* [*Behre Dolbear, 2020*]. In 1990, Freeport sold its interest in the Jerritt Canyon JV to Minorco SA (Minorco). This purchase allowed Minorco (through its wholly owned subsidiary Independence Mining Company) to retain their 70% percentage ownership of the property and to remain operator. Meridian retained its 30% ownership of the property [*Note changes from RPA report by Behre Dolbear, 2020*]. In 1998, Minorco sold its 70% interest in Jerritt Canyon JV to AngloGold Ltd. (AngloGold).

In 2003, Queenstake Resources USA Inc. (a subsidiary of Queenstake Resources Ltd.) purchased a 100% interest in the Jerritt Canyon property from the JV partners Meridian and AngloGold. In June 2007, Queenstake Resources USA Inc. became a wholly owned subsidiary of Yukon-Nevada Gold Corp. (Yukon-Nevada) which was formed by the merger of Queenstake Resources Ltd. and YGC Resources Ltd. In October 2012, Yukon-Nevada changed its name to Veris Gold Corp. (Veris). In January 2013, Queenstake Resources USA Inc., now a wholly owned subsidiary of Veris, changed its name to Veris Gold USA Inc. (VUSA). In 2014, Veris declared bankruptcy.

In 2015, JCG acquired an 80% interest in the Mine property. The remaining 20% was held by WBOX 2014-1 Ltd. which had an outstanding balance on a loan made to Veris.

#### 1.5.4.2 Operations History

In 1976, significant mineralization was discovered in the Marlboro Canyon and Generator Hill area. The first gold production from the property occurred in July 1981.

Open pit mining was conducted from early 1981 until late 1999, with the mining carried out in the areas of Marlboro Canyon, Alchem, Lower North Generator Hill, Upper North Generator Hill, West Generator, Burns Basin, Mill Creek, Pattani Springs, California Mountains, Dash, Winters Creek, Steer Canyon, and Saval Canyon. The annual production from these areas ranged from approximately 40,000 ounces to 1.4 million ounces.

Underground production started in *1993 at the West Generator and Murray Mines* [*Behre Dolbear, 2020*] and continued until 2008 with production from the Steer, Murray, MCE, Smith, West Generator, SSX, and Saval deposits. In 2009, a new mine plan was prepared. Underground mining from the Smith deposit recommenced in late January 2010 and underground mining at SSX recommenced in early October 2010.

From the start of mining in 1980 to the end of 2017, a total of 9,344,410 ounces of gold were produced from 46,574,928 tons of ore mined at an average grade of 0.201 oz/st Au. Since assuming ownership in June 2015, JCG has mined approximately 2.8 million tons at an average grade of 0.148 oz/st Au containing a total of approximately 416,000 ounces of gold.

### 1.5.5 Geology and Mineralization

The Jerritt Canyon Gold District is located in the Great Basin, north and northeast of the Carlin Trend of gold deposits. Carlin-type gold mineralization at Jerritt Canyon is hosted by silty carbonate or carbonaceous siliciclastic rocks originally deposited as shelf sedimentary rocks during the Paleozoic. The Paleozoic host rocks have been imbricated, faulted, and folded through several orogenic events through the Paleozoic and Mesozoic. Carlin-type gold deposits were emplaced in the Middle to Late Eocene during an initial phase of extensional tectonics at which time high potassium calc-alkaline magmatic rocks were emplaced. Mafic dikes were emplaced during this phase of igneous activity and trend north- northeast and west-northwest.

The occurrence and distribution of gold mineralization at Jerritt Canyon is controlled by both lithology and structure. Deposits at Jerritt Canyon are mostly stratabound or fault hosted. Gold occurs as very fine, micron-size, particles in pyrite and arsenian pyrite.

### 1.5.6 Exploration Status

Exploration completed by JCG has included desktop compilation and interpretation of historical datasets, target identification, and RC drilling. Since acquisition of the property, JCG has completed two phases of surface drilling as well as underground drilling, which is on-going. From June 23, 2015 through to the end of 2017, JCG drilled a total of 81,720 ft in 114 core holes and a total of 1,024,995 ft in 7,413 RC holes underground.

As of May 31, 2017, the data cut-off date for the current Mineral Resource estimate, the surface database contained 15,090 drill holes and the production database contained 47,705 drill holes.

### 1.5.7 Mineral Resources

The technical work for this report was initiated in May 2017. Wireframe modelling for the underground SSX-West Mahala deposit and Saval 4 mine and block modelling for the SSX- West Mahala deposit were completed by RPA. Wireframe modelling for the Smith mine and block modelling for the Smith and Saval 4 mines were completed by JCG and provided to RPA for verification and audit.

RPA built individual mineralized wireframes for the SSX-West Mahala deposit. The wireframes were built based on approximately a 0.095 oz/st Au wireframe cut-off grade. A total of 197, 50, and 10 mineralized wireframes were created for SSX-West Mahala, Smith, and Saval, respectively.

Sample information for the diamond drill holes and RC holes was composited into nominal equal lengths of five feet using the run-length compositing algorithm of the Vulcan mine modelling software package. Composited assay values were created on an individual zone basis. RPA capped the assays to 2.0 oz/st Au prior to compositing.

Two separate block models were constructed to model the mineralization in Zones 1, 2, 3, and 9, and Zones 4, 5, 6, and 7 of the SSX-West Mahala deposit. Due to the different thickness of the mineralized wireframes and the shape extremities, the size of the block model for the underground mine was selected to be 2.5 ft × 2.5 ft × 2.5 ft (maximum of 5 ft × 5 ft × 5 ft). Gold grades were estimated into the blocks using $ID^3$. A total of four interpolation passes were carried out to estimate the gold grades in the underground block model using inverse distance cubed ($ID^3$).

A 20 ft dilution zone was created around the mineralized wireframe models. A single-pass estimation strategy was applied when estimating the grades for the dilution domain in the underground mine block model.

For reporting of underground Mineral Resources, the 0.10 oz/st Au cut-off grade was estimated using a gold price of US$1,500 per ounce.

At a cut-off grade of 0.10 oz/st Au, the Measured and Indicated Mineral Resources at Jerritt Canyon total 5.7 million tons grading 0.210 oz/st Au containing 1.2 million ounces of gold. In addition, Inferred Mineral Resources are estimated at 3.9 million tons grading 0.197 oz/st Au containing 0.8 million ounces of gold.

### 1.5.8 Mining

Jerritt Canyon has been in operation since 1981. Between 1981 and 1999, mining was by open pit. Underground operations began in 1993 at the *West Generator and Murray Mine* [*Behre Dolbear, 2020*]*. Underground operations at Steer Saval Extension (SSX) started in 1997. Underground development at the Lee Smith Mine (Smith Mine) was accessed through the Dash open pit* [*Behre Dolbear, 2020*]. The Smith and SSX underground mines are currently operational using mining contractors. The Saval 4 mine and the West Mahala zone contained within the SSX mine are owner operated.

Mining is by the cut and fill mining method at the Smith, SSX, and West Mahala mines and sublevel longhole mining method at Saval 4. A significant portion of the Mineral Resources at Smith, SSX, and West Mahala is located below the water table and will require dewatering. Dewatering infrastructure, including pumps, dewatering wells and a water treatment facility, is partially completed.

### 1.5.9 Mineral Processing

The processing facilities at Jerritt Canyon are designed to operate at a rate of 4,500 stpd with an operating availability of 90% and are permitted to operate at 6,000 stpd. The facilities include:

- Primary crushing;
- Ore drying;
- Secondary crushing;
- Tertiary crushing;
- Dry grinding;
- Roasting;
- Thickening;
- CIL;
- Carbon stripping;

- Carbon reactivation;
- Electrowinning;
- Electrowinning sludge refining;
- Oxygen plant;
- Cooling pond;
- Water evaporation pond; and
- Tailing impoundment.

### 1.5.10 Environmental, Permitting, and Social Considerations

JCG has been in operation since 1981. Prior to and during operation, numerous environmental studies and evaluations have been conducted to support permit applications and operations. An Environmental Impact Statement (EIS) was completed and the Record of Decision (ROD) was issued in 1980. Operating permits are in place and current.

Some of the previous owners are known to have operated inefficiently, which resulted in a number of environmental concerns, including seepage from the TSF, limited TSF capacity, lack of water treatment facilities, etc. JCG inherited this legacy and has been working diligently to mitigate the concerns since it took over the operation.

Jerritt Canyon is located in Elko County, Nevada which is a mining-friendly jurisdiction. Numerous other mining operations are located in the same area and JCG has a good relationship with the local community.

Approved closure and reclamation plans are in place for Jerritt Canyon. The total reclamation costs, as updated in 2018, estimated from the 2017 Annual Work Plan (AWP) are approximately $84.5 million.

## 2.0 INTRODUCTION

On April 28, 2020, Behre Dolbear & Company (USA), Inc. (Behre Dolbear) was commissioned by Ely Gold Royalties Inc. (Ely Gold) to prepare a Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) compliant Technical Report on the Jerritt Canyon Mine where Ely Gold holds a Per Ton Royalty Interest on the Jerritt Canyon Mine Processing Facilities. The Jerritt Canyon Operations, located in Elko Nevada, USA, encompasses a number of underground operations, and are operated by Jerritt Canyon Gold LLC, a privately held company (JGC). The mining operations are located in the Jerritt Canyon Mining District, Elko County, Nevada and is controlled by Sprott Mining Inc. (Sprott). Sprott holds an 80% interest in the property and the remaining 20% is controlled by Whitebox Advisors LLC (WBA).

*On September 9, 2019, Ely Gold closed the purchase of 100% of all rights and interests in a Per Ton Royalty Interest ("PTR") on the Jerritt Canyon Processing Facilities from an arms-length third party* [*Behre Dolbear, 2020*].

JCG is a mid-tier North American gold producer. JCG's primary assets are the permitted and operating Jeritt Canyon processing plant and four gold mines – SSX-Steer Complex (SSX), West Mahala, Smith and Saval 4, located 50 miles north of Elko, Nevada. Since mining began at Jerritt Canyon in 1981, more than 8 million ounces of gold have been produced. *Underground mining operations commenced with a small operation at the bottom of the West Generator Pit in 1993 followed by extensive mining at the Murray Mine, also in 1993* [*Behre Dolbear, 2020*]. *In 1998, underground operations began at the SSX Mine, followed several years later by development of the Lee Smith underground mine, accessed through the Dash open pit* [*Behre Dolbear, 2020*].

## 2.1 TERMS OF REFERENCE

This report has been prepared for a company that holds a royalty interest (not direct ownership) in the Jerritt Canyon Mine. Mining companies are not typically required to, and as a matter of practice, do not normally disclose detailed information to companies that hold a royalty interest in their operations unless legally or contractually mandated to do so. Therefore, Ely Gold's access to information and details regarding the Jerritt Canyon Mine property is limited to what is available in the public domain.

Pursuant to Part 9.2(1) of NI 43-101, Behre Dolbear is not required to perform an onsite visit of the Project site, nor is required to complete those items under Form 43-101F1 that require data verification, inspection of documents, or personal inspection of the property. Ely Gold is relying on the exemption available under Part 9 of NI 43-101 for the completion of this NI 43-101 Technical Report. Behre Dolbear notes that some of the information residing in the public domain, particularly the NI 43-101 Technical Report written by Roscoe Postle Associates Inc. (RPA), 55 University Avenue, Suite 501, Toronto, Ontario M5J 2H7, Canada is assumed to be NI 43-101 complaint.

The information contained in this report is effective as of June 8, 2020.

## 2.2 SOURCES OF INFORMATION

This technical report relies primarily upon the NI 43-101 Technical Report prepared by RPA titled "Technical Report on the Jerritt Canyon Mine, Elko County, Nevada, USA" effective September 28, 2018, as well as general information available in the public domain. The principal author of this Behre Dolbear technical report was employed at the Jerritt Canyon Mine as an Exploration Manager from 1995 to 2000 and does have first-hand knowledge of the geology and some of the historical data of the property. Additionally, the principal author was employed, in other capacities, by the owners of the Jerritt Canyon Mine from 1976 to 2000. As such, Behre Dolbear has corrected some of the historical data presented in the RPA report, particularly as concerned with the timing of the underground mining at the project prior to 2000.

The RPA personnel, areas and sections of responsibility, dates of site visits and JCG contacts are listed under "Sources of Information" in the RPA technical report.

## 2.3 UNITS OF MEASUREMENT

Units of measurement used in this report conform to the imperial system. All currency in this report is US dollars (US$) unless otherwise noted.

## 3.0 RELIANCE ON OTHER EXPERTS

The Canadian National Instrument (NI) 43-101 Technical Reports contain certain requirements relating to disclosure of technical information in respect of mineral projects. The information contained herein with respect to operation at JCG is primarily extracted from the RPA Technical Report and general information available in the public domain. Behre Dolbear did not conduct a site visit, did not independently sample and assay portions of the deposit, and did not review the following items prescribed by NI 43-101 *deposit because it did not have access to the relevant material and data* [*Behre Dolbear, 2020*]:

i) geological investigations, reconciliation studies, independent check assaying, and independent audits;
ii) estimates and classification of Mineral Resources and Ore Reserves, including the methodologies applied by the mining company and RPA in determining such estimates and classifications, such as check calculations; or
iii) life-of-mine (LoM) plan and supporting documentation and the associated technical parameters, including assumptions regarding future operating costs, capital expenditures, and saleable metal for the mining asset.

Generally, NI 43-101 requires that the qualified person who is responsible for preparing (or supervising the preparation of) all or part of a technical report have completed a current inspection on the property that is the subject of the report and must personally perform data verification and document inspection. In recognizing the limited access customarily afforded by project operators to holders of royalty (or similar) interests, NI 43-101 does not require such inspections and verifications, if the holder has requested, but not received, access to the project/necessary data and further permits the information in the technical report to be based on, and limited to, information which is in the public domain. As a royalty company, Ely Gold is not entitled to detailed or confidential information regarding the Jerritt Canyon mining operations. Due to the confidential nature of the underlying data that supports the RPA Technical report and Ely Gold's lack of legal rights to obtain this data, Behre Dolbear was unable to conduct detailed, thorough, and independent assessments. Therefore, the data available for the preparation of this report was significantly limited, especially in consideration of the requisite report requirements of the NI 43-101.

This report includes technical information that requires subsequent calculations to derive subtotals, totals, and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, Behre Dolbear does not consider them to be material to the findings and use of the Technical Report.

The achievability of LOM plans, budgets, and forecasts in inherently uncertain. Consequently, actual results may be significantly more or less favorable.

Behre Dolbear reviewed a limited amount of pertinent maps and agreements to assess the validity and ownership of mining property and royalty agreement. However, Behre Dolbear did not conduct an in-depth review of the mineral title and ownership; consequently, no opinion is expressed by Behre Dolbear on this subject. The principal author of this Behre Dolbear Technical Report was employed at the Jerritt Canyon Mine as the Exploration Manager from 1995 to 2000 and does have first-hand knowledge of the geology, exploration potential and some of the historical data of the property. Additionally, the principal author was employed, in other capacities, by the owners of the Jerritt Canyon Mine from 1976 to 2000. As such, Behre Dolbear has corrected some of the historical data presented in the RPA report, particularly as concerned with the timing of the underground mining at the project.

RPA has not reviewed this report and takes no responsibility nor assumes any liability for the statements in this report. No express or implied representation or warranty has been made by RPA that the contents of this report are verified, accurate, suitably qualified, reasonable, or free from errors, omissions, or other defects. The RPA Technical Report was prepared to satisfy the technical requirement of NI 43-101. *Behre Dolbear did not receive a copy of the RPA Technical Report directly from RPA. The RPA Technical Report was available for Behre Dolbear's use, as it is posted on JCG's website* [*Behre Dolbear, 2020*].

The RPA Technical Report is current only as of its date. Neither RPA nor any of the qualified persons who prepared the RPA Technical Report have made or makes any representation to Ely Gold or any other person in any way relating as to the accuracy or fitness for any use or purpose of any part of the RPA Technical Report, as currently contemplated by Ely Gold or otherwise.

No information came to Behre Dolbear's attention during their review of the data and information contained in the RPA Technical Report (aside from historical dates of underground development) that would cause Behre Dolbear to doubt the integrity of such data and information.

## 3.1 LIMITATIONS AND RELIANCE ON INFORMATION

The royalty holder is not entitled to detailed or confidential information regarding the Jerritt Canyon Mine project. Ely Gold requested the operator (JCG) for and was refused access to technical data on the project. Due to the royalty holder's lack of legal rights to obtain this data, Behre Dolbear was unable to conduct a detailed, thorough, and independent assessment. Therefore, the data available for the preparation of this report was significantly limited, especially in consideration of the requisite reporting requirements of the NI 43-101.

This report includes technical information that requires subsequent calculations to derive subtotals, totals, and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, Behre Dolbear does not consider them to be material to the findings and use in this Technical Report.

The achievability of the LOM plans, budgets, and forecasts is inherently uncertain. Consequently, actual results may be significantly more or less favorable. Behre Dolbear was unable to conduct an in-depth review of mineral title and ownership; consequently, no opinion will be expressed by Behre Dolbear on this subject. Ely Gold previously conducted a title review on the royalty interest.

Pursuant to Part 9.2 (1) of NI 43-101, *Behre Dolbear did not conduct a site visit, as part of the process of preparation of this NI 43-101 compliant technical report* [*Behre Dolbear, 2020*].

*Behre Dolbear is not required to complete those items under Form 43-101 F1 that require data verification, inspection of documents, or personal inspection of the property. The royalty holder is relying on the exemption available under Part 9 of NI 43-101, as it has requested but was denied access to the necessary data from JCG and is not able to obtain the necessary information from the public domain. Behre Dolbear notes that some of the information residing in the public domain is generated internally by RPA, especially the Mineral Resources and Ore Reserves, require NI 43-101 compliance for public disclosure. Behre Dolbear has assumed such information has been prepared on a NI 43-101 compliant basis. Behre Dolbear also notes that only Mineral Resources were estimated by RPA. No Mineral Reserves were estimated* [*Behre Dolbear, 2020*].

## 4.0 PROPERTY POSITION AND LOCATION

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

## 4.1 PROPERTY POSITION AND LOCATION

The JCG property is located in Elko County, northeastern Nevada (Figure 4.1). The mill site, shops, and administration and security buildings are located approximately 45 miles north of the town of Elko. The property covers a large area that extends approximately 21 miles north-south and 17 miles east-west at its widest and is approximately 119 square miles (Figure 4.2). The property is bounded by 116°10’ west and 115°78’ west longitude and 41°23’ north and 41°46’ north latitude. The property boundaries have been surveyed and are located in the field with wooden stakes.

The operations are located on a combination of public and private lands, with the mines and mining related surface facilities being located primarily on mining claims in United States Forest Service (USFS) land within the Humboldt-Toiyabe National Forest (Figure 4.2). The process facilities, offices, shops, and tailings dams are located on private land owned by JCG. Additional claims in the southern part of the land package are located primarily on private lands with some located on lands administered by the Bureau of Land Management (BLM).

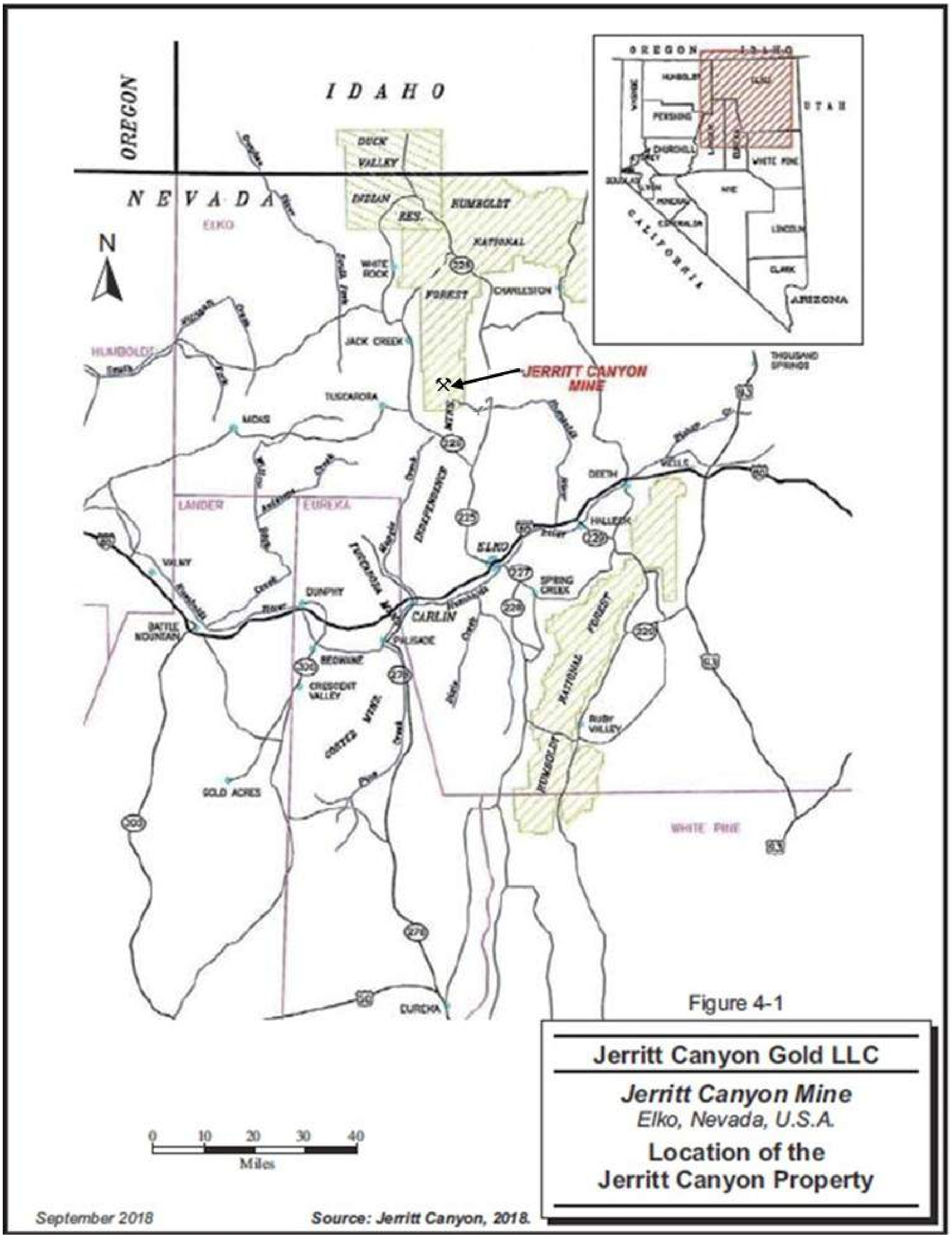


**Figure 4.1. Location of the Jerritt Canyon Property**
**Source: (RPA, 2018)**

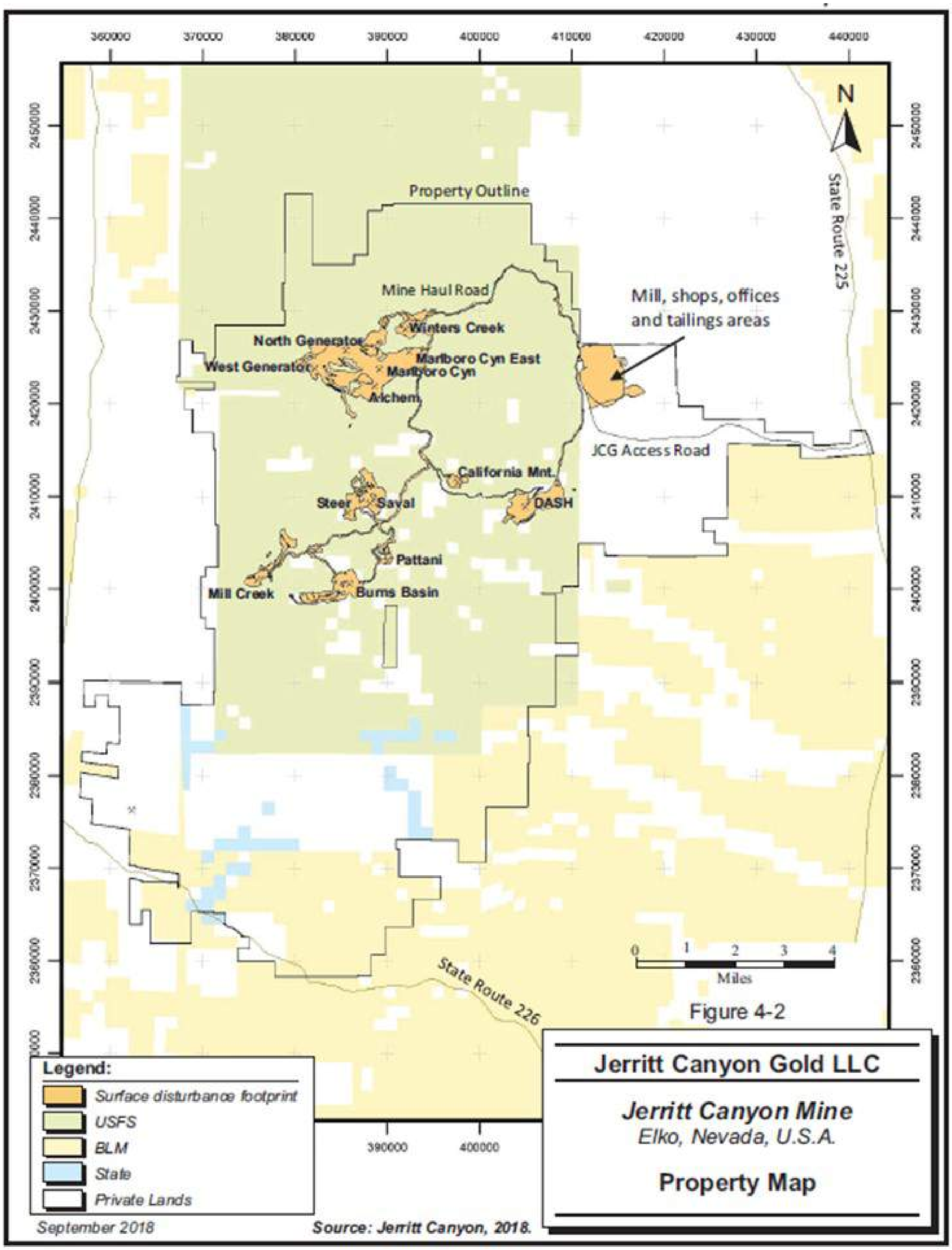


**Figure 4.2. Property map**
**Source: (RPA, 2018)**

## 4.2 LAND TENURE

Land tenure types on the JCG property include patented claims, unpatented claims, and fee land. Claims and fee land comprising the JCG property are both owned and leased and are summarized in Table 4.1.

**TABLE 4.1**
**SUMMARY OF CLAIMS**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Title Type | No. Claims | Acres |
|---|---|---|
| Unpatented Owned Claims | 2,910 | |
| Unpatented Leased Claims | 278 | |
| Fee Land Owned | | 12,433 |
| Fee Land Leased | | 11,271 |
| Patented Claims Owned | | 24,715 |
| | | |
| **Totals** | **3,188** | **48,419** |

The distribution of patented claims, unpatented claims, and fee land are illustrated in Figure 4.3, Figure 4.4, and Figure 4.5, respectively. The rights associated with the fee land include mineral and surface and are different for the various land packages (agreements) (Figure 4.5). Yearly fees to maintain the unpatented claims in good standing consist of $155 per claim payable to the BLM and $12 per claim payable to the Elko County Recorder. Each document submitted to the Elko County Recorder also requires a one-time document fee of $10. The claim payments for 2018–2019 are summarized in Table 4.2. The yearly BLM renewal date is September 30. The payment of fees and filing of documents (indicating the intent to maintain unpatented mining claims and the completion of the BLM maintenance fee payment) with the Elko County Recorder are due November 1.

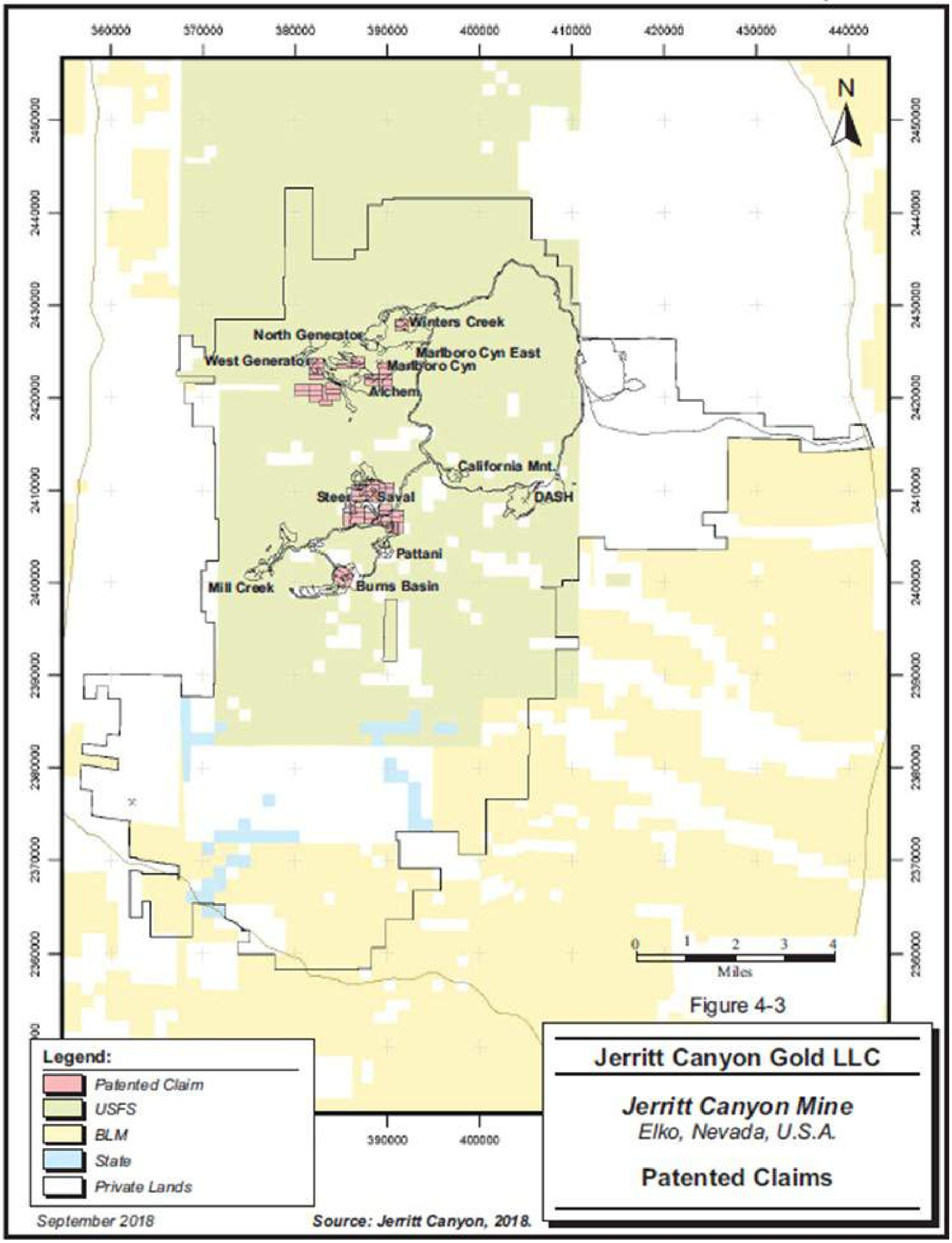


**Figure 4.3. Patented claims**
**Source: (RPA, 2018)**

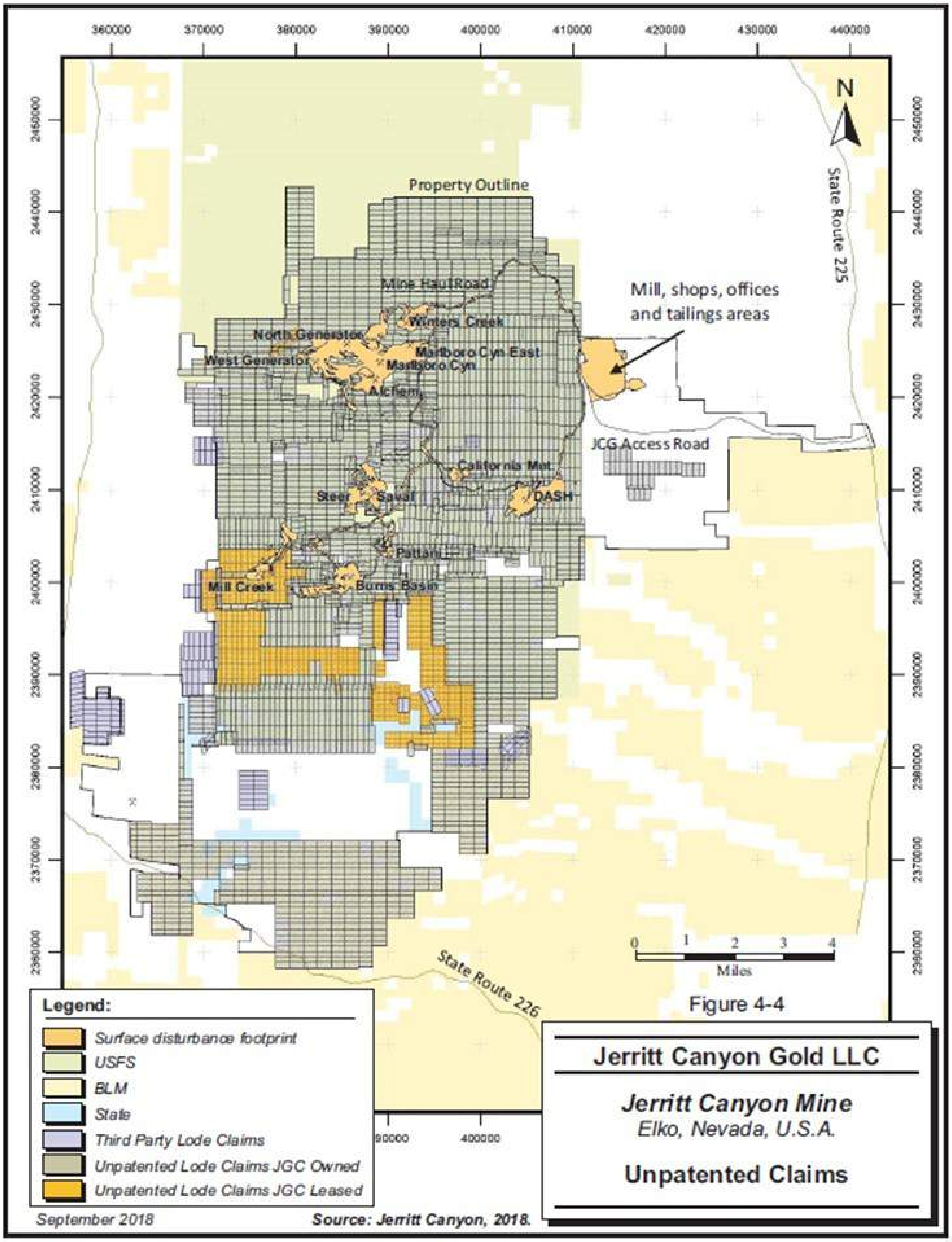


**Figure 4.4. Unpatented claims**
**Source: (RPA, 2018)**

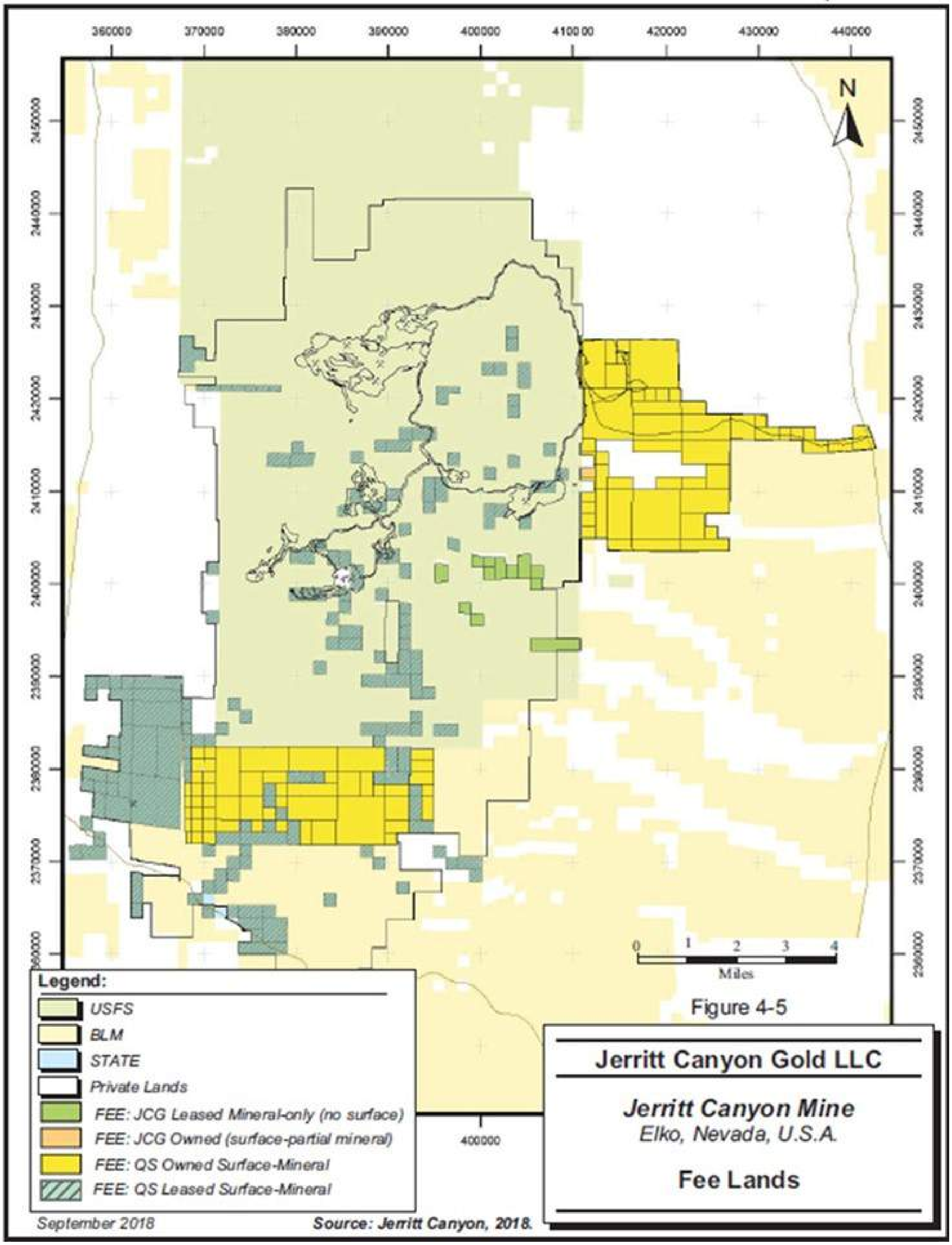


**Figure 4.5. Fee lands**
**Source: (RPA, 2018)**

**TABLE 4.2**
**SUMMARY OF CLAIM PAYMENTS**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Claim Type and Lease | No. | BLM Maintenance Fees ($155/claim) | Elko County Recorder ($12/claim) | Elko County Technology and Foster Care Fees ($10/document) | Elko County Total |
|---|---|---|---|---|---|
| **Owned Unpatented Lode Claims – Total** | **2,910** | **451,050.00** | **34,920.00** | **10.00** | **34,930.00** |
| | | | | | |
| Lease NV 10101 – SONA Claims | 141 | 21,855.00 | 1,692.00 | 10.00 | **1,702.00** |
| Lease NV 10105 – ED Claims | 121 | 18,755.00 | 1,452.00 | 10.00 | **1,462.00** |
| Lease NV 10120 – BIRDS EYE Claims | 10 | 1,550.00 | 120.00 | 10.00 | **130.00** |
| Lease NV 10125 – ARANA Claims | 6 | 930.00 | 72.00 | 10.00 | **82.00** |
| | | | | | |
| **Lease Unpatented Load Claims – Total** | **278** | **43,090.00** | **3,336.00** | **40.00** | **3,376.00** |

Some of the claims and fee lands are subject to a Net Smelter Return (NSR) royalty, which varies from 1.5% to 6% depending upon the lease agreements with various property owners. The fee land, which was originally purchased to secure access from State Route 225, is subject to a 33% NSR; however, future gold production from this land is unlikely. The distribution of claims and fee lands subject to royalty payments is illustrated in Figure 4.5.

There are currently three NV lease file agreements (files NV-10106, NV-10110, NV-10113) that cover land that has mine production. As a result, the lease-holders of the producing land are entitled to receive production royalty payments that range from 2.5% to 5%.

Other land held by lease-holders may be subject to annual or semi-annual land payments that include advance royalties, land-use payments, rentals, loss of grazing, and the use of land for a communications tower. The advance royalties are the minimum amounts the lease-holders are entitled to annually. On producing land, these advance royalties may be recovered by JCG if certain production royalty thresholds are met or surpassed during the course of the production year. Some of the land payments may be adjusted annually based on consumer/producer price indexes or annual increases.

RPA is not aware of any environmental liabilities on the property. JCG has all required permits to conduct the proposed work on the property. The licenses and permits required as well as government authority and description of the application are summarized in Section 20.0 of this report. RPA is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform the proposed work program on the property.

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

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

## 5.1 ACCESSIBILITY

The Mine property is located in Elko County, Nevada approximately 50 miles north of the town of Elko. Access to the property is by Nevada State Route (SR) 225 to the mine access road (Figure 4.1 and Figure 4.2). The mine access road is approximately seven miles from Nevada SR 225 to the main gate where the administrative offices, process plant, warehouse, maintenance shops, and tailings impoundment areas are located. The access road is asphalt and in good condition. The mines are accessed via a main haul road which is maintained on a regular basis (Figure 4.2). Historical mines, active reclamation sites, and exploration sites are accessed through lesser or unmaintained roads and trails**.**

## 5.2 CLIMATE

The climate is temperate with winter temperatures between 0°F and 40°F and summer temperatures between 35°F and 90°F. Average annual precipitation at the tailings impoundment is 14 in. and average annual evaporation is 43 in. A significant amount of precipitation falls as snow and increases with elevation towards the mining areas. Mine operations are rarely halted by weather conditions, although ore haulage from the mines may take longer times. The mill, warehouse, shop, and administrative facilities are at a lower elevation and therefore are less exposed to weather extremes. Snowfall is generally common from December to May.

## 5.3 LOCAL RESOURCES

With a population of approximately 20,500, Elko is the closest town to the property. Elko straddles Interstate 80 and is serviced by daily commercial flights from/to Salt Lake City, Utah. It is approximately 230 miles west of Salt Lake City, Utah and 290 miles east of Reno, Nevada. Most of the Jerritt Canyon workforce reside in Elko and the adjacent town of Spring Creek. Other communities in northern Nevada and Utah provide a labor force to support mining at Jerritt Canyon and other operations in northern Nevada. Elko is a supply center for the mining industry of northern Nevada and most equipment, supplies, and services can be sourced in Elko. All supplies and equipment can be transported over Nevada SR 225, the mine access road, and the mine haul road.

## 5.4 INFRASTRUCTURE

The Mine has been in commercial production for approximately 37 years and the infrastructure to support a mining and milling operation is well established. Surface rights to sustain mining operations on the Mine property are secured through current ownership and claim holder rights.

Power to the mine site is purchased from Nevada Energy through a 125 kV, three-phase transmission line. The power is brought onto the property through a station located in the processing plant area and is distributed to the mines and other requirements through a grid of surface lines.

Water available on site is sufficient to support all mining and milling operations. Approximately 700 gpm of water is required to operate the mill with two primary water sources: (1) a "dirty" water source consisting of the tailings storage facility-1 (TSF-1) seepage collection system that has contributions from 90 small diameter water wells around TSF-1, four seepage collection trenches, and three embankment blanket drains that collectively produce 1,000 gpm; and (2) a cleaner water source from two deep water wells that are each capable of producing 500 gpm. All water used at the Mine is from permitted and certificated water rights held by JCG and regulated by the Nevada Division of Water Resources.

Surface rights owned by JCG around the existing tailings storage areas provide sufficient space for additional tailings storage and water storage to support future mining.

## 6.0 HISTORY

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

## 6.1 OWNERSHIP HISTORY

In 1972, Food Machinery Corporation (FMC) discovered a disseminated gold *deposit* [*Alchem deposit, Behre Dolbear, 2020*] at Jerritt Canyon. The ownership history of the property is summarized as follows.

- In 1976, *FMC, later to become Meridian Gold LLC (Meridian) formed a joint venture (JV) with Freeport Minerals Company, later to become Freeport McMoran (Freeport), to explore and develop the property. Mining at Jerritt Canyon commenced in 1980, with Freeport as operator* [*Behre Dolbear, 2020*].
- In 1990, Freeport sold its interest in the Jerritt Canyon JV to Minorco SA (Minorco). This purchase allowed Minorco (through its wholly owned subsidiary Independence Mining Company) to retain their 70% percentage ownership of the property and to remain operator. Meridian retained its 30% ownership of the property. [*Note changes from RPA report by Behre Dolbear, 2020*].
- In 1998, Minorco sold its 70% interest in Jerritt Canyon JV to AngloGold Ltd. (AngloGold).
- In 2003, Queenstake Resources USA Inc. (a subsidiary of Queenstake Resources Ltd.) purchased a 100% interest in the Jerritt Canyon property from the JV partners Meridian and AngloGold.
- In June 2007, Queenstake Resources USA Inc. became a wholly owned subsidiary of Yukon-Nevada Gold Corp. (Yukon-Nevada), which was formed by the merger of Queenstake Resources Ltd. and YGC Resources Ltd.
- In October 2012, Yukon-Nevada changed its name to Veris Gold Corp. (Veris).
- In January 2013, Queenstake Resources USA Inc., now a wholly owned subsidiary of Veris, changed its name to Veris Gold USA Inc. (VUSA). In 2014, Veris declared bankruptcy.
- In 2015, JCG acquired an 80% interest in the Mine property. The remaining 20% was held by WBOX 2014-1 Ltd., which had an outstanding balance on a loan made to Veris.

## 6.2 PRODUCTION HISTORY

The gold mineralization discovered in the Jerritt Canyon area in 1972 shared similar metallurgical challenges to the mineralization that had been discovered by Newmont Mining Corporation (Newmont) elsewhere in the Carlin Trend. Subsequent advances in processing technologies for gold deposits of the Carlin Trend resulted in this style of mineralization becoming economically viable. In 1976, *FMC and Freeport* [*Behre Dolbear, 2020*] formed a joint venture to explore and develop the gold deposits in the Jerritt Canyon area and in 1980 mining commenced with production from the North Generator and Marlboro Canyon open pit mines. *The first gold production from the property occurred on July 4, 1981* [*Behre Dolbear, 2020*].

Open pit mining was conducted from early 1981 until late 1999, in the areas of Marlboro Canyon, Alchem, Lower North Generator Hill, Upper North Generator Hill, West Generator, Burns Basin, Burns Basin North, Mill Creek, Pattani Springs, California Mountains, Dash, Winters Creek, Steer Canyon, and Saval Canyon. The open pit production from these areas ranged from approximately 40,000 ounces from Pattani Springs to 1.4 million ounces from Marlboro Canyon and totaled 5.2 million ounces.

*Underground operations began in 1993 at the West Generator and Murray Mine* [*Behre Dolbear, 2020*]*. The Murray Mine deposit was previously termed the Gracie-New Deep deposit. Underground operations at Steer Saval*

*Extension (SSX) started in 1997. Underground development at the Marlboro Canyon Extension (MCE) began in the late 1990s and was accessed through the north wall of the Marlboro Canyon pit. The MCE deposit was originally termed the Papillion deposit* [*Behre Dolbear, 2020*]*. Underground development at the Lee Smith Mine (Smith Mine) was accessed through the Dash open pit. The Smith Mine deposit was originally termed the Coulee deposit* [*Behre Dolbear, 2020*]*.* By 2008, underground mining had been undertaken at the West Generator, Murray, MCE, Smith, and SSX (including Steer and Saval) Mines.

In 2008, the operating company, Queenstake, decided to shut down mining operations due to increasing costs associated with infrastructure expenditures and also partly because of an inability to secure all required environmental permits in a timely manner.

In 2009, the Nevada Division of Environmental Protection (NDEP) approved plans for recommencement of Jerritt Canyon production. Queenstake also completed major modifications of the key components of the roaster, leach circuit, thickener, and other sections of the mill.

In 2009, a new mine plan was prepared. Underground mining from the Smith deposit restarted in late January 2010 using contract miner, SMD. Underground mining at SSX recommenced in early October 2010 using Queenstake staff.

From the start of mining in 1980 to the end of 2017, a total of 9,344,410 ounces of gold were produced from 46,574,928 tons of ore mined at an average grade of 0.201 oz/st Au (Table 6.1). Open pit mining produced a total of approximately 5.20 million ounces contained within total of approximately 29.8 million tons of ore at an average grade of 0.175 oz/st Au. The underground mines produced a total of approximately 4.14 million ounces contained within a total of approximately 16.8 million tons of ore at an average grade of 0.247 oz/st Au. Since 2010, most of the production has come from the SSX and Smith deposits, as detailed in Table 6.1.

All current mining is from underground. Since assuming ownership in June 2015, JCG has mined approximately 2.8 million tons at an average grade of 0.148 oz/st Au containing a total of approximately 416,000 ounces of gold (Table 6.2). The location of the historical (and current) mines is illustrated in Figure 6.1.

Total mill production for the property from the start of operations in 1980 to the end of 2017 is approximately 8.69 million ounces Au from approximately 54.5 million tons of ore at an average head grade of 0.18 oz/st and an average recovery of 88.7% (Table 6.3). In addition to mine production, the mill processed ore from the Barrick Cortez mine during the period 2000 to 2002 and stockpiles from Newmont's Carlin operations during the period 2006 to 2010. Details of this throughput are not available and detailed reconciliation of mine and mill production during these periods is not possible. The difference between mine production and mill throughput during JCG ownership through to 2017 is also attributable to the processing of stockpiles present at the time of acquisition.

| TABLE 6.1<br>MINE PRODUCTION HISTORY<br>JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE | | | | |
|---|---|---|---|---|
| | **Production Period** | **Tons Mined** | **Au (oz/st)** | **Contained Ounces (Au)** |
| Open Pit Deposits | 1981-1990 | 5,798,600 | 0.241 | 1,400,045 |
| Marlboro Canyon | 1991-1994 | 1,657,600 | 0.098 | 162,621 |
| Alchem | 1980-1993 | 1,226,000 | 0.192 | 235,461 |
| L. North Generator Hill | 1980-1993 | 7,636,300 | 0.170 | 1,298,308 |
| U. North Generator Hill | 1986-1993 | 3,979,000 | 0.155 | 616,647 |
| West Generator | 1988-1998 | 2,441,800 | 0.169 | 412,328 |
| Burns Basin and | 1992-1994 | 895,700 | 0.121 | 108,270 |
| *Burns Basin North*[1] | *1997-1999* | | | |
| Mill Creek | 1988-1990 | 387,000 | 0.108 | 41,896 |
| Pattani Springs | 1993-1994 | 410,300 | 0.162 | 66,341 |
| California Mountain | 1996-1999 | 1,906,100 | 0.221 | 420,789 |
| Dash | 1992-1995 | 1,243,700 | 0.126 | 156,317 |
| Winters Creek Pit | 1994-1997 | 477,300 | 0.132 | 63,004 |
| Steer Canyon | 1994-1997 | 1,741,900 | 0.126 | 218,682 |
| **Subtotal – Pit** | **1980-1999** | **29,801,300** | **0.175** | **5,200,709** |
| | | | | |
| **Underground Deposits** | | | | |
| SSX | 1997-2008; 2011; 2012-2017 | 6,618,674 | 0.242 | 1,602,382 |
| Steer | 2004-2006 | 68,174 | 0.233 | 15,879 |
| MCE (formerly Papillion) | 1997-2004 | 258,295 | 0.369 | 95,359 |
| Murray | 1997-2006 | 3,780,795 | 0.330 | 1,248,777 |
| Smith | 1999-2008; Jan. 2010-2017 | 4,612,860 | 0.192 | 884,132 |
| West Generator | 1993-1997 | 460,100 | 0.235 | 108,108 |
| Saval | 2004-2006 | 3,500 | 0.495 | 1,730 |
| Saval 4 | 2014-2015; 2017 | 125,740 | 0.155 | 19,515 |
| Starvation | 2013-2016 | 845,490 | 0.198 | 167,819 |
| **Subtotal – UG** | **1993-2017** | **16,773,628** | **0.247** | **4,143,701** |
| | | | | |
| **Total - All Mines** | **1980-2017** | **46,574,928** | **0.201** | **9,344,410** |

[1]*Burns Basin North (1997-1999). Production figures not included with Burns Basin North* [*Behre Dolbear, 2020*].

| **Table 6.2**<br>**Production by JCG From 2015 to December 2017**<br>**Jerritt Canyon Gold LLC – Jerritt Canyon Gold Mine** | | | |
|---|---|---|---|
| **Mine** | **Tons Mined** | **Au (oz/st)** | **Contained Ounces (Au)** |
| Smith | 1,331,880 | 0.145 | 192,819 |
| SSX | 1,173,973 | 0.141 | 165,250 |
| Starvation | 193,573 | 0.215 | 41,531 |
| Saval 4 | 104,469 | 0.159 | 16,605 |
| | | | |
| **Total** | **2,803,895** | **0.148** | **416,205** |

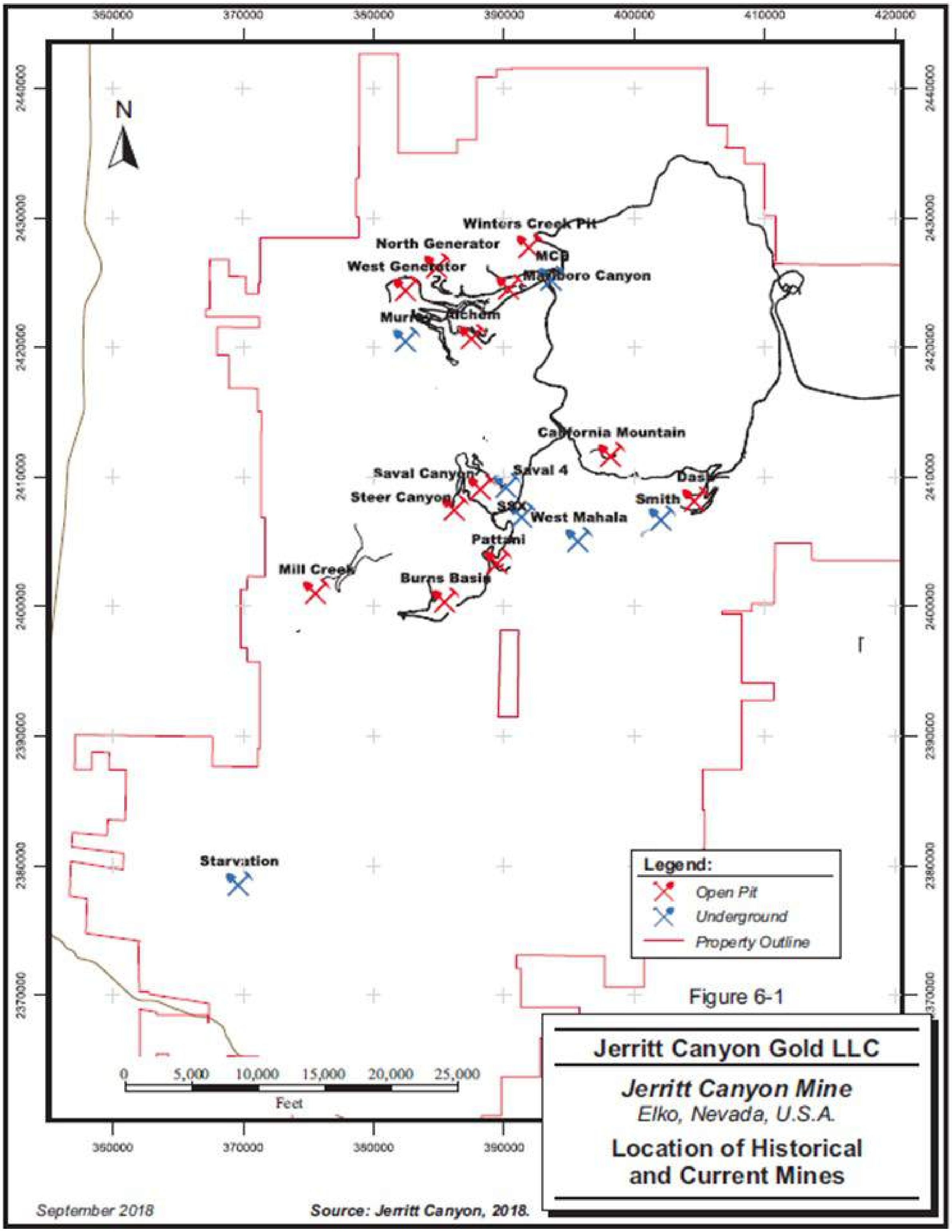


**Figure 6.1. Location of historical and current mines**
**Source: RPA, 2018**

**TABLE 6.3**
**JERRITT CANYON PROCESS PLANT PRODUCTION**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Mine Company Owners | Years | Tons Processed (All Sources) | Daily Tonnage (tpd) | Mill Head Grade (oz/st) | Calculated Contained Ounces | Recovery (%) | Au Production (oz) |
|---|---|---|---|---|---|---|---|
| 70 Freeport/30FMC | 1980 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70 Freeport/30FMC | 1981 | 333,768 | 914 | 0.08 | 26,701 | 87 | 23,000 |
| 70 Freeport/30FMC | 1982 | 1,241,940 | 3,403 | 0.18 | 223,549 | 87 | 196,100 |
| 70 Freeport/30FMC | 1983 | 1,093,200 | 2,995 | 0.277 | 302,816 | 86.5 | 261,900 |
| 70 Freeport/30FMC | 1984 | 1,206,600 | 3,297 | 0.22 | 265,452 | 91.2 | 243,100 |
| 70 Freeport/30MFC | 1985 | 1,284,500 | 3,519 | 0.22 | 282,590 | 89.2 | 255,400 |
| 70 Freeport/30MFC | 1986 | 1,339,200 | 3,669 | 0.227 | 303,998 | 87.4 | 269,600 |
| 70 Freeport/30MFC | 1987 | 1,512,400 | 4,140 | 0.215 | 325,166 | 91.8 | 315,900 |
| 70 Freeport/30MFC | 1988 | 1,574,500 | 4,300 | 0.212 | 333,794 | 91.5 | 310,100 |
| 70 Freeport/30MFC | 1989 | 1,825,800 | 4,983 | 0.178 | 324,992 | 89.8 | 236,700 |
| 70IMC/30FMC | 1990 | 2,513,500 | 6,982 | 0.148 | 371,998 | 88.0 | 329,800 |
| 70IMC/30FMC | 1991 | 2,882,200 | 7,897 | 0.147 | 423,683 | 88.7 | 374,400 |
| 70IMC/30FMC | 1992 | 2,952,120 | 8,088 | 0.132 | 389,680 | 89.3 | 353,300 |
| 70IMC/30FMC | 1993 | 3,024,390 | 8,286 | 0.126 | 381,073 | 89.6 | 340,200 |
| 70IMC/30FMC | 1994 | 3,006,870 | 8,238 | 0.122 | 366,838 | 85.6 | 323,400 |
| 70IMC/30FMC | 1995 | 2,945,915 | 8,071 | 0.129 | 380,023 | 86.1 | 327,900 |
| 70IMC/30Meridian Gold | 1996 | 2,667,593 | 7,308 | 0.13 | 346,787 | 88 | 310,000 |
| 70IMC/30Meridian Gold | 1997 | 1,539,561 | 4,218 | 0.22 | 338,703 | 91 | 320,000 |
| 70 AngloGold/30Meridian Gold | 1998 | 1,484,445 | 4,067 | 0.25 | 371,111 | 91 | 350,000 |
| 70 AngloGold/30Meridian Gold | 1999 | 1,609,374 | 4,409 | 0.25 | 402,344 | 91 | 363,333 |
| 70 AngloGold/30Meridian Gold | 2000 | 1,499,143 | 4,107 | 0.24 | 359,794 | 90 | 316,667 |
| 70 AngloGold/30Meridian Gold | 2001 | 1,469,000 | 4,014 | 0.31 | 455,390 | 89.2 | 403,000 |
| 70 AngloGold/30Meridian Gold | 2002 | 1,467,000 | 4,076 | 0.26 | 381,420 | 87.9 | 339,000 |

**TABLE 6.3**
**JERRITT CANYON PROCESS PLANT PRODUCTION**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Mine Company Owners | Years | Tons Processed (All Sources) | Daily Tonnage (tpd) | Mill Head Grade (oz/st) | Calculated Contained Ounces | Recovery (%) | Au Production (oz) |
|---|---|---|---|---|---|---|---|
| Queenstake Resources | 2003 | 1,496,441 | 4,100 | 0.23 | 336,699 | 88.3 | 302,096 |
| Queenstake Resources | 2004 | 1,305,833 | 3,578 | 0.21 | 274,225 | 86.7 | 243,333 |
| Queenstake Resources | 2005 | 1,106,937 | 3,033 | 0.22 | 243,526 | 86.6 | 204,091 |
| Queenstake Resources | 2006 | 973,593 | 2,667 | 0.21 | 204,455 | 86.2 | 169,851 |
| Yukon-Nevada Gold Corp. | 2007 | 968,130 | 2,652 | 0.206 | 199,435 | 88.2 | 175,646 |
| Yukon-Nevada Gold Corp. | 2008 | 338,350 | 2,128 | 0.16 | 54,136 | 87.3 | 44,732 |
| Yukon-Nevada Gold Corp. | 2009 | 0 | - | - | - | 86.3 | 9,770 |
| Yukon-Nevada Gold Corp. | 2010 | 599,555 | 1,862 | 0.123 | 73,745 | 88.2 | 65,104 |
| Yukon-Nevada Gold Corp. | 2011 | 628,418 | 1,853 | 0.142 | 89,235 | 85.8 | 67,748 |
| YNG/Veris Gold Corp. | 2012 | 978,262 | 3,929 | 0.130 | 127,174 | 82.7 | 105,626 |
| Veris Gold Corp. | 2013 | 1,084,131 | 3,288 | 0.154 | 166,956 | 85.5 | 139,556 |
| Veris Gold Corp. | 2014 | 1,106,524 | 3,040 | 0.166 | 183,683 | 87.8 | 160,451 |
| Veris Gold Corp. | 2015 | 573,810 | 3,284 | 0.172 | 98,742 | 84.7 | 83,497 |
| Jerritt Canyon Gold, LLC | 2015 | 584,775 | 3,074 | 0.174 | 101,307 | 86.3 | 89,094 |
| Jerritt Canyon Gold, LLC | 2016 | 1,191,674 | 3,765 | 0.144 | 171,333 | 85.4 | 140,989 |
| Jerritt Canyon Gold, LLC | 2017 | 1,143,530 | 3,585 | 0.135 | 154,187 | 83.9 | 129,335 |
| | | | | | | | |
| **Total** | **1980-2017** | **54,552,982** | **4,698** | **0.180** | **9,836,743** | **88.7** | **8,693,719** |
| **Total Pre-JCG** | **1980-2015** | **51,633,003** | **4,787** | **0.182** | **9,409,916** | **88.6** | **8,334,301** |
| **Total JCG** | **2015-2017** | **2,919,979** | **3,535** | **0.146** | **426,827** | **84.2** | **359,418** |

## 6.3 EXPLORATION HISTORY

*FMC originally staked claims in search for antimony and undertook a major soil sampling program. Recognition of the similarities, particularly jasperoid development, with the Carlin Mine led to re-assaying 1 of every 5 soil samples for gold. The presence of numerous anomalous gold values led to re-assaying the remaining soil samples for gold. Numerous contourable gold anomalies were outlined. Drilling of one of the strongest anomalies led to the discovery of the Alchem deposit* [*Behre Dolbear, 2020*].

The early, major discoveries in the Jerritt Canyon district were made by following dominantly northeast and northwest trending structures, within and bounding the Lower Plate windows found in the area in close proximity to gold-in-soil anomalies. *Discovery of the Marlboro Canyon deposit was based upon gold-in-soil anomalies and follow-up of gold-in-road cut anomalies* [*Behre Dolbear, 2020*]. Exploration activities completed on the property by the various owners since the original FMC-Freeport joint venture have included prospecting, geological mapping, various types of geophysical surveys, and geochemistry *and many feet of surface RC and diamond drilling* [*Behre Dolbear, 2020*].

## 6.4 GEOLOGIC STUDIES HISTORY

As expected for a property with more than 35 years of production, geological maps, sections, and sketches pertaining to the property are voluminous, and are located in the data archives at the Jerritt Canyon mine site. In 1984, Freeport established a map system where individual map sheets, referred to as plates, at a scale 1":500' and extending 14,000 ft in the east-west direction and 10,000 ft in the north-south direction were formalized and covered the entire property. From this point onwards, all geological mapping was to be recorded using the plate maps reference system. In 1984, the "Jerritt Gold Study" was undertaken as collaboration between Freeport and the United States Geological Survey (USGS). Digital compilation of historical geological mapping completed by the Nevada Bureau of Mines and Geology (NBM) was followed by new geological mapping completed by NBM during 2005–2007. This resulted in the publication of a comprehensive geological map for the property (NBM Open File 07-3) (Figure 6.2).

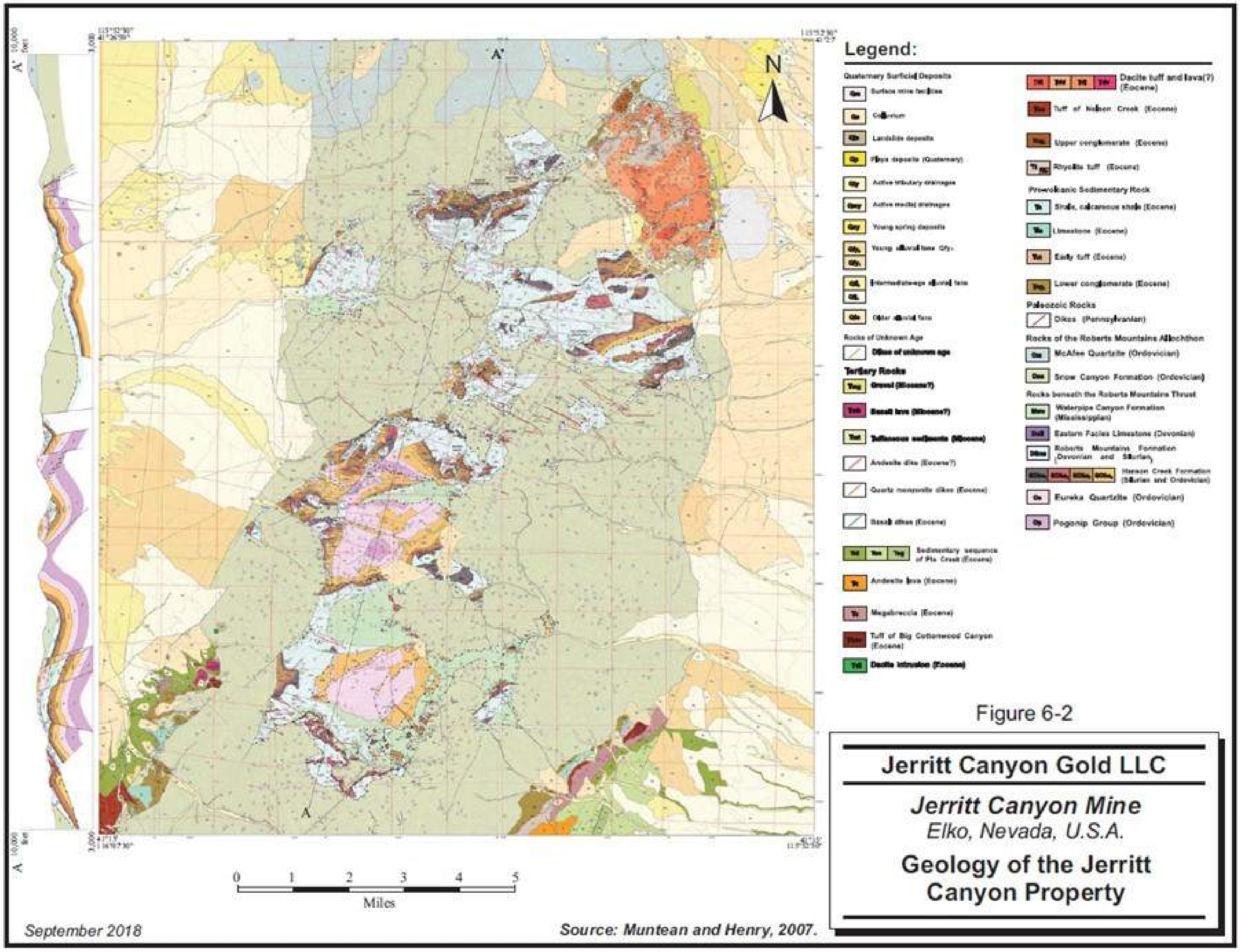


**Figure 6.2. Geology of the Jerritt Canyon Property**
**Source: RPA, 2018**

## 6.5 GEOPHYSICAL STUDIES HISTORY

Considerable geophysical work has been completed throughout the Jerritt Canyon property since the early 1970s by numerous contract geophysical companies. This includes numerous ground surveys utilizing magnetic, electric, and electromagnetic (EM) methods, gravity surveys, and airborne magnetic, radiometric, and EM surveys. During 2015, JCG contracted consulting geophysicist R.B. Ellis to compile and interpret historical geophysical survey data. The description of the historical survey and some comment on results below are taken from the report by Ellis (2016). Interpretation and recommendations made by Ellis are described and discussed in Section 9.0.

### 6.5.1 Early Ground Geophysical Surveys (1972-1992)

Early ground geophysical surveys were focused on local surveys to understand the physical properties of various lithologies or testing methods to trace intrusive dikes and structure. The focus on characterizing the lithologies was to try to separate Upper from Lower plate rocks. Complex resistivity measurements were made in-situ on nine lines at Mahala, East Mahala, and the Waterpipe II area by Zonge Engineering. Complex resistivity is an induced polarization (IP) method where data is collected at multiple frequencies to determine whether different polarization species can be differentiated.

IP and resistivity survey results acquired by Zonge Engineering at Saval, Prego, and Pattani Creek confirmed an IP signature associated with mineralization. Similarly, a summary of various geophysical surveys (seismic, Crone electromagnetics (CEM) and very low frequency (VLF or RADEM) at Jerritt Canyon by Smith (1972 and 1987) alludes to the value of IP and complex resistivity to separate various Jerritt Canyon lithologies. These results support the potential value of conventional IP surveys on the property consistent with the Starvation Canyon result in 2011 (TITAN survey).

Ground magnetics and VLF test lines acquired in the Saval/Prego and Burns Basin area have been described by Smith (1990).

### 6.5.2 Gradient Array and Self Potential

Gradient array and self-potential (SP) data were collected by Dick Fox between 1994 and 1998. An index map of this survey is shown in Figure 6.3. The data was critically reviewed by the Jerritt Canyon exploration team in 1994 before and after the terrain corrections and no consistent correlation with mineralization was found. Use of the dataset for targeting was discouraging and considered unlikely to be an important exploration tool.

### 6.5.3 ESCAN

ESCAN data was acquired in a grid south of the SSX deposit and southeast of Burns Basin (Figure 6.4) in 1996 by Premier Geophysics Inc. ESCAN is a trade name for a DC resistivity survey utilizing the pole-pole array and a mesh of receiver electrodes (300 ft and 600 ft) where current is transmitted inside and outside the grid to produce a 3D set of data, which is then inverted. The objective of the survey was to "determine the presence of geo-electric signatures related directly or indirectly to ore mineralization." IP data was apparently collected but never processed (Shore, 1999).

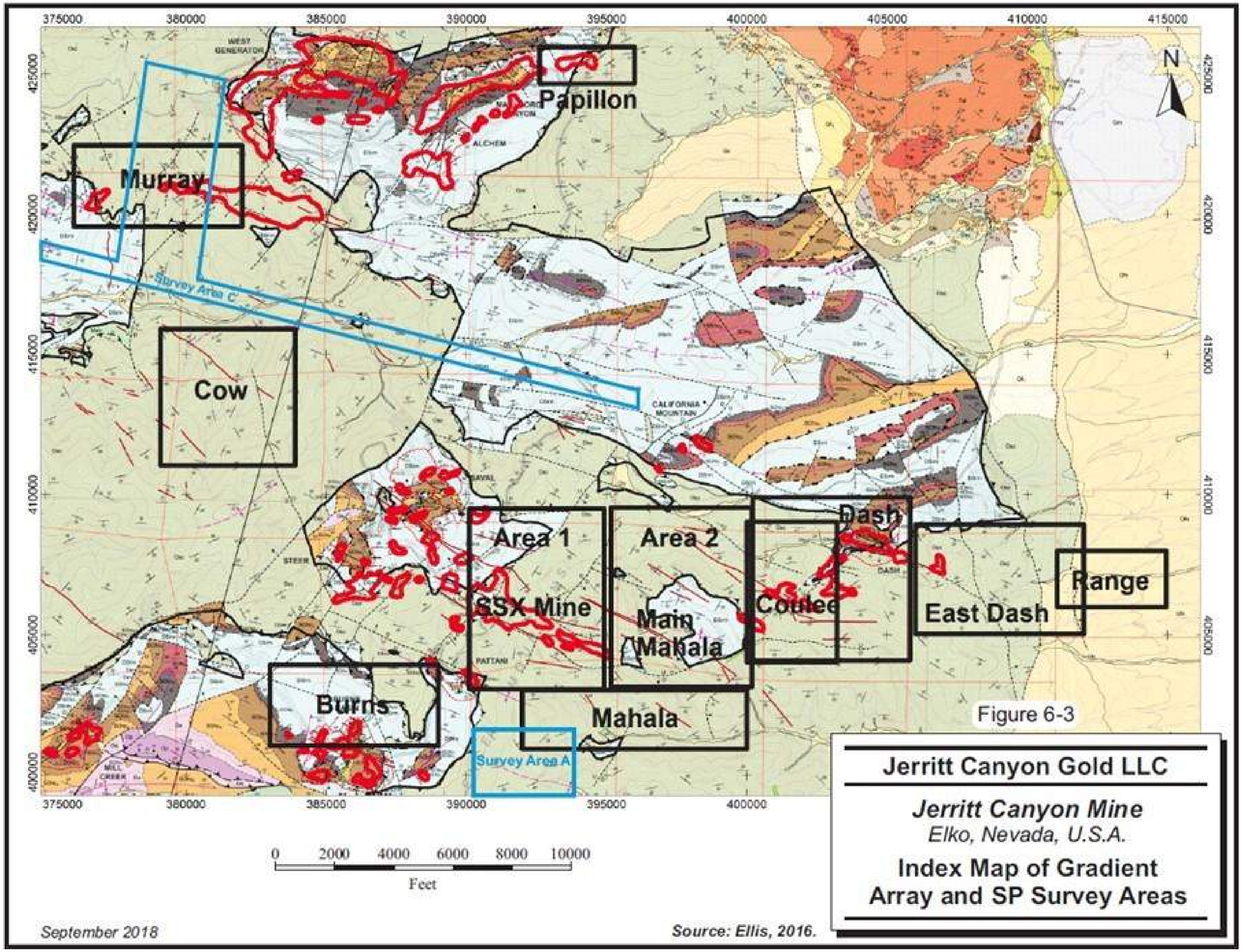


**Figure 6.3. Location map for gradient array and SP survey areas**
**Source: RPA, 2018**

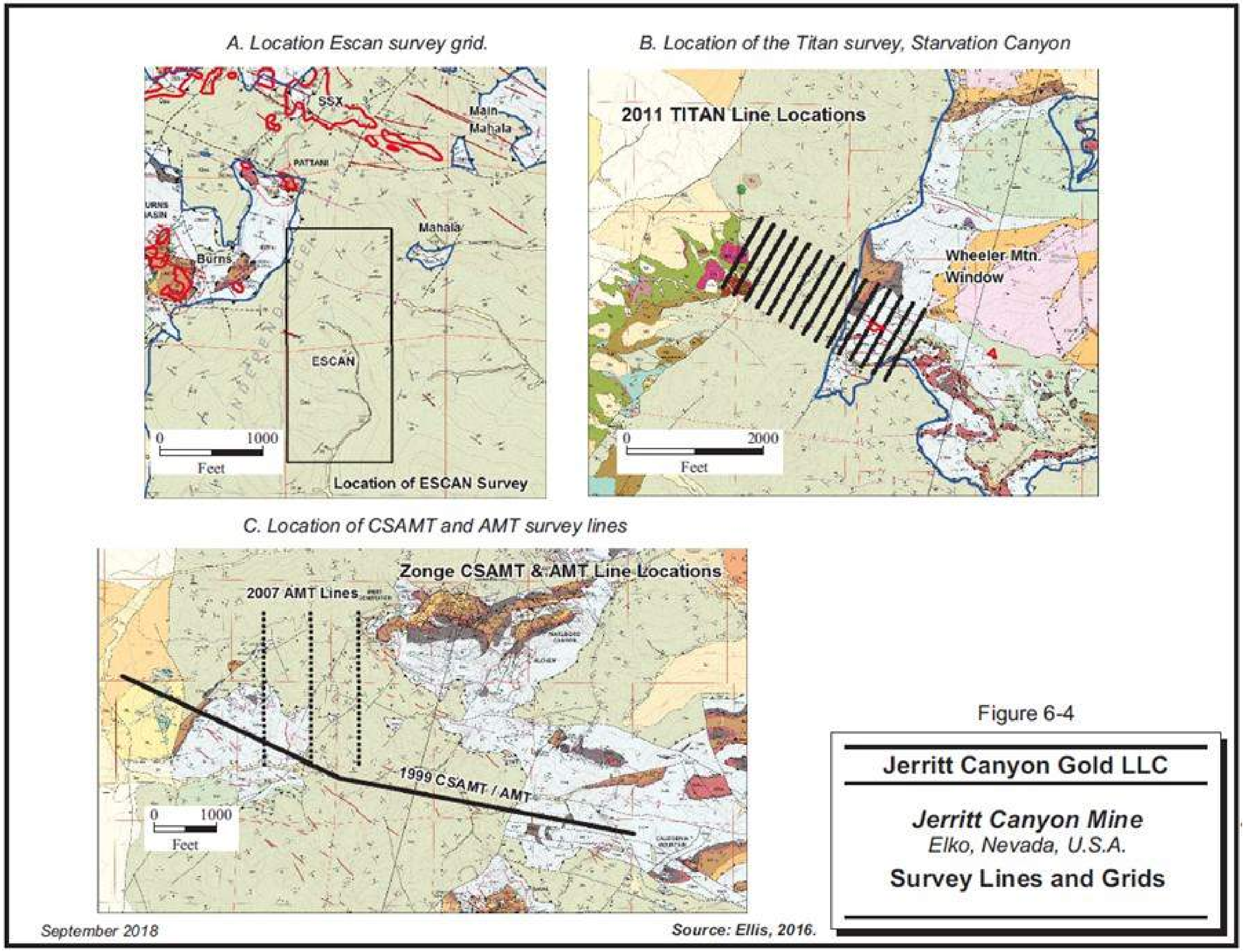


**Figure 6.4. Survey lines and grids**
**Source: RPA, 2018**

### 6.5.4 Audio-frequency Magnetotellurics

Audio-frequency magnetotellurics (AMT) is a DC resistivity sounding method that relies on natural EM fields as an energy source.

The surveys were completed by Zonge Geoscience in 1999 and 2007 in order to estimate the depth to the presumed higher resistivity Hanson Creek Formation. The locations of survey lines are shown in Figure 6.4 and images of the model section have been re-created. The 1999 survey was the Zonge Geoscience first attempt at collecting AMT data with their GDP-32 receiver. It was common to collect controlled source audio-frequency magnetotelluric (CSAMT) data in the high frequency band to improve the signal to noise ratio of these soundings. This was not required for the 2007 lines. Comparison of 2D inversion lines to drill-controlled surfaces of the Saval discontinuity shows no consistent change from the low resistivity Roberts Mountain to the high resistivity Hanson Creek Formation.

### 6.5.5 Gravity Surveys

Gravity data have been collected at Jerritt Canyon since 1999, with the latest survey completed in 2007. Data have been either collected or purchased as 16 separate survey areas. The objective of the gravity data was to identify the dense carbonate lithologies and identify low density decalcification commonly associated with mineralization. Processing and reporting for each survey were cumulative so the 2007 report by Ellis (Ellis, 2007) is the best record of the datasets. It contains details of the data reduction and images as well as some comments on the interpretation of the data. All images and products were re-created in the Jerritt Canyon grid. The 3D inversion modelling of the complete Bouguer gravity anomaly for the Jerritt Canyon area is shown in Figure 6.5 along with the station locations. High precision survey control for the gravity base station elevations was established on 21 points on the property as described by K. E. Schaaf (2000).

The tilt derivative (Figure 6.5) shown adjacent to the complete Bouguer gravity anomaly is a filter operator that enhances the higher frequency signatures in the data and efficiently identifies the horizontal location of the source. A northerly trend of density lows shows correlation with deposit areas and has been attributed to areas of decalcification extending to depth.

### 6.5.6 Airborne Surveys

Three aeromagnetic surveys have been flown over the Jerritt Canyon property.

Applied Geophysics Inc. flew the earliest magnetic survey in 1976 for Freeport. The survey was flown on 0.25 mile spaced lines in a north-south direction using a helicopter platform at an average terrain clearance of 500 ft.

A 1988 Aerodat Ltd (Aerodat) survey consisted of only regional test lines. The location of three extensive surveys is shown in Figure 6.6. The focus of the aeromagnetic surveys was to map structure and identify intrusive rocks that appear spatially coincident with mineralization at Jerritt Canyon.

Newmont Exploration Inc. flew a 0.25 mile (400 meter) spaced magnetic survey along east-west lines in 1993. This was likely a helicopter survey with terrain clearance in the range of 50 meters to 400 meters above topography.

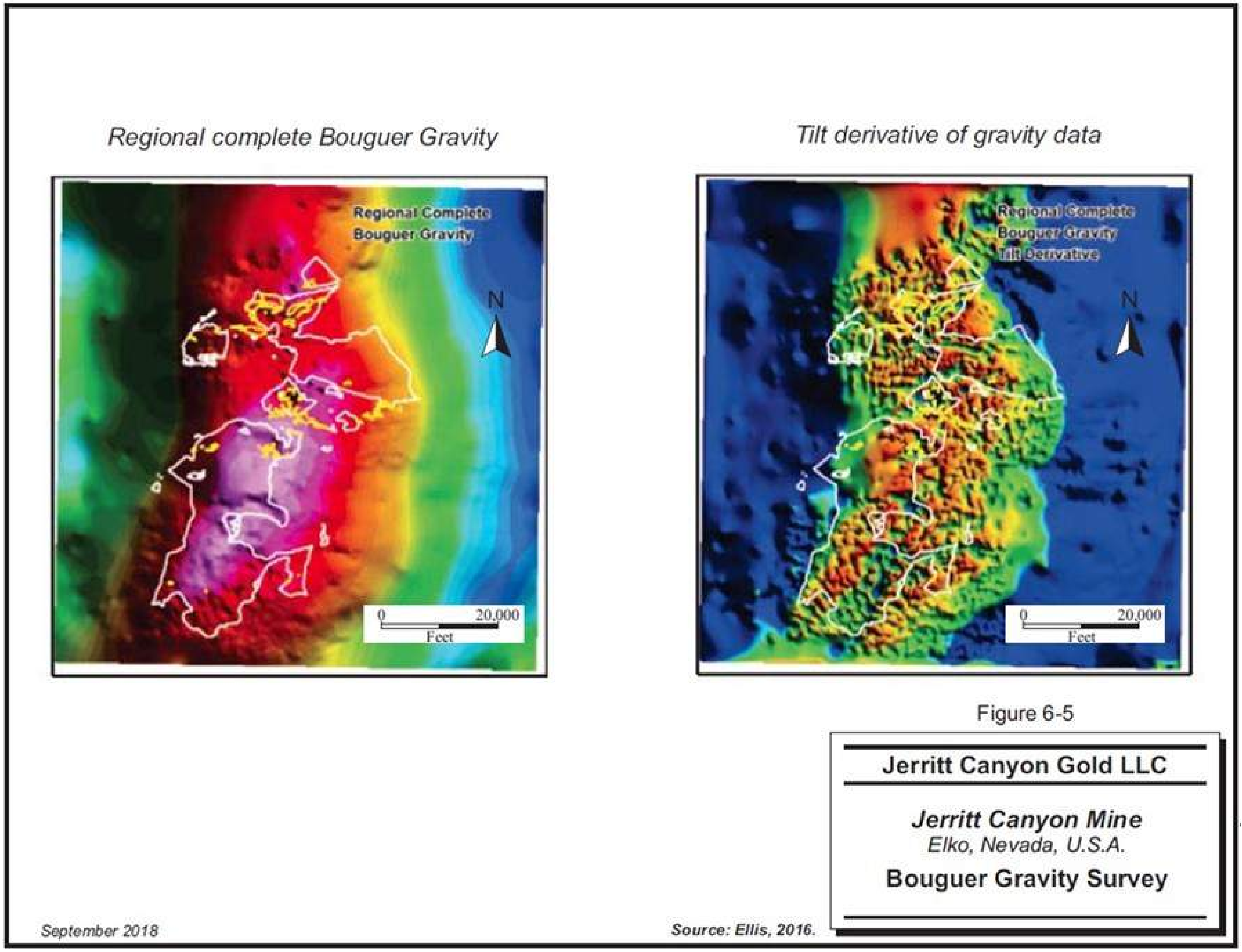


**Figure 6.5. Bouguer gravity survey**
**Source: RPA, 2018**

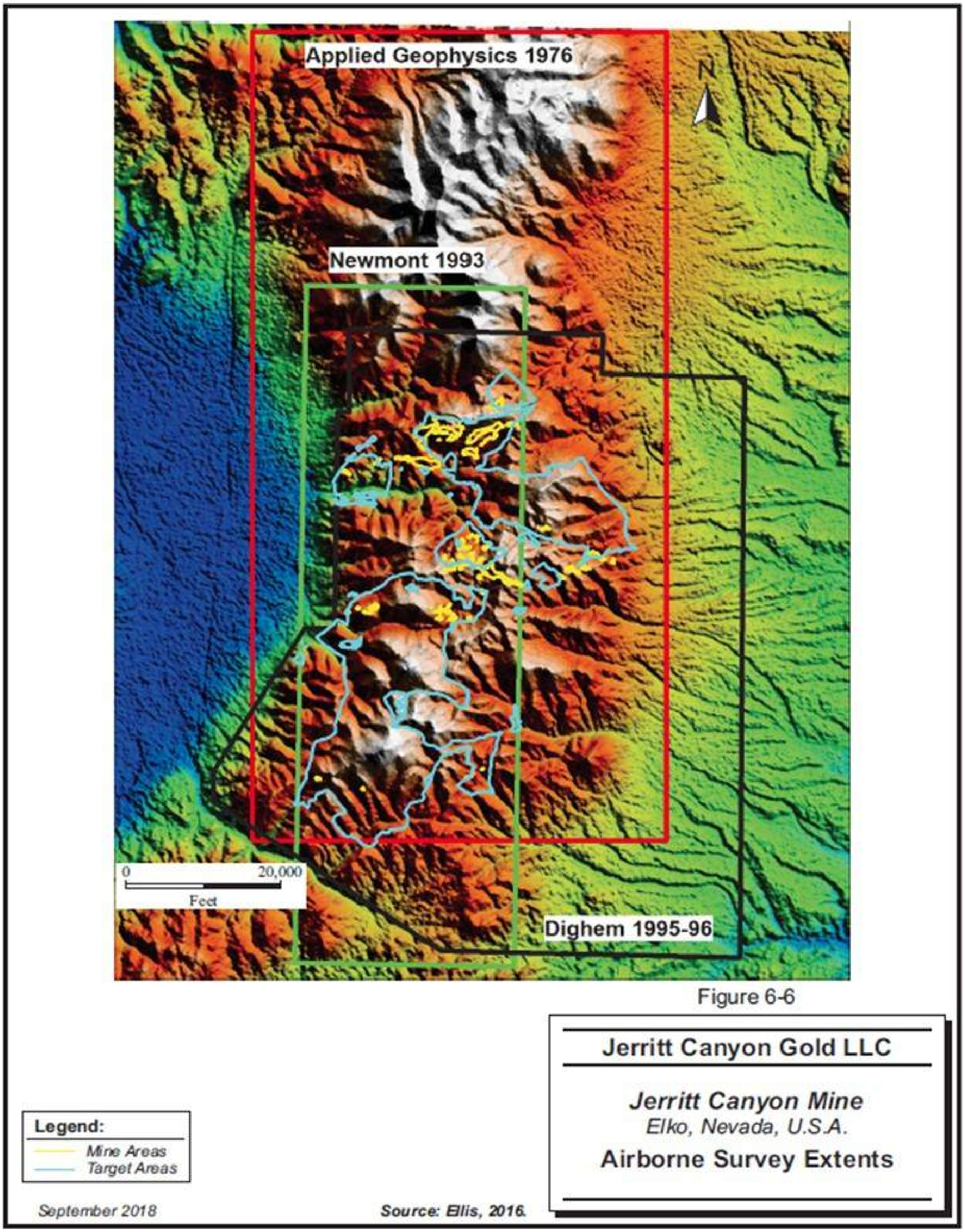


**Figure 6.6. Airborne survey extents**
**Source: RPA, 2018**

### 6.5.7 Geochemistry History

Geochemical surveys completed on the property include soil and stream sediment sampling and outcrop, trench, and road cut bedrock sampling. In addition, exploration/research oriented geochemical studies have been completed on the Saval discontinuity, on the mafic dikes *and on composited drill pulps divided by stratigraphy above several of the underground deposits* [*Behre Dolbear, 2020*].

The soil geochemical database for Jerritt Canyon consists of 65,840 samples collected over a span of over 30 years. Most samples (56,761) were collected by Independence Mining Company (Independence Mining) staff and contractors (and predecessors). Prior to 1997, Independence Mining acquired data for 1,399 samples from another company. Queenstake compiled the soil data in 1999 and subsequently collected 7,283 samples from the northern and southern limits of the Jerritt Canyon land position and acquired data for an additional 407 samples to the north from Vista Gold. A total of 18,691 rock samples have been taken from surface exposures on the property. This includes outcrop, road cuts, and trenches. Chip sampling of road cuts and exposures was completed over selected target areas. A total of 145 chip sampling traverses have been completed (Table 6.4).

**TABLE 6.4**
**SUMMARY OF CHIP SAMPLING ON JERRITT CANYON PROPERTY**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Project (prefix) | Chip Traverses |
|---|---|
| Bidart (ZBI) | 4 |
| Burns Basin (ZBB) | 10 |
| California Mountain (ZCM) | 5 |
| East Mahala (ZEM) | 17 |
| Lost Mine (ZLM) | 23 |
| Mahala (ZMAH) | 21 |
| Pie Creek (ZPC) | 2 |
| Sheep (ZSH) | 21 |
| SSX/Spaghetti (ZSP) | 1 |
| Stump (ZSM) | 14 |
| Upper Stump Basin (ZUSB) | 1 |
| Winters Creek (ZWC) | 8 |
| Wright Window (ZWW) | 12 |

## 6.6 DRILLING HISTORY

Numerous drilling campaigns have been executed at Jerritt Canyon since its discovery in the 1970s. Historical surface drilling and underground drilling are described below.

### 6.6.1 Surface Drilling

Early surface exploration drilling programs typically consisted of vertical reverse circulation (RC) drilling over target areas at approximately 200 ft centers. The spacing was then reduced to approximately 140 ft and further to 100 ft or less to delineate open pit resources. Surface core drilling typically made up approximately 5% to 10% of the total drilling.

The surface drilling database contains 15,058 holes for a total of 8,591,902 ft drilled between the start of exploration until December 2011. There was no surface drilling completed between 2011 and the acquisition of the property by JCG in 2015. Surface drilling completed by JCG is described in Section 10.0 of this report.

In the 1970s and 1980s, open-pit targets were being pursued with most of the surface drill holes drilled to a maximum depth of 600 ft below the surface and stopped regardless of the geological rock unit or alteration that was encountered. A depth of 600 ft was assumed to be the lower limit of economically viable open pit mining.

### 6.6.2 Underground Drilling

In the underground mines up to December 31, 2011, definition drilling included core drilling on 50 ft centers from underground stations, using NQ-sized (1.875 in. diameter) core. In mid-2011, drilling with HQ core (2.5 in. diameter) was used locally. Underground RC drilling (Cubex) is used for resource confirmation and was generally completed on 20 ft to 40 ft centers. Underground RC drill holes were generally less than 150 ft in length but occasionally up to 300 ft. Up to August 2008, underground production sample drilling consisted of Cubex and rotary percussion drilling. In 2010 and 2011, a 5200 DRC Cubex (RC) drill, owned and operated by SMD, was used primarily for underground production sample drilling at the Smith Mine. These production drill holes were generally short, less than 60 ft, and were drilled on close centers of 10 ft to 20 ft. Most drill holes, other than the production holes, have been measured for downhole deviation. A used Cubex drill rig was purchased in 2011 by Queenstake to conduct underground production drilling at SSX.

The JCG database contains a total of 42,253 historical underground holes from the period pre-dating June 23, 2015, the effective date of the acquisition of the property by JCG (Table 6.5).

**TABLE 6.5**
**HISTORICAL UNDERGROUND DRILLING BY DEPOSIT**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Deposit | No. Holes | Footage |
|---|---|---|
| Murray | 7,677 | 394,198 |
| Saval | 113 | 18,695 |
| Smith | 11,281 | 1,231,216 |
| Starvation | 562 | 91,347 |
| SSX | 22,620 | 2,139,889 |
| | | |
| **Total** | **42,253** | **3,875,345** |

## 6.7 HISTORICAL RESOURCE ESTIMATES

Historical Mineral Resource estimates are summarized in Table 6.6 and a summary of the historical Mineral Reserve estimates are presented in Table 6.7. The 2003 and 2005 estimates were completed and reported by Pincock, Allen and Holt (PA, 2003, 2004, 2005), SRK Consulting (US), Inc. (SRK, 2006, 2007, 2010), and Veris Gold (2012, 2013).

RPA notes that all above estimates are historical in nature and should not be relied upon. All resource and reserve estimates are superseded by the Mineral Resource estimate contained in Section 14.0 of this report.

**TABLE 6.6**
**HISTORICAL MINERAL RESOURCE ESTIMATES**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Year | Measured | | | Indicated | | | Measured + Indicted | | | Inferred | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Tons (000) | Au (oz/st) | Au (koz) | Tons (000) | Au (oz/st) | Au (koz) | Tons (000) | Au (oz/st) | Au (koz) | Tons (000) | Au (oz/st) | Au (koz) |
| 2003 | 2,219 | 0.306 | 680 | 7,278 | 0.222 | 1,616 | 9,497 | 0.242 | 2,295 | 5,415 | 0.191 | 1,034 |
| 2004 | 2,263 | 0.287 | 650 | 7,725 | 0.228 | 1,760 | 9,988 | 0.241 | 2,410 | 4,059 | 0.219 | 888 |
| 2005 | 3,095 | 0.281 | 870 | 5,717 | 0.212 | 1,209 | 8,812 | 0.236 | 2,079 | 2,647 | 0.229 | 606 |
| 2006 | 2,574 | 0.272 | 700 | 5,629 | 0.214 | 1,207 | 8,203 | 0.232 | 1,907 | 2,415 | 0.226 | 545 |
| 2007 | 2,626 | 0.269 | 706 | 5,571 | 0.225 | 1,255 | 8,197 | 0.239 | 1,961 | 2,320 | 0.224 | 520 |
| 2010 | 4,550 | 0.236 | 1,073 | 6,460 | 0.204 | 1,317 | 11,009 | 0.217 | 2,390 | 3,873 | 0.194 | 751 |
| 2011 | 4,907 | 0.21 | 1,031 | 7,383 | 0.175 | 1,289 | 12,290 | 0.189 | 2,319 | 4,116 | 0.182 | 748 |
| 2012 | 4,511 | 0.198 | 892 | 7,932 | 0.171 | 1,359 | 12,443 | 0.181 | 2,251 | 3,845 | 0.17 | 653 |

**Note:** All historic data from published NI 43-101 Reports.

**TABLE 6.7**
**HISTORICAL MINERAL RESERVES ESTIMATES**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Year (Year End) | Proven | | | Probable | | | Proven + Probable | | |
|---|---|---|---|---|---|---|---|---|---|
| | Tons (000) | Au (oz/st) | Au (koz) | Tons (000) | Au (oz/st) | Au (koz) | Tons (000) | Au (oz/st) | Au (koz) |
| 2003 | 932.8 | 0.299 | 279 | 2,132.40 | 0.254 | 541.1 | 3,065.30 | 0.268 | 820.1 |
| 2004 | 760.5 | 0.271 | 206.3 | 2,750.10 | 0.243 | 669.1 | 3,510.60 | 0.249 | 875.4 |
| 2005 | 1,211.30 | 0.257 | 311.7 | 2,511.70 | 0.225 | 566.2 | 3,723.00 | 0.236 | 877.9 |
| 2006 | 636.1 | 0.273 | 173.8 | 1,348.80 | 0.231 | 312 | 1,984.90 | 0.245 | 485.7 |
| 2007 | 653.4 | 0.229 | 149.9 | 2,501.80 | 0.227 | 567.4 | 3,155.20 | 0.227 | 717.3 |
| 2010 | 1,406.10 | 0.193 | 270.9 | 2,959.70 | 0.151 | 446 | 4,365.80 | 0.164 | 717 |
| 2011 | 1,980.20 | 0.189 | 374.8 | 4,076.70 | 0.168 | 686 | 6,056.90 | 0.175 | 1,060.80 |
| 2012 | 2,628.00 | 0.164 | 431.1 | 4,659.00 | 0.153 | 713.9 | 7,287.00 | 0.157 | 1,145.00 |

**Note:** All historic data from published NI 43-101 Reports.

# 7.0 GEOLOGICAL SETTING AND MINERALIZATION

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

## 7.1 REGIONAL AND LOCAL GEOLOGY

The Jerritt Canyon Gold District is located in the Great Basin, north and northeast of the Carlin Trend of gold deposits (Figure 7.1). The Great Basin records a protracted geological history from Proterozoic through to recent. Continental rifting of the Archean-Proterozoic craton resulted in the deposition of rift facies Neoproterozoic and Cambrian clastic sedimentary rocks and the establishment of a passive continental margin on the western edge of North America. A miogeoclinal sequence developed on the passive margin with deposition of Ordovician to Devonian shallow carbonates and shales in the shelf-slope environment (*e.g.*, Hanson Creek, Roberts Mountain, Popovich, and Rodeo Creek Formations) and Cambrian to Ordovician deep siliciclastic sedimentary rocks on the slope- floor environment to the west (*e.g.*, Vinini and Snow Canyon Formations). During the Late Devonian to Early Mississippian Antler Orogeny, the deep water siliciclastic sedimentary and minor basaltic rocks were thrust over the shallow shelf slope shallow carbonates and shales.

The regional thrust fault is referred to as the Roberts Mountain Thrust. A foredeep basin formed to the east in front of the thrust belt resulting in deposition of Early Mississippian syn-orogenic and Pennsylvanian post-orogenic sedimentary rocks including conglomerate, siltstone, and limestone (Antler Overlap Sequence). Northeast Nevada was further subject to compressional tectonism in the Pennsylvanian through to the Permian Humboldt and the Early Triassic Sonoma Orogenies. East dipping subduction was established along the western margin of North America by the Middle Triassic. The main magmatic arc attributed to this subduction is the Sierra Nevada batholith located to the west of northeast Nevada. Related magmatism in northern Nevada includes Middle Jurassic back arc volcanic-plutonic complexes. Early Cretaceous S-type granites to Late Cretaceous I-type granites emplaced in northern Nevada are related to progressive crustal thickening during the Cretaceous Sevier and Laramide Orogenies. Numerous regional extensional basins started to develop in northeastern Nevada and western Utah in the Middle Eocene and a distinctive high K calc-alkaline magmatism was emplaced at approximately 42 Ma. Eocene extension is interpreted to have been largely accommodated by the reactivation of earlier structures. Middle Eocene magmatic rocks include the deposition of volcaniclastic rocks, ash-flow tuffs, and flows in newly formed basins, subsequent basin fill volcanic rocks, small flow-dome complexes, and high-level intrusions and dikes. Regionally, Eocene dikes ranges in composition from porphyritic dacite, basalt-andesite, and rhyolite.

Carlin-type gold mineralization is preferentially hosted by Ordovician to Devonian shallow shelf-slope carbonate shale sequence. These rocks are commonly referred to as “Lower Plate” rocks owing to their position in the footwall of the regional Roberts Mountain Thrust. The deep water siliciclastic dominant rocks forming the hanging wall of the Roberts Mountain Thrust are commonly referred to as “Upper Plate” rocks. This sequence of less reactive and less permeable upper plate rocks, acting as an aquitard over variable to highly permeable lower plate rocks, is regarded as a primary control on the deposition of Carlin-type gold mineralization. The Carlin-type gold deposits in northeastern Nevada formed in the Middle to Late Eocene during the period 42 to 36 Ma. Deposition is regarded as part of a magmatic-hydrothermal event related to regional extension utilizing reactivated, variably oriented pre-Eocene structures.

Figure 7.2 shows the general stratigraphic section of the Jerritt Canyon Gold District and Figure 7.3 shows the local geology.

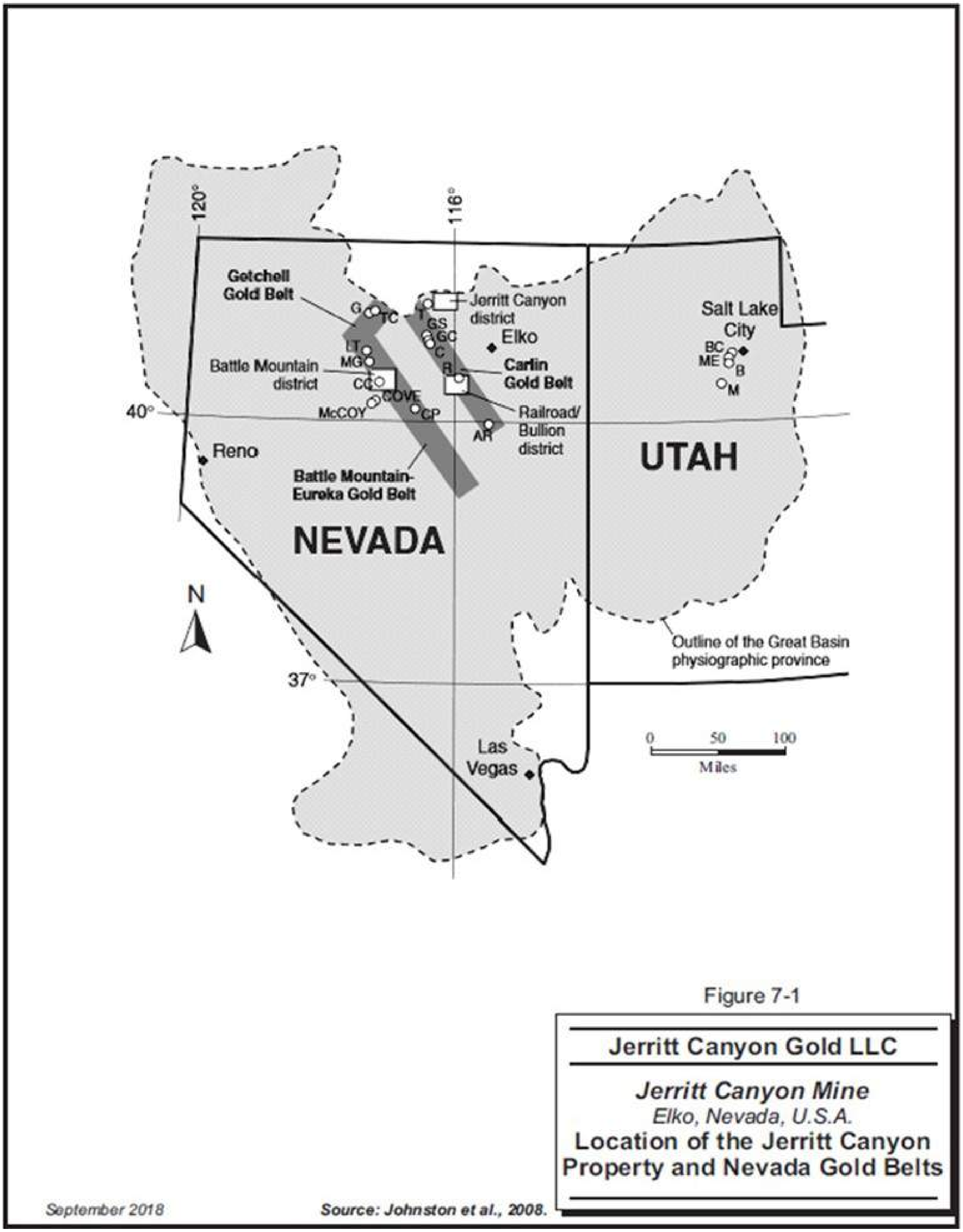


**Figure 7.1. Location of the Jerritt Canyon Property and Nevada Gold Belts**
**Source: RPA, 2018**

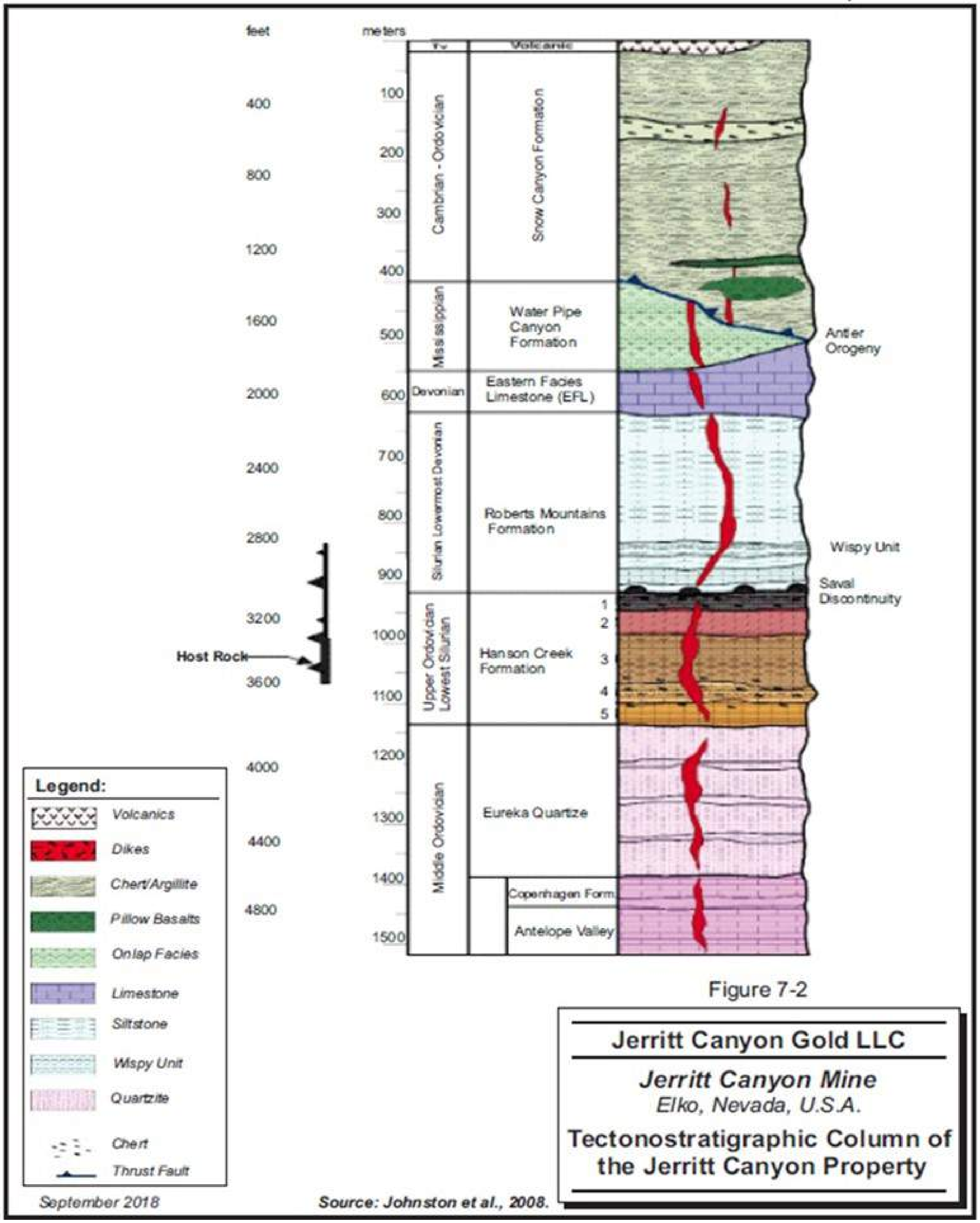


**Figure 7.2. Tectonostratigraphic column of the Jerritt Canyon Property**
**Source: RPA, 2018**

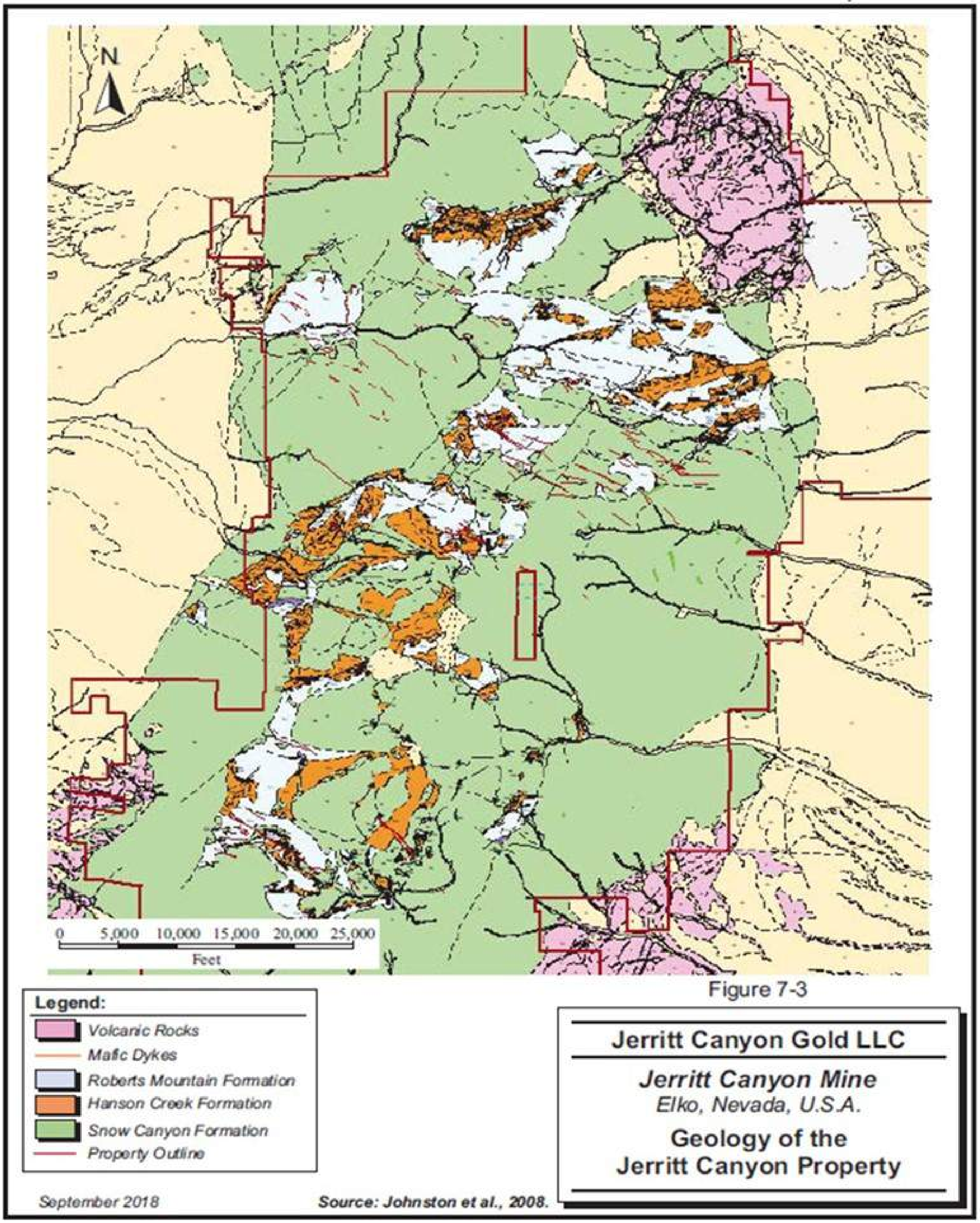


**Figure 7.3. Geology of the Jerritt Canyon Property**
**Source: RPA, 2018**

## 7.2 MINERALIZATION

The occurrence and distribution of gold mineralization at Jerritt Canyon is controlled both by lithology and structure. Gold mineralization at Jerritt Canyon is hosted by Hanson Creek Formation units I to III and the lower part of the Roberts Mountains Formation. *Mafic dikes are also a preferential host at some deposits* [*Behre Dolbear, 2020*]. The Saval discontinuity, being the contact between the Hanson Creek and the Roberts Mountain Formations, is interpreted as a primary control on gold mineralization at Jerritt Canyon. Gold mineralization is hosted by or spatially associated with high angle west-northwest and north-northeast trending structures. Much of the more continuous gold mineralization occurs within the favorable stratigraphic intervals along the limbs or hinge zones of large anticlinal folds, and at the intersection of the two sets of high angle structures. The mineralized zones form along well-defined structural and mineralization trends as stratigraphically controlled tabular pods that are locally stacked upon one another resulting from the presence of more than one favorable stratigraphic unit and/or local thrust and/or high-angled fault intersection controls. The deposits are Carlin-type, sediment-hosted gold mineralization within carbonaceous sediments. The gold occurs as very fine-grained micron-sized particles as grain boundaries or inclusions in pyrite, and as free grains in carbonaceous-rich and fine-grained, calcareous, clastic sedimentary rocks.

Alteration in the Jerritt Canyon district includes silicification, dolomitization, remobilization, and reconstitution of organic carbon, decalcification, argillization, and pyritization (typically containing elevated arsenic). The rocks also exhibit hypogene and supergene oxidation and bleaching. The most important alteration types relative to gold deposition are silicification, remobilization, and reconstitution of organic carbon, pyritization, and decalcification.

The location of past and currently producing open pit and underground mines on the property is illustrated in Figure 7.4. Description of mineralization from currently producing mines on the property follows.

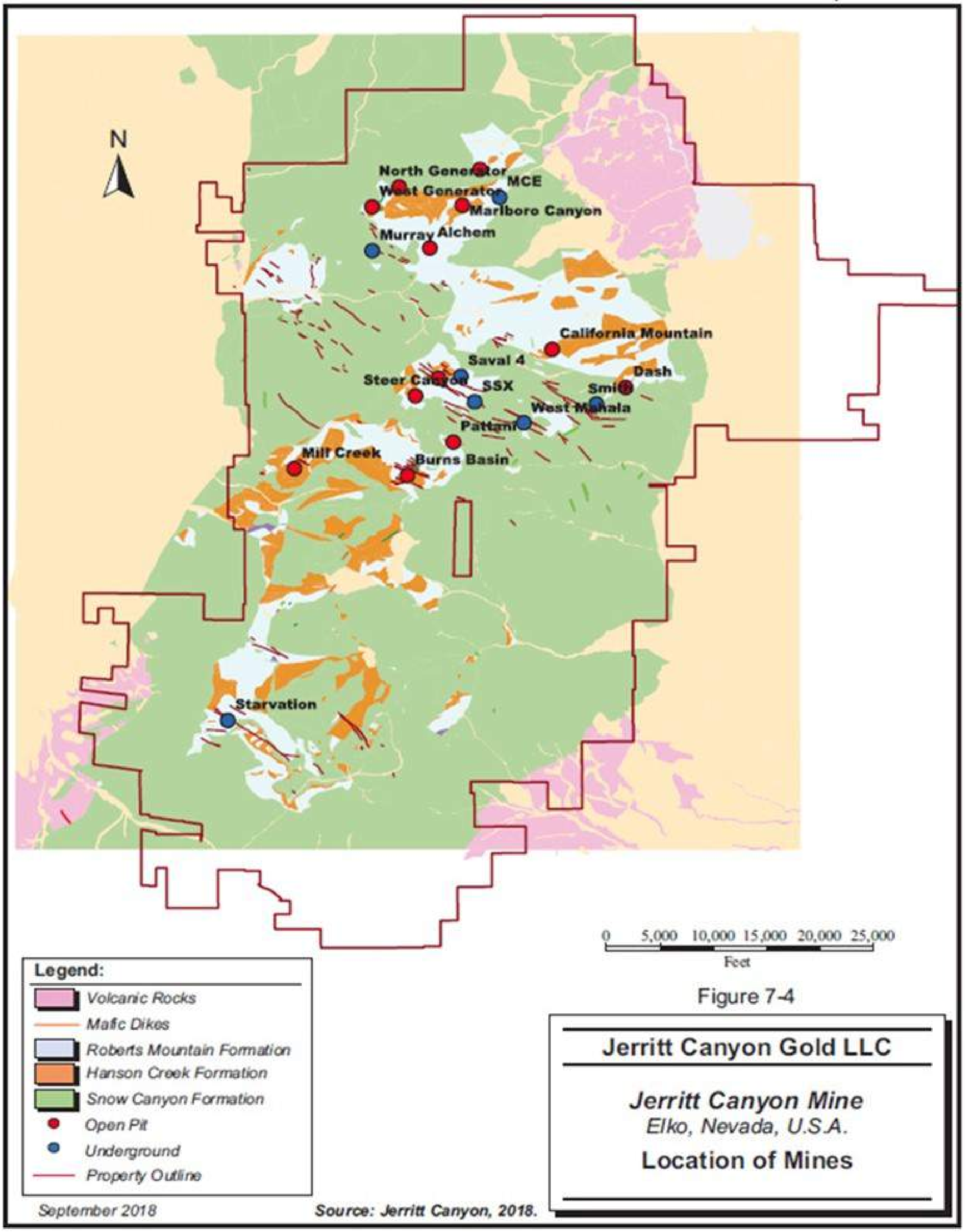


**Figure 7.4. Location of Mines**
**Source: RPA, 2018**

### 7.2.1 SSX

The drift connecting the SSX and Steer mines was completed in the latter half of 2005 and the mines have been operated as a single unit referred to in this report as the SSX mine.

The SSX deposit was discovered in the early 1990s following the northeast structural trends between the Burns Basin and California Mountain deposits and the west-northwest trends from the Steer/Saval deposits. Mining at SSX started in 1997.

The resource wireframes show a distinct northwest trend in the eastern part of SSX area but a generally more east-west trend in the Steer Domain (Figure 7-5). The mineralized zones are more continuous in the SSX area ranging from 200 ft to 2,000 ft in length along the northwest strike and 50 ft to 200 ft in width. The thickness of the mineralization at SSX ranges from 10 ft to 100 ft. The mineralization at Steer is less continuous ranging from 50 ft to 500 ft in strike length and 50 ft to 300 ft in width. The thickness of mineralized zones at Steer ranges from 20 ft up to 100 ft. The depth to mineralization ranges from near surface at the west end of Steer to a depth of about 800 ft below the surface for most of SSX. Most of the mineralization is between 600 ft and 1,000 ft below the surface.

Mineralization at the SSX mine occurs mostly in the micritic unit III of the Hanson Creek Formation. A smaller portion of the mineralization occurs in calcareous siltstone at the base of the Roberts Mountains Formation or in the upper two cherty and dolomitic members of the Hanson Creek Formation. Mineralized zones are localized in and near west-northwest trending steeply dipping dikes (*e.g.*, South Boundary Dike); however, dike material is a minor component of the ore at SSX. Mineralization is also localized along cross-cutting northeast trending faults. Folding of the mineralized horizons is apparent along axes parallel to the west-northwest dike trend and, more prominently, parallel to the northeast fault set. Gold occurs in decarbonatized rock, commonly in association with variable amounts of orpiment and realgar. Silicification with stibnite can also be associated with gold in portions of the upper cherty member of the Hanson Creek Formation.

Gold mineralization in the Steer portion of the SSX complex has been identified in an area stretching approximately 3,000 ft east from the old Steer pit to halfway along the connection drift to SSX Zone 5. Most gold mineralization at Steer is associated with gently dipping structures cutting through Hanson Creek unit III. These structures strike northeast and dip southeast, offsetting strata. Zones of mineralization typically follow the structures and tend to be broad and relatively thin. The mineralized zones are usually at the contact between Hanson Creek Formation units III and IV and occasionally follow the structures up through unit III. Both within the Steer portion and the western side of SSX, several low-angle features have been observed. These features are at least partly responsible for the gold mineralization at the contact of Hanson Creek Formation units III and IV.

In the eastern portion of the Steer area, high-grade mineralization is associated with the Husky Fault, a major northeast trending normal fault with approximately 300 ft of normal dip- slip displacement to the southeast. Major northwest trending dikes appear to have locally compartmentalized high-grade mineralization. The intersection of these dikes with Hanson Creek Formation unit III and the Husky Fault and its related structures offers excellent exploration potential. One of these dikes is interpreted to be the western extension of the South Boundary dike, which is an important ore-controlling structure at the SSX to the east.

At Steer and SSX, the structural intersections are the primary targets for resource expansion, as well as the westward extension of the South Boundary dike.

The resource wireframes for the SSX mine are illustrated in Figure 7.5.

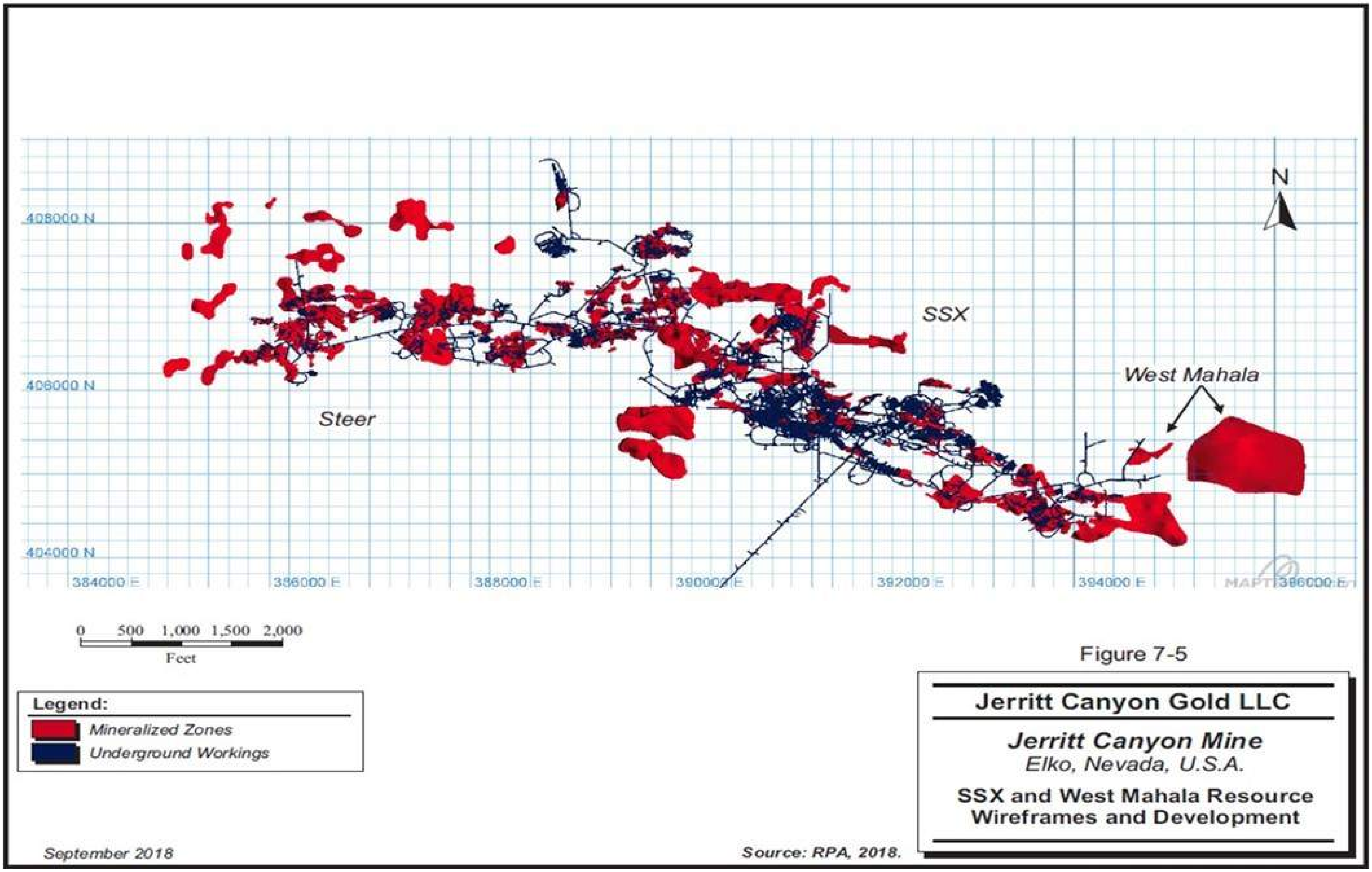


**Figure 7.5.** **SSX and West Mahala resource wireframes and development**
**Source: RPA, 2018**

### 7.2.2 Smith Mine

The Smith mine, accessed from near the bottom of the Dash open pit, was started in 1999 as the pit was being mined out. Gold mineralization in the Smith, Mahala, and West Dash deposits is associated with the northeast trending Coulee Fault and west-northwest trending faults and dikes. The mineralization at Smith generally trends northwest with minor northeast trends along minor structures. The mineralization is continuous along the northwest trend ranging from 200 ft to 2,500 ft. The width of the mineralization ranges from 20 ft to 400 ft and the thickness ranges from 10 ft to 100 ft. The depth of the mineralization ranges from near surface at the Dash Pit to 1,200 ft below the surface to the south and east.

In Smith Zone 1, high-grade gold mineralization is hosted in the upper and middle portions of Hanson Creek Formation unit III within a northwest trending horst block between the South Graben Fault and the 170 fault. Mineralization in Zones 2 and 3 is directly associated with west-northwest trending dikes. High-grade mineralization occurs within Hanson Creek Formation units II and III along the steeply dipping dikes. Lesser amounts of mineralization exist at higher levels where the dikes intersect favorable beds in the Roberts Mountains Formation. An exception to the tight elevation controls on mineralization is observed at the intersection of the west-northwest trending dikes and the Coulee Fault. Here, high-grade mineralization blows out into Hanson Creek Formation unit III along the west plunging intersection of the dikes and the fault for a down-dip depth of 600 ft. The resource wireframes for the Smith deposit are illustrated in Figure 7.6.

### 7.2.3 Saval 4

Previous mining at Saval has included both open pit mining in 1994 to 1997 and small-scale underground mining from 2004 to 2006 in the high wall of the Saval 2 pit. Gold mineralization in the Saval Basin area, located to the west of the SSX mine, is primarily hosted in Hanson Creek Formation unit III where it has been intersected by faults and has locally been compartmentalized by northwest trending dike systems. In this area, a series of west-northwest trending structures have been cut by northeast trending faults. Notable structural features include the west-northwest trending Saval horst and the northeast trending Husky Fault, which cuts across the older Saval horst and down-drops it to the southeast. Mineralization is mostly hosted in Hanson Creek Formation unit III in the vicinity of structural intersections, often forming relatively steep, narrow, plunging bodies. Dikes, such as the Saval 3 pit dike can be traced for thousands of feet. High-grade gold mineralization has been concentrated along the Saval 3 dike in several locations, most prominently in the Saval 3 pit and in the north part of Zone 5 at SSX.

Mineralization at Saval generally trends east-west from 200 ft to 1,000 ft. The width ranges from 50 ft to 200 ft and the thickness from 10 ft to 50 ft. The depth is from the surface to approximately 400 ft below the surface. Saval contains gold mineralization that has been recently remodeled with both 0.01 oz/st Au grade shells and 0.10 oz/st Au grade shells.

The Saval 4 underground resource (Figure 7.7) is a relatively steep and vertically extensive high-grade zone that lies within the Saval horst beneath a splay fault of the Sheep Tank Fault. The intersection of west-northwest trending faults that bound the horst with northeast trending faults are interpreted to have played an important role in formation of this resource.

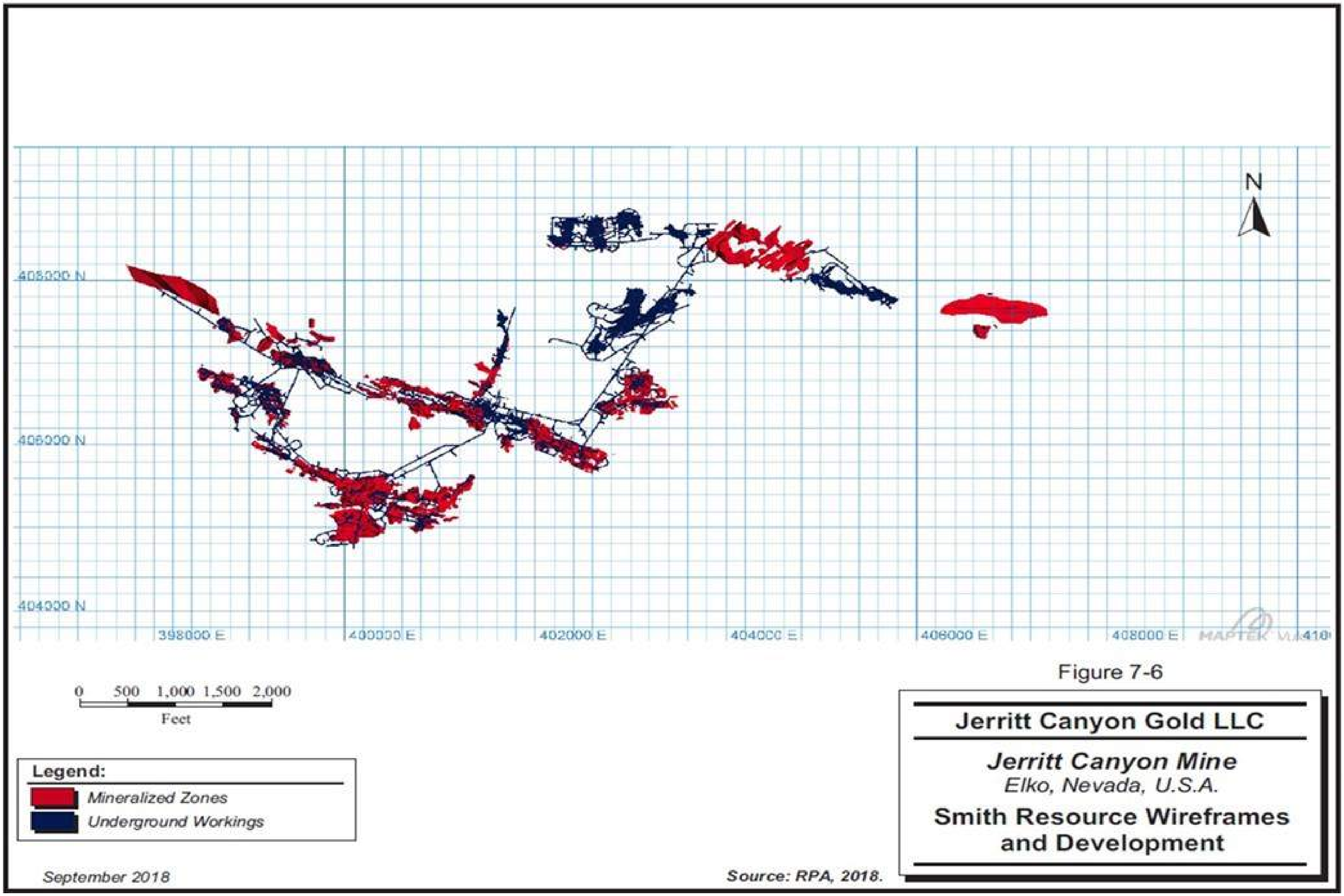


**Figure 7.6. Smith resource wireframes and development**
**Source: RPA, 2018**

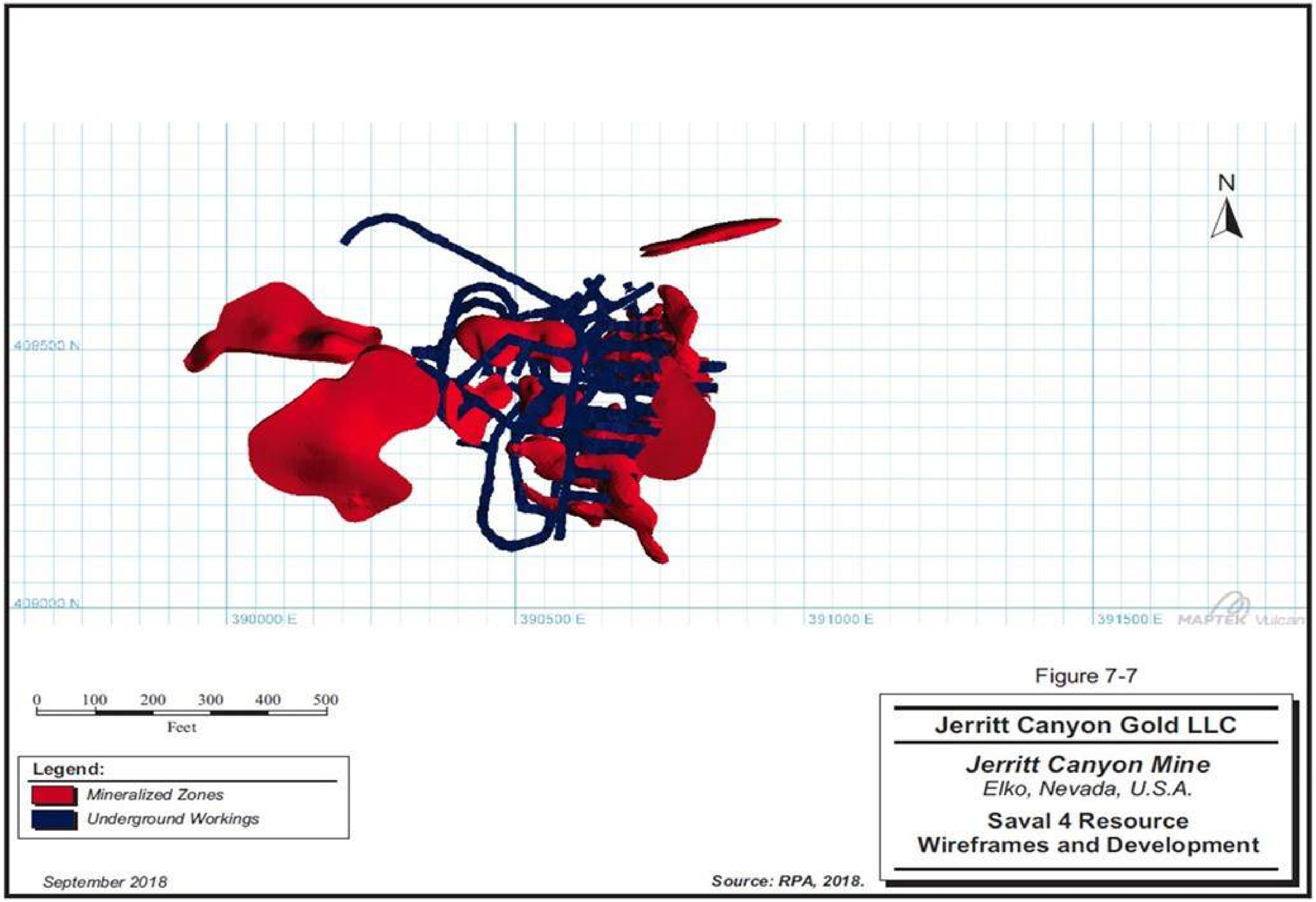


**Figure 7.7. Saval 4 resource wireframes and development**
**Source: RPA, 2018**

## 8.0 DEPOSIT TYPES

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

Jerritt Canyon is a Carlin-type gold deposit, which are hydrothermal in origin and they are usually structurally controlled. Current models attribute the genesis of Carlin-type gold deposits to:

- Epizonal plutons that contributed heat and possibly fluids and metals;
- Meteoric fluid circulation resulting from crustal extension and widespread magmatism;
- Metamorphic fluids, possibly with a magmatic contribution, from deep or mid crustal levels; and
- Upper crustal orogenic-gold processes within an extensional tectonic regime.

Jerritt Canyon is hosted by silty carbonate or carbonaceous siliciclastic rocks originally deposited as shelf sedimentary rocks during the Paleozoic age. The Paleozoic host rocks have been imbricated, faulted, and folded through several orogenic events in the Paleozoic and Mesozoic.

Carlin-type gold deposits were emplaced during the Middle to Late Eocene during an initial phase of extensional tectonics at which time high potassium calc-alkaline magmatic rocks were emplaced. Mafic dikes were emplaced during this phase of igneous activity and demarcate north-northeast and west-northwest oriented structures. The primary controls on the occurrence, distribution, and form of the deposits are:

- Favorable host rocks (formation units);
- The reactivation of Paleozoic and Mesozoic structures; and
- Eocene syn-mineralization normal faults.

In general terms, the intersection of structures with favorable host rocks is the primary control and the form of mineralization ranges from apparently stratabound to fault hosted where the faults can be either highly discordant to bedding or bedding parallel. Deposits at Jerritt Canyon are mostly stratabound or fault hosted. Gold occurs as very fine, micron-size, particles in pyrite and arsenian pyrite. Other sulphides are orpiment, realgar, and stibnite. Alteration include carbonatization, decalcification, and silicification (jasperoid).

# 9.0 EXPLORATION

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

Exploration completed by JCG has included desktop compilation and interpretation of historical datasets, target identification, and RC drilling. The drilling completed on the property by JCG includes two phases of surface drilling and on-going underground drilling and is described in Section 10.0 of this report. In the fall of 2015, JCG initiated a comprehensive compilation of all historical geophysical data for the property (Ellis, 2016) as well as compilation of past surface geochemistry including soil, stream sediment, and bedrock sampling, completed on the property to 2015. Interpretation of these compilations incorporated geology, gold distribution, and past surface exploration drilling. These compilations resulted in identification of exploration targets and development of a surface RC exploration program, which was executed in the fall of 2016.

Conclusions from the geophysical review taken from Ellis (2016) are as follows:

- The SP, gradient array, early AMT survey, and the ESCAN surveys are not expected to provide consistently useful targeting information in the future. The SF and gradient array have uncertain depth information making them of little value. The AMT and ESCAN were acquired in specific areas to estimate the depth to more resistive lower plate rocks. If these survey areas undergo further exploration, the datasets are in a format where they can be easily reviewed and may provide value when combined with geochemistry and geological mapping.
- The radiometric and airborne electromagnetic resistivity data collected as part of the DIGHEM survey do not show a consistent signature with known mineralization. These datasets have been reviewed over the years in their present form and there is little probability that some general correlation with mineralization has gone unrecognized.
- There is evidence that elevated IP values (due to increased abundances of sulphide minerals) occur within and proximal to areas of gold mineralization. Additional IP surveying in prospective areas is worth consideration.
- Inversion of the gravity data provides a 3D picture of the distribution of the density of the various rock types located on the property. High density rocks are seen to flank the Independence Range with a north-south trending lower density core present that may be dominated by less dense intrusive rocks or deeper low density sediments. Locally, a correlation exists between low density anomalies with mineralization trends (*e.g.*, the SSX deposit) that may identify areas of decalcification. This correlation should be examined in well-known areas to understand the extent to which decalcification is being identified and can be used for broader targeting. The use of density contrasts to identify areas of low density readings that may represent areas of decalcification is complicated by the terrain correction factor. However, the results thus far are encouraging and have identified areas of density lows that have not been tested by drilling.
- Inversion of the DIGHEM aeromagnetic data shows a good correlation of magnetic susceptibility highs with known intrusive rocks. Intrusive rocks interpreted to be present at Starvation Canyon are shown to extend northeast across the core of the mineralized area at depth. There is an observed correlation of intrusive rocks with mineralization at Starvation Canyon and along the northwest SSX deposit trend. The source of the magnetic susceptibility highs is interpreted to be an infusion of intrusive dikes. These dikes increase the total magnetic susceptibility of the non-magnetic host lithologies that extend to depth into more coherent intrusive stocks. Similar susceptibility signatures to those at SSX, Burns, and Starvation Canyon may identify other areas for more detailed examination by geologic mapping and geochemical methods.

- Based on the new gravity and magnetic inversion modelling, there is strong evidence for the presence of intrusive rocks on the east flank of the Independence Range adjacent to and beneath the Tertiary Mill Creek volcanic rocks and gravel. *Note that one RC drill hole, drilled in the late 1990s on the east flank of the Independence Range, penetrated upper plate sediments in fault contact beneath overlying volcanic rocks and gravel* [*Behre Dolbear, 2020*].

In early 2017, JCG commissioned further detailed evaluation of the historical gravity data, inversion and examination of DIGHEM EM and magnetic data, inversion and examination of the ground magnetic data, and examination of the Titan survey results. This work has been completed by Condor Consulting (Witherly, 2017) and the main observations and conclusions are summarized below.

- **DIGHEM EM:** Over much of the property, there is a good relationship between the high resistivity and Lower Plate rocks. In some areas, however, there is high resistivity and no Lower Plate rocks, and the reason for the high resistivity is unclear. Also, in some areas mapped as Lower Plate, the resistivity has moderate values, and it is not clear whether this is due to a soil cover or change in the physical properties of the Lower Plate rocks.
- **DIGHEM EM Magnetics:** The magnetic results show mostly low response, which is inconclusive. The major feature is a strong magnetic high wrapping along the eastern margin of the range that appears associated with Tertiary volcanics, much of it being located under Quaternary cover. There are limited exposures of Tertiary volcanics on the western margin of the range but these do not appear to be magnetic. There could be significant structural information contained in the magnetic data which could be defined with suitable processing.
- **DIGHEM EM Radiometrics:** The potassium is relatively low over two major Lower Plate areas; the Burn's Creek/Charlies Hill and Wheeler Mt. There are a series of lows across the top of the survey area where no significant Lower Plate rocks occur. The apparent resistivity values are high in the same areas, which suggests that there is a specific rock unit that is part of the Upper Plate package being mapped.
- **Gravity Survey:** The reasons for the gravity pattern described in Ellis (2016) are not well understood. The Lower Plate rocks are expected to be of higher density, however, this is not clear from the images examined. Given the cost of acquisition of the primary data, the survey results should be reviewed in detail and it should be ensured that the most suitable form of terrain correction has been applied.
- **IP-Titan Resistivity:** The resistivity results show that the Lower Plate rocks (eastern 40% of the survey block) are quite resistive at all depths. The western part of the block over Upper Plate rocks is medium-conductive at a shallow depth, however, a strong conductive zone is noted in the central part of the block at depths of approximately 1,500 ft.
- **IP-Titan Chargeability:** The chargeability shows strong response from surface to a depth of 2,500 ft, where the contact between the Upper Plate and Lower Plate rocks is assumed to be located. The chargeability zone can be seen to extend over 4,000 ft (sections are 2,000 ft apart) whereas the resistivity low only goes to depth on one section. Based on resistivity and chargeability data, the contact between the Upper Plate and Lower Plate rocks cannot be defined with certainty.
- **IP-Titan MT:** The modelled MT results were visually examined and while they appeared to show some strong subvertical features, there was little evidence that any layering between the UP and LP rocks was being mapped.

In the spring of 2017, JCG commissioned Goldspot Discoveries Inc. (Goldspot) to complete a machine learning (AI) compilation, interpretation, and targeting study. The study incorporated several datasets from the property including drilling (lithology and assay), surface geology, topography, soil geochemistry, gravity, DIGHEM EM, magnetic, and radiometric data. Goldspot incorporated hyperspectral data into the compilation and interpretation.

Based on this study, Goldspot generated target areas, planned drill holes, and completed a 3D geological model incorporating structural and lithological information in Leapfrog software.

## 9.1 EXPLORATION POTENTIAL

The Jerritt Canyon property is believed to hold significant potential for the discovery of additional gold-bearing mineralization. JCG has successfully expanded the Mineral Resources directly associated with the mining operation.

Historically, the primary exploration tool on the Jerritt Canyon property has been the mapping and projection of north-northeast faults, west-northwest faults, the intersections of these faults, and the intersections of these faults with the favorable host rocks such as the upper Hanson Creek Formation and the lower part of the Roberts Mountain Formation. Eocene mafic dikes demarcate the west-northwest and north-northeast structures and therefore are also considered. This approach is the basis for targeting of on-going underground drilling.

In particular, this strategy has been used to explore along the extension of well-established west-northwest and northeast structural trends in the Smith and SSX mines. This has resulted in the delineation of Mineral Resources at Mahala, SSX Zone 5, Smith Zone 8, and Smith Zone 4. JCG geologists have completed a compilation and targeting exercise to target structural intersections in the SSX-Smith-Saval 4 Lower Plate domain (Figure 9.1).

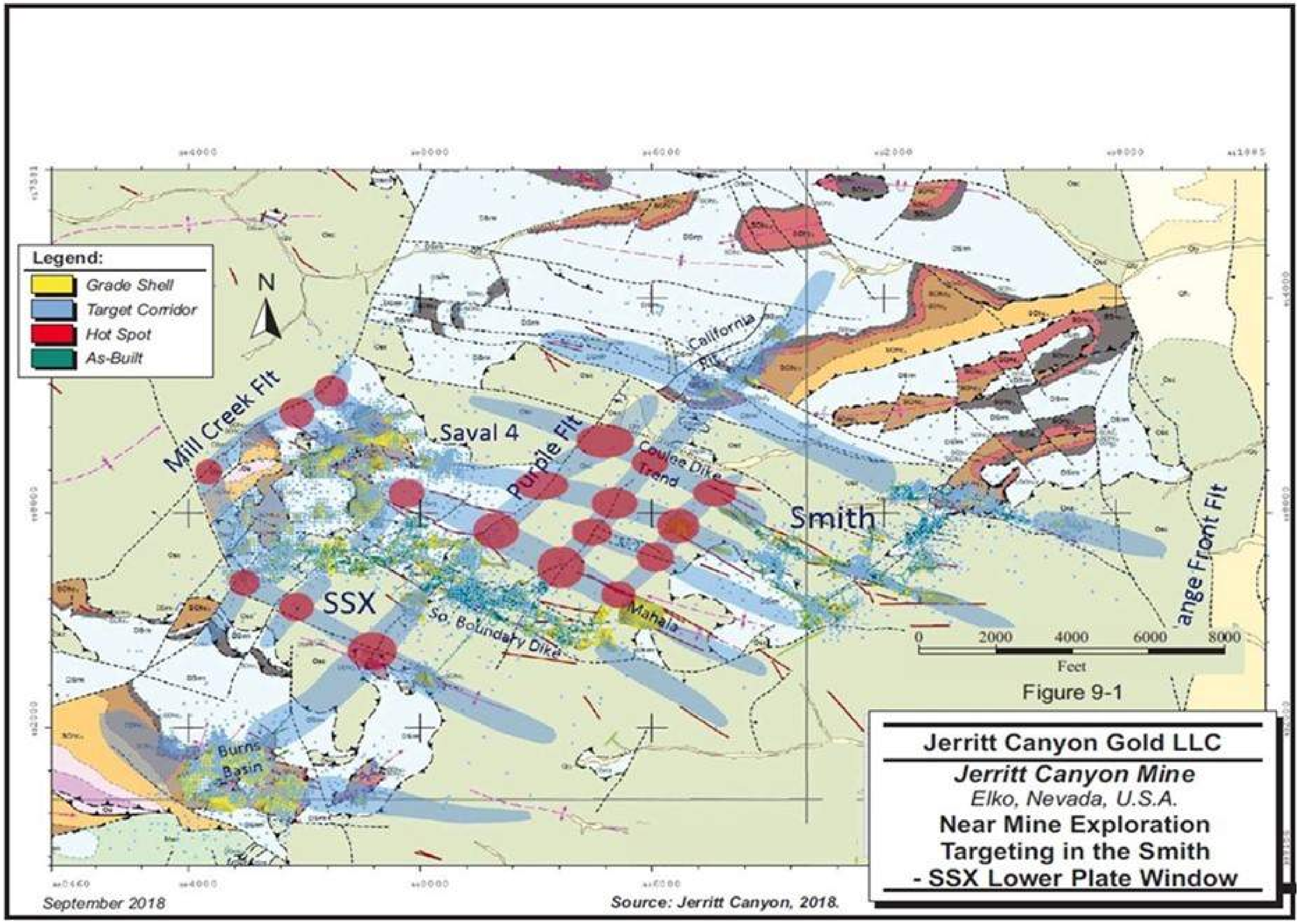


**Figure 9.1. Near Mine exploration targeting in the Smith-SSX lower plate window**
**Source: RPA, 2018**

The most recent Technical Reports on the property (Johnson, et al., 2013 and Odell, et al., 2012) report open pit tonnages associated with past producing pits or near surface targets with historical drilling as "Mineral Resources". RPA considers these to be exploration targets. Open pit exploration target locations are summarized in Table 9.1 and illustrated in Figure 9.2.

**TABLE 9.1**
**EXPLORATION TARGETS**
**JERRITT CANYON GOLD LLC - JERRITT CANYON GOLD MINE**

| OP Target | Status | Range of Tons (000) | Range of Au (oz/st) | Range of Au (oz) |
|---|---|---|---|---|
| Burns Basin | Past Producer (PP) | 400-500 | 0.08-0.12 | 32,000-60,000 |
| Mill Creek | PP | 300-350 | 0.08-0.10 | 24,000-35,000 |
| Saval | PP | 350-400 | 0.08-0.10 | 28,000-40,000 |
| Wright Window | New | 100-150 | 0.08-0.10 | 8,000-15,000 |
| Pie Creek | New | 200-250 | 0.08-0.10 | 16,000-25,000 |
| Road Canyon | New | 175-225 | 0.06-0.10 | 10,500-22,500 |

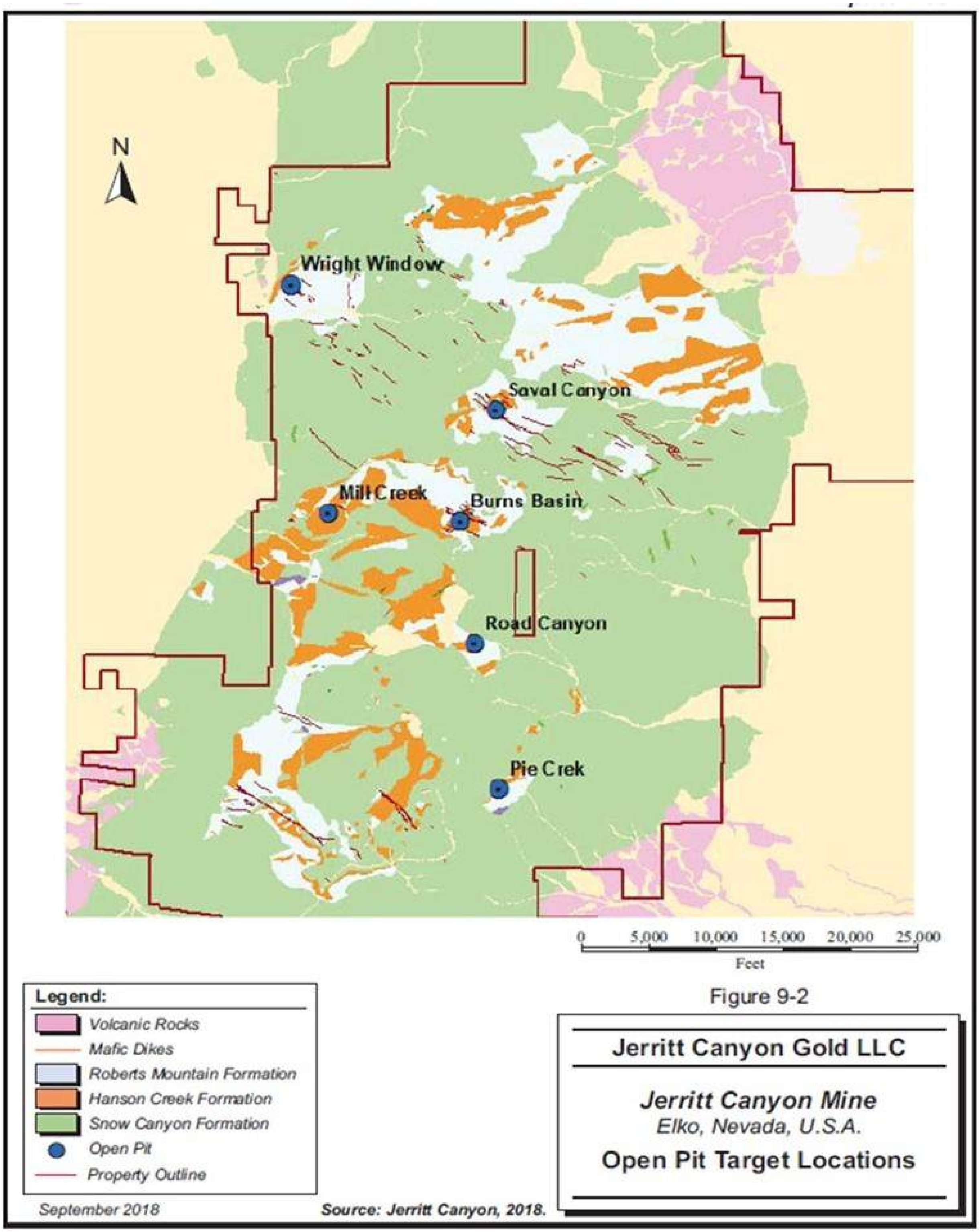


**Figure 9.2. Open pit target locations**
**Source: RPA, 2018**

The quantity and grade of this exploration target potential ranges from approximately 1.5 million tons to 2.0 million tons and 0.08 oz/st Au to 0.12 oz/st Au, respectively. RPA notes that the potential quantity and grade is conceptual in nature, there has been insufficient exploration to define a Mineral Resource in these areas, and that it is uncertain if further exploration in these areas will result in any of these targets being delineated as Mineral Resources.

Over the long mining and exploration history, past operators have generated a considerable amount of geoscience data and information for the property. JCG is in the process of compiling and interpreting this historical data with the goal of identifying targets throughout the property for further drilling, delineation, and production. Based on the assessment of regional datasets and review of exploration and development history, JCG is of the opinion that there is district scale exploration potential at the property. Work on targets interpreted to hold new deposit potential is ongoing and includes:

- In addition to the selected targets within Lower Plate rocks in the north part of the property, evaluation of Lower Plate rocks has been completed in the southern half of the property.
- Continued evaluation and development of selected historical targets.
- Projection of mineralized structures and trends from current and past mines targeting Lower Plate rocks under the Upper Plate, prioritizing those areas where Upper Plate is thin due to thrust geometry.
- Continued interpretation and projection of block bounding faults from the Lower Plate–Upper Plate contacts and projected through the Upper Plate rocks.
- Follow-up and continued work on targets identified by Goldspot.

Based on work to date, the following four targets are considered to be of higher priority:

- Winters Creek;
- East Dash;
- Murray North; and
- Starvation.

The Winters Creek underground target is described in Section 10.0 of this report. The 2017 surface drilling on this target was successful in significantly expanding the footprint of mineralization, which remains open for expansion (Figure 9.3).

The East Dash target is located east-southeast of the Dash pit and east of Smith underground Zone 9 (Figure 9.4). The East Dash target is defined by the occurrence of surface drill hole intercepts, in the lower part of the Roberts Mountain Formation, along a northeast cross structure at and adjacent to the intersection with a west-northwest structure which trends through Smith Zone 9 and into the Dash pit.

The Murray North target is essentially a continuation of the Murray mine to the north. The delineation drilling at the Murray mine did not constrain mineralization, which remains open to the north (Figure 9.5). The density of surface drilling along the north contact of the Murray mine is sparse to non-existent. Recent interpretation by JCG geologists points to a connection between mineralization at Murray and mineralization at the West Generator pit approximately 4,000 ft to the north.

Starvation Canyon mine produced approximately 845,000 tons and remains the only gold production from the Starvation Canyon Lower Plate window. Given the levels of gold production from the Lower Plate windows in the northern part of the property, the Starvation Canyon window is prioritized as an earlier stage target. The window is typical in that it contains imbricated Hanson Creek and Roberts Mountain stratigraphy, west-northwest trending faults and dikes, and a major northeast trending fault (Figure 9.6).

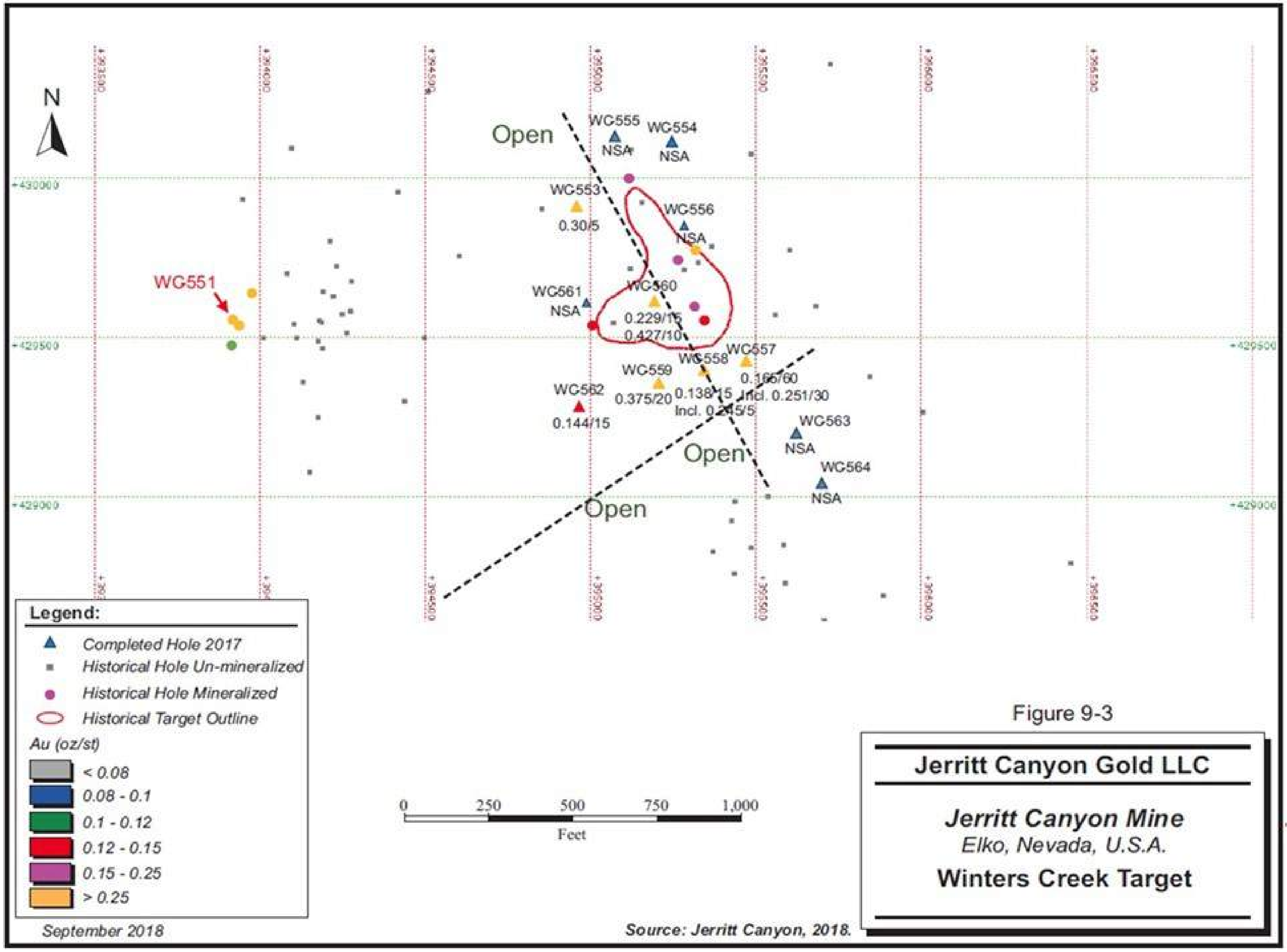


**Figure 9.3. Winters Creek target**
**Source: RPA, 2018**

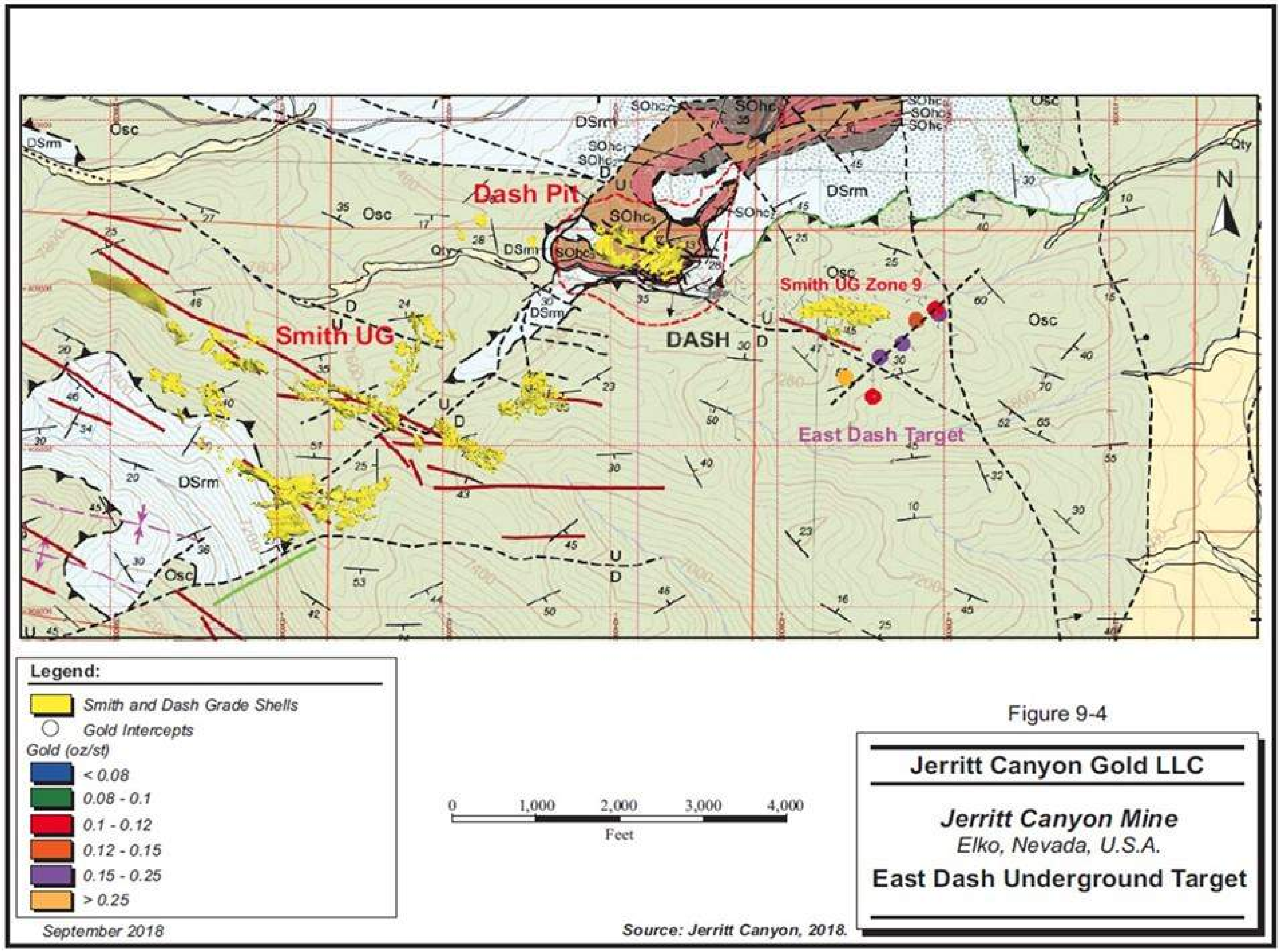


**Figure 9.4. East Dash underground target**
**Source: RPA, 2018**

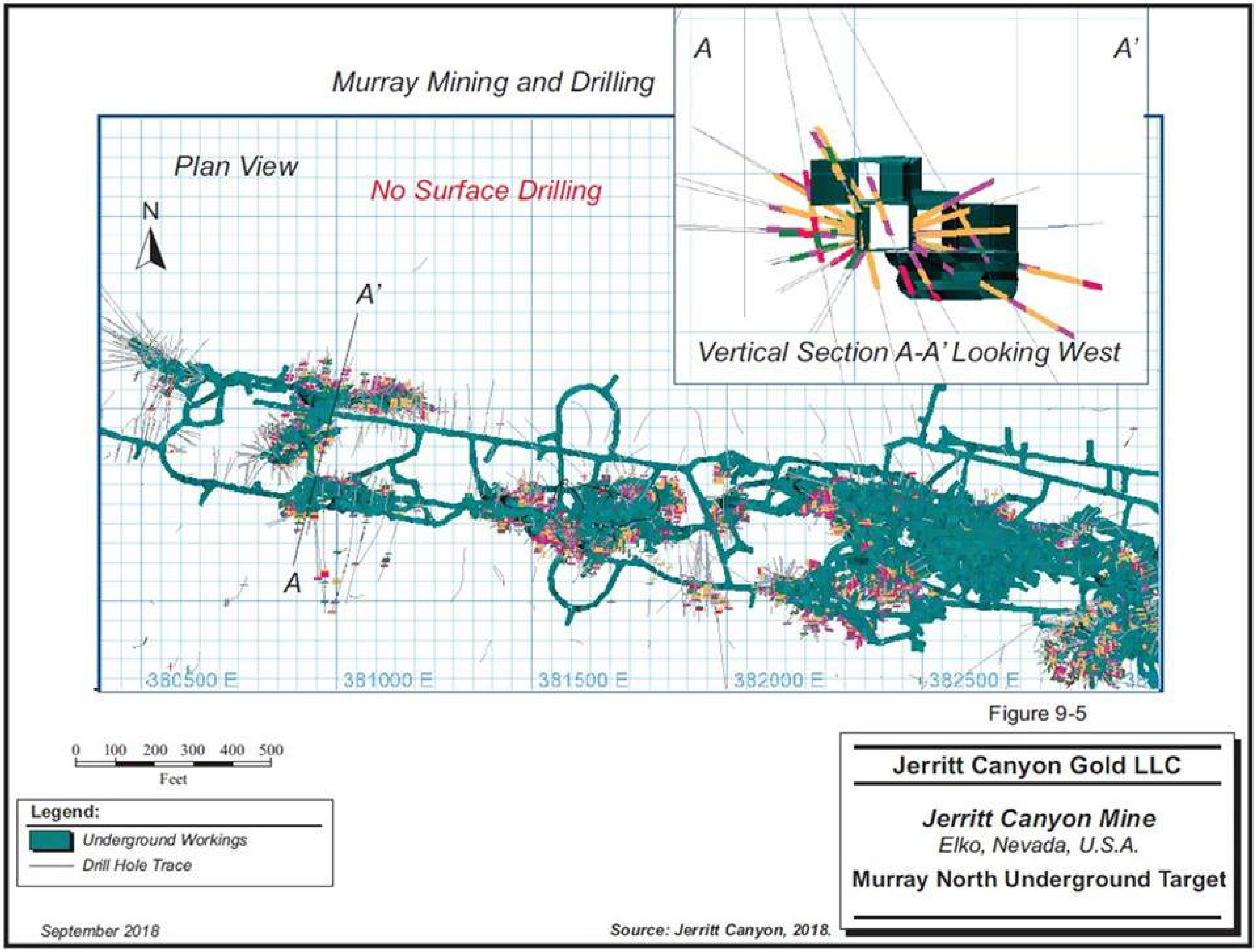


**Figure 9.5.** **Murray North underground target**
**Source: RPA, 2018**

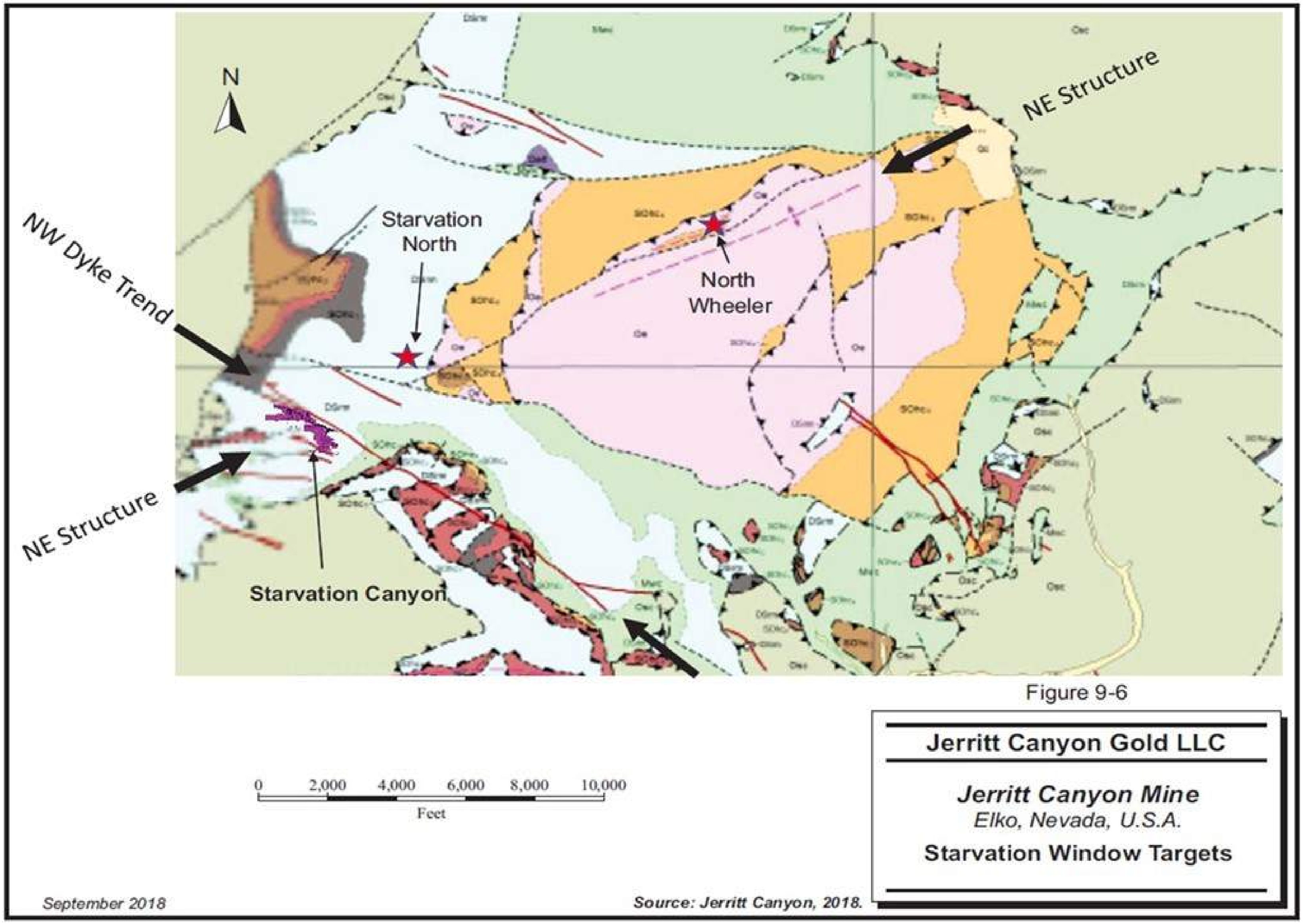


**Figure 9.6. Starvation Window target**
**Source: RPA, 2018**

The Jerritt Canyon property is approximately 119 square miles in size. Based on past mining and exploration data, JCG and RPA are of the opinion that the property holds significant exploration potential in the southern portions of the property where limited work has been completed to date. Recent compilation and interpretation completed by the JCG exploration team including evaluation of soil geochemistry data indicates that samples greater than 100 ppb Au have a distribution in the south very similar to that in the north (Figure 9.7). The potential of the southern half of the property is further supported by the targets generated by the Goldspot exploration target generation exercise. In particular, there is a northeast trend of target areas at depth located in the southeastern part of the property (Figure 9.8).

Deep drilling across the property, is required to test the potential for additional mineralization at depth. Recent compilation and interpretation by JCG and Goldspot points towards the projection of productive structural trends beneath Upper Plate rocks as a priority exploration concept. A component of this work is completed inferring depth to the Lower Plate through projection of surface mapping and geological modelling as shown in Figure 9.9.

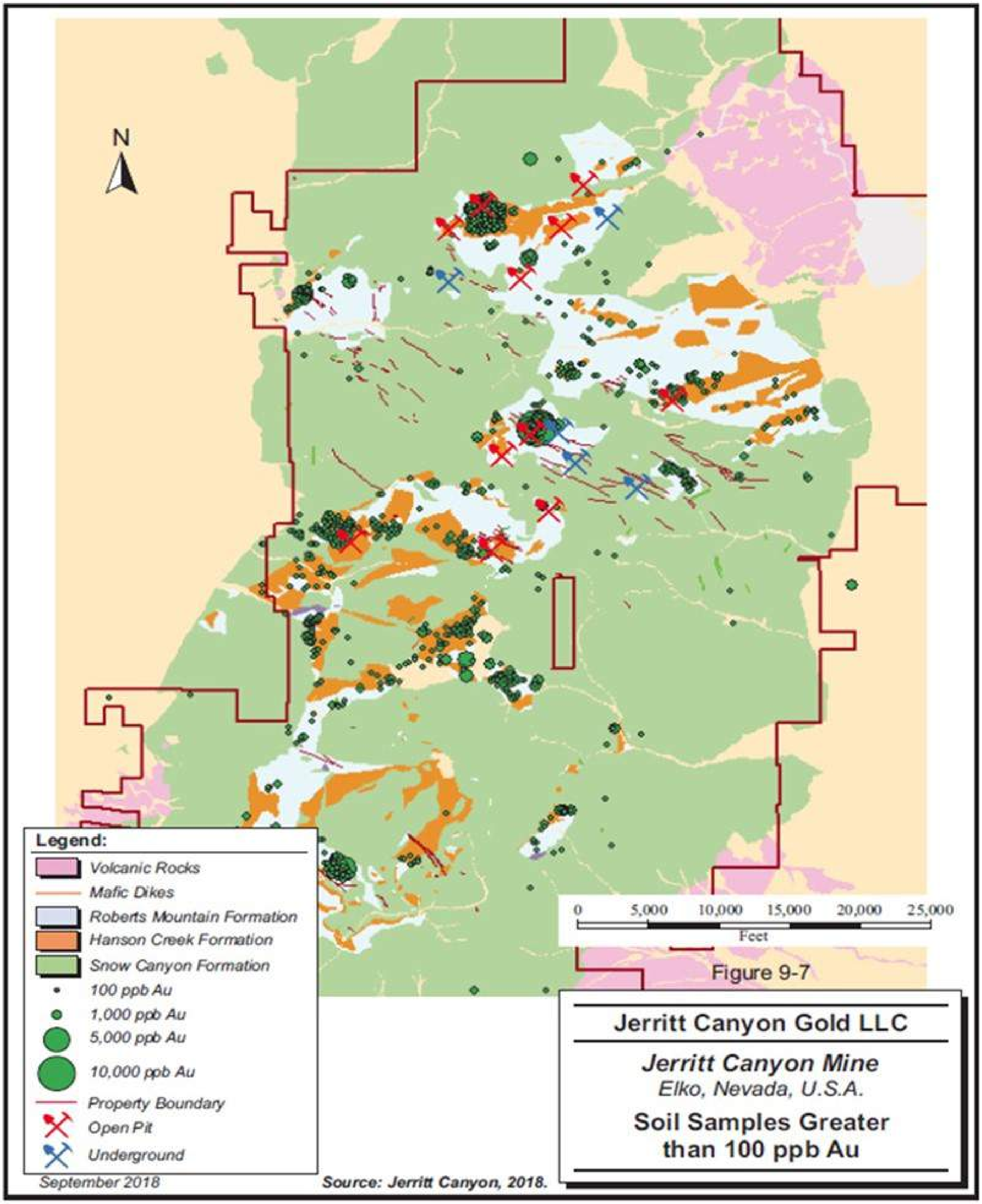


**Figure 9.7. Soil samples greater than 100 ppb**
**Source: RPA, 2018**

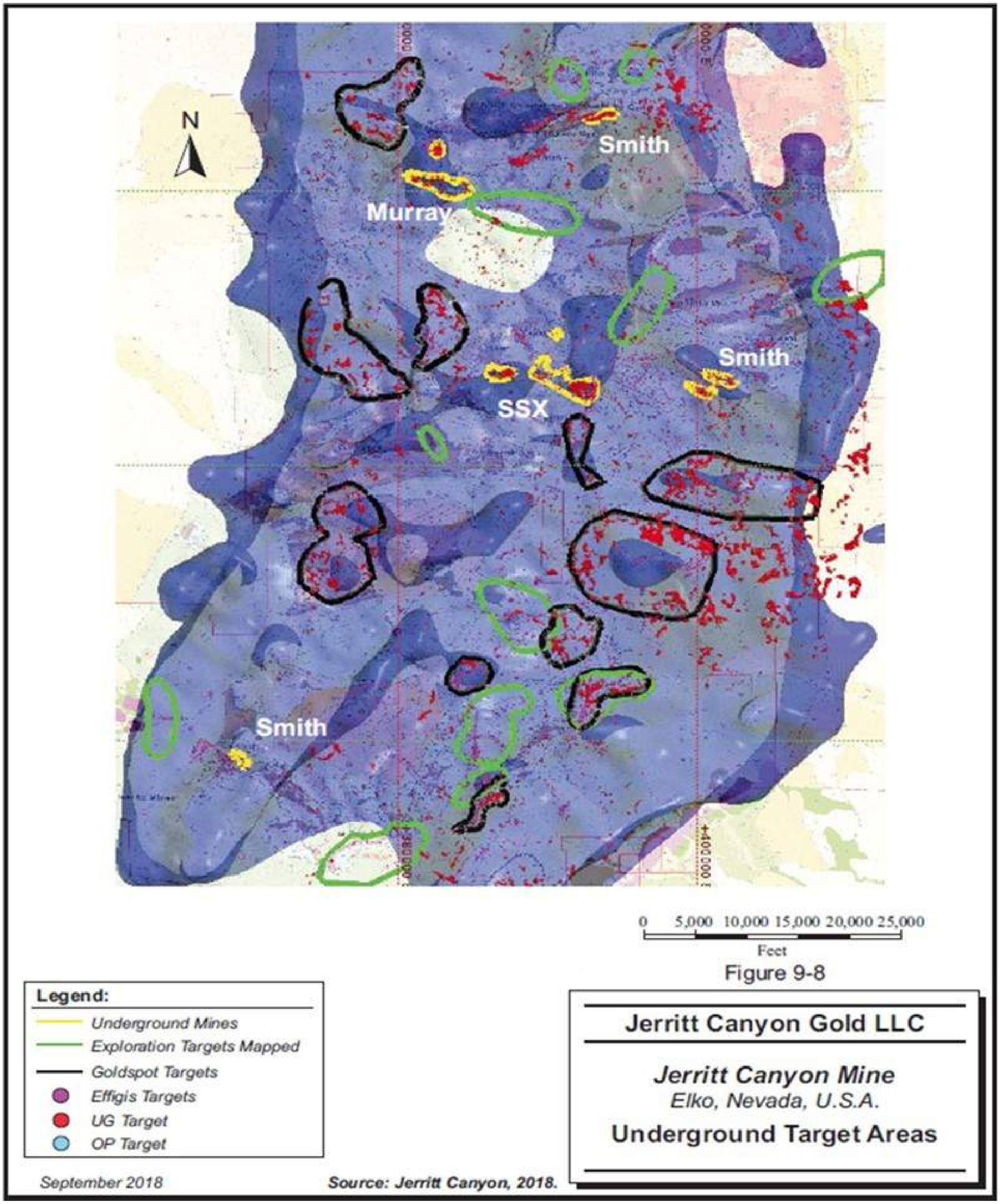


**Figure 9.8. Underground target areas**
**Source: RPA, 2018**

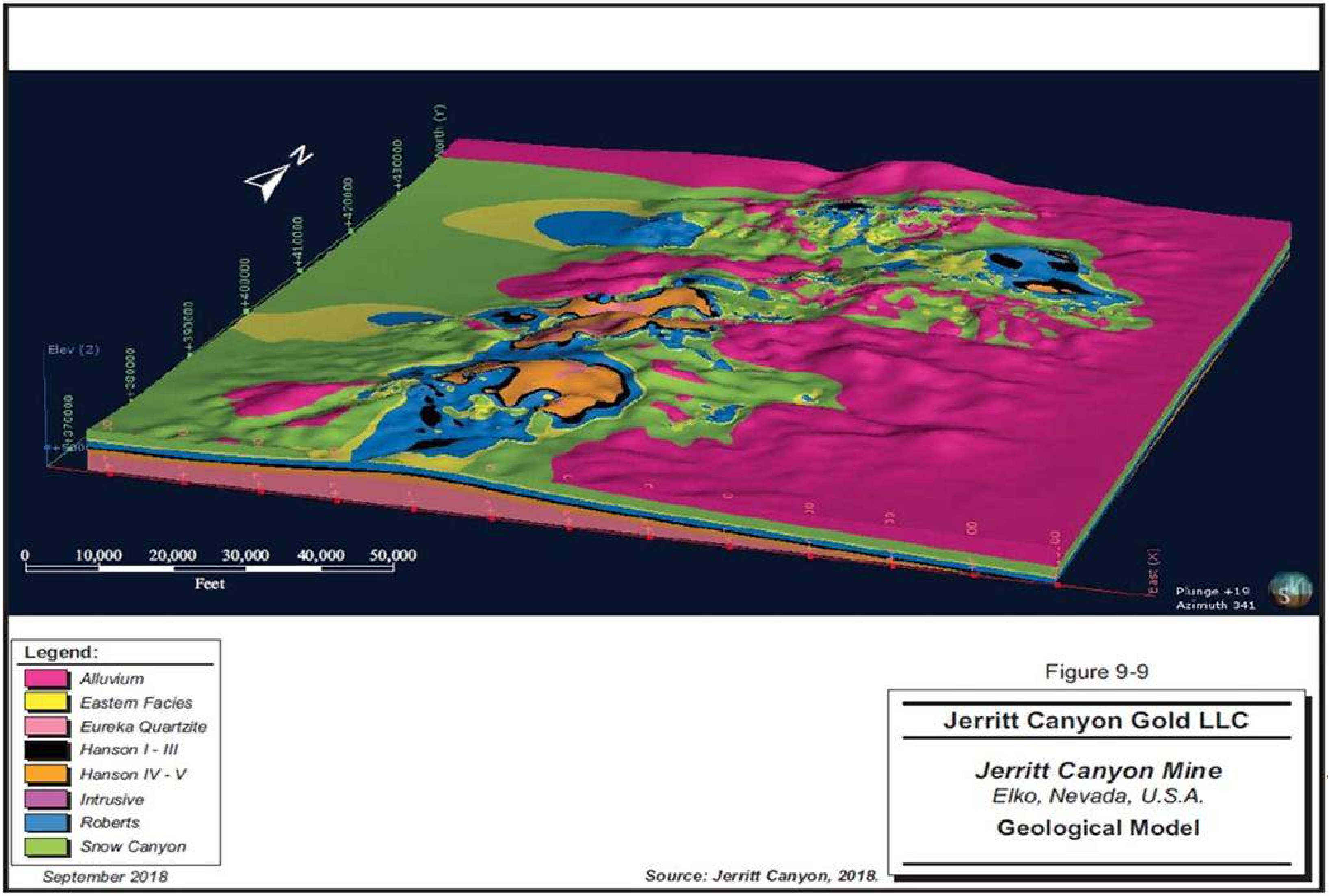


**Figure 9.9. Geologic model**
**Source: RPA, 2018**

## 10.0 DRILLING

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

This section discusses underground and surface drilling completed on the property by JCG. Drilling completed prior to JCG's acquisition of the property is described in Section 6.0.

### 10.1 UNDERGROUND DRILLING

Since June 23, 2015 through to the end of 2017, JCG drilled a total of 81,720 ft in 114 core holes and a total of 1,024,995 ft in 7,413 RC (Cubex) holes underground (Table 10.1).

**TABLE 10.1**
**UNDERGROUND DRILLING BY JCG**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Mine | Type | No. Holes | Footage |
|---|---|---|---|
| Mahala | Core | 15 | 13,791 |
| Smith | Core | 65 | 45,128 |
| SSX | Core | 34 | 22,801 |
| Total | Core | 114 | 81,720 |
| Mahala | RC | 175 | 32,755 |
| Saval 4 | RC | 156 | 22,435 |
| Smith | RC | 3,847 | 509,595 |
| SSX | RC | 3,217 | 456,795 |
| Starvation | RC | 18 | 3,415 |
| | | | |
| **Total** | **RC** | **7,413** | **1,024,995** |

Underground core drilling is used for exploration to delineate Inferred Resources defined by surface drilling at a spacing of 100 ft or greater. It is also used to test; anomalous areas, or areas of exploration potential, at depth defined by surface hole intercepts; and targets defined by JCG geologists based on the interpretation of stratigraphy, structures and dikes, and the associated distribution of mineralization.

The underground core drill holes have a maximum length of approximately 1,200 ft. Generally underground drilling tests a given target to a depth of 1,000 ft from the drill set-up location. If successfully intersected, the target is delineated with core drilling only to the extent that sufficient confidence exists to complete development to the target. This drilling is generally spaced at 100 ft to 150 ft and results in definition of an Inferred Resource. In some cases, JCG carried out development based on wider drill spacing results, which would be considered as exploration potential.

Cubex holes are drilled for delineation, definition, and extension of resources to support mine planning and near-mine exploration. Cubex holes have a maximum length of approximately 300 ft. Development is completed to a depth where a Cubex drill is set up and the target delineated. Delineation drilling is completed on 25 ft centers along the drifts with fans planned to intercept the target at 25 ft centers, depending on the distance and angle from the drift. This will result in resource definition of sufficient detail to support mine planning and development.

The location of underground drilling completed by JCG is shown in Figure 10.1 for the Smith mine and in Figure 10.2 for the SSX and West Mahala mines. JCG has been successful in converting resource and extending active mining areas with the Cubex drilling. Targeting further out from defined mineralization and infrastructure with core drilling, JCG has been successful in drilling, drifting to, and delineating new resources. Plan maps of JCG drilling with the current wireframes indicating areas of confirmation and expansion of resources and discovery and delineation of new resources are provided in Figure 10.3 for the Smith mine and in Figure 10.4 for the SSX and West Mahala mines.

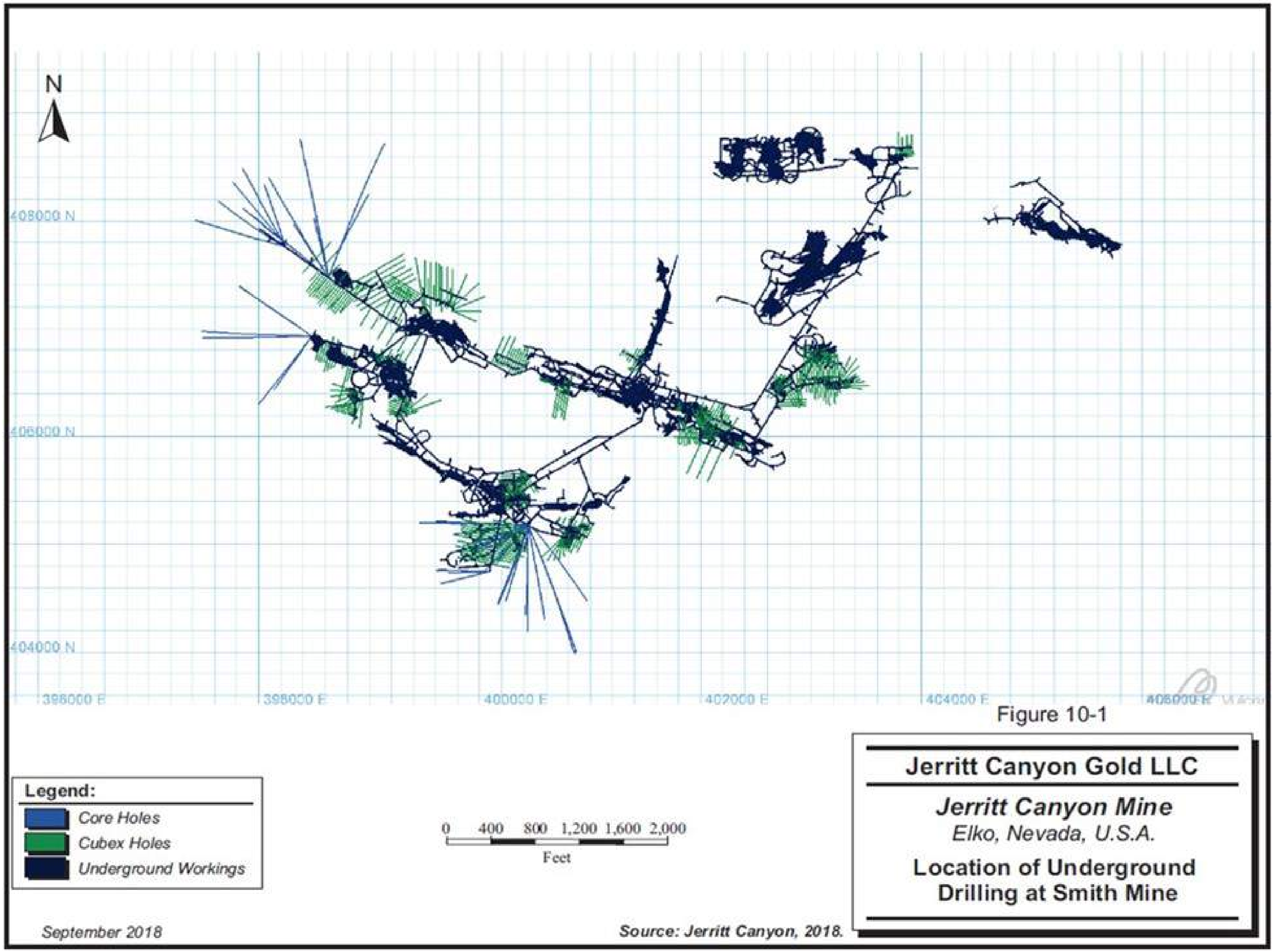


**Figure 10.1. Location of underground drilling at Smith mine**
**Source: RPA, 2018**

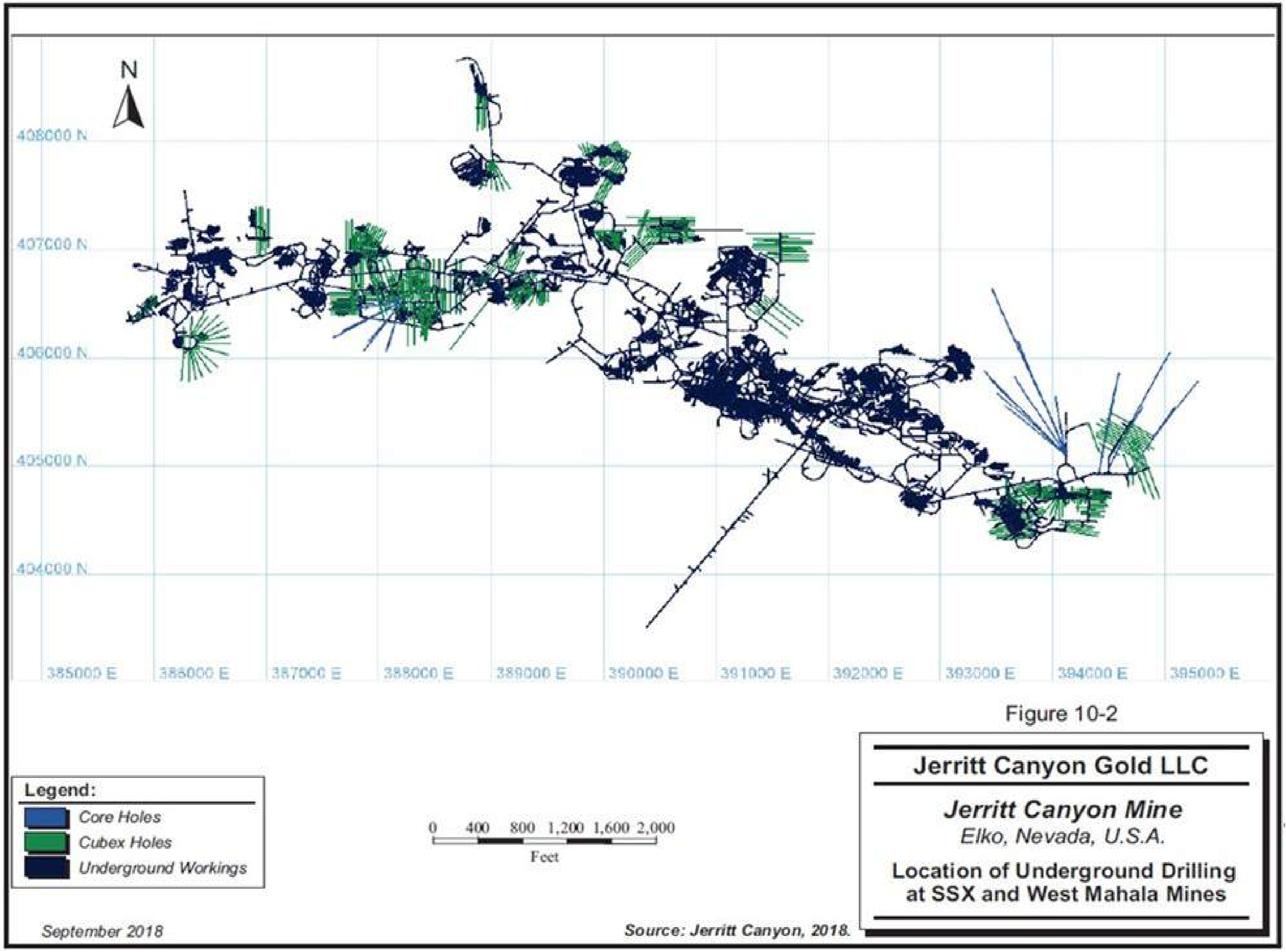


**Figure 10.2. Location of underground drilling at SSX and West Mahala mines**
**Source: RPA, 2018**

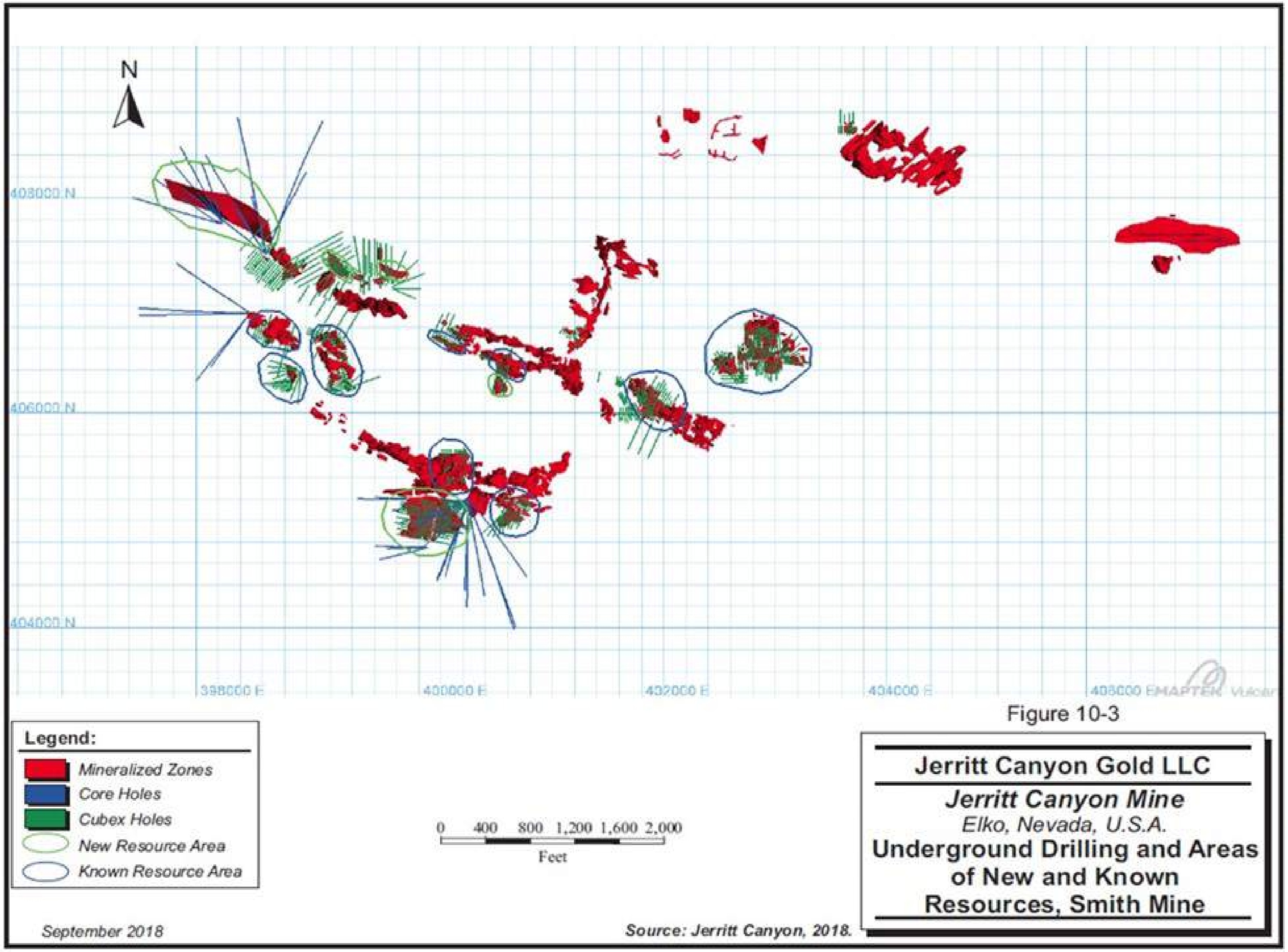


**Figure 10.3. Underground drilling and areas of new and known Resources – Smith mine**
**Source: RPA, 2018**

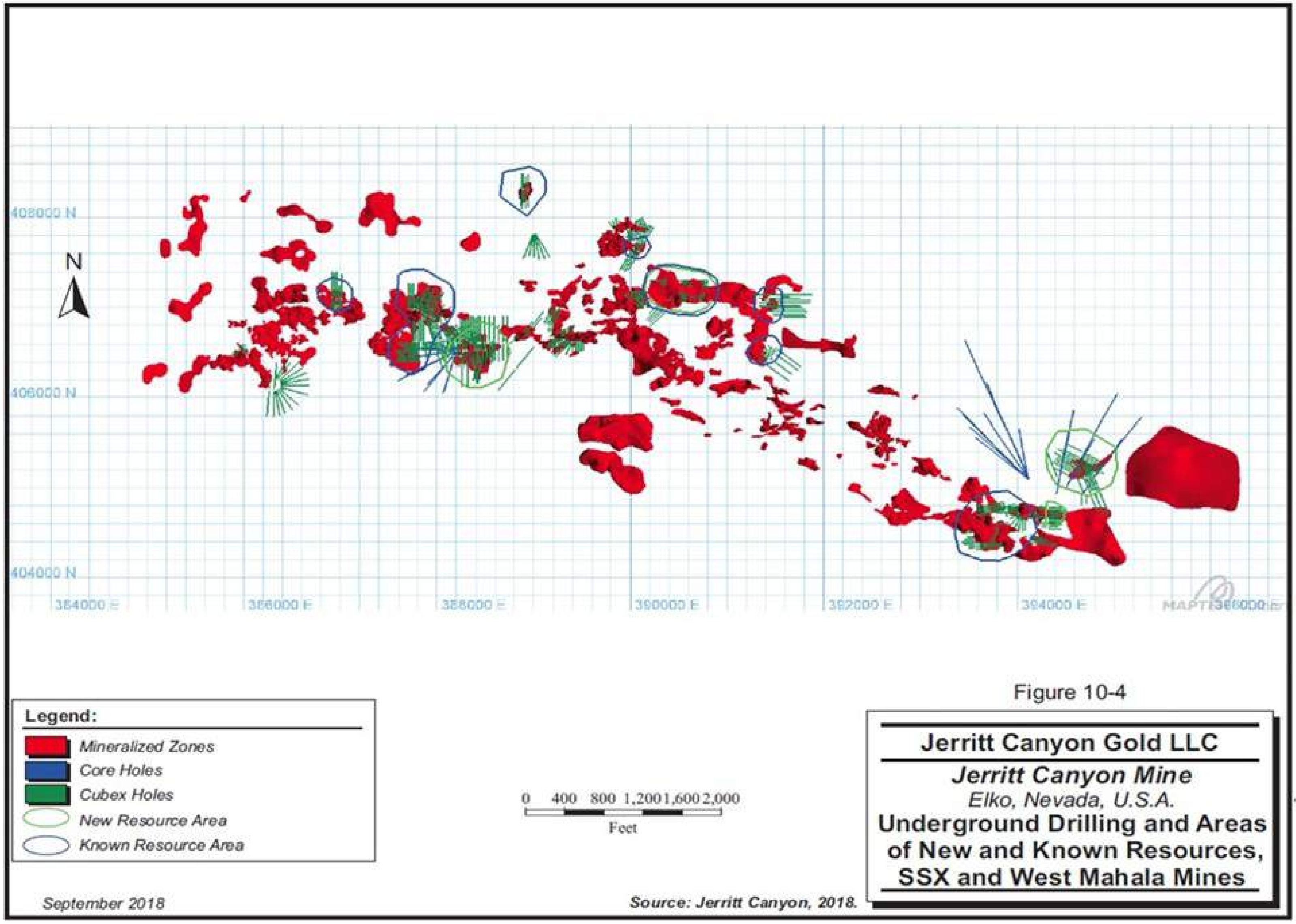


**Figure 10.4. Underground drilling and areas of new and known Resources, SSX and West Mahala mines**
**Source: RPA, 2018**

## 10.2 SURFACE DRILLING

Two phases of surface drilling have been completed by JCG. Compilation of historical geophysical and geochemical data and integration of this data with geology and drilling databases led to the design and subsequent completion of the first phase of surface drilling.

The Phase 1 surface drilling program was completed during the period July 25 to November 23, 2016 and consisted of 31,840 ft (9,705 meters) in 31 surface-based RC drill holes. Nine targets were tested. Four targets (14 holes/17,260 ft) were drilled within the near-term development perimeter of existing underground infrastructure (Mahala Veriscite, SSX Veriscite, Smith Veriscite, SW Steer). Four targets (11 holes/10,895 ft) were drilled to test exploration targets (Lost Mine, Bidart Antiform, Marlboro Canyon Projection, Winters Creek High Grade). The ninth target (6 holes/3,685 ft) was drilled to evaluate an outlying grade shell at the Saval 4 mine. The location of the target areas and holes drilled is shown in Figure 10.5.

Significant intersections from the 2016 surface drill campaign are listed in Table 10.2. High grade mineralization was intersected at the Winters Creek target including a grade of 0.359 oz/st Au over a length of 60 ft in hole WC-552. Relatively long, lower grade intercepts were encountered at the Smith and Mahala Veriscite targets. A single sample returned a value of 0.141 oz/st Au at the Alchem target and hole SC-1395 confirmed the grade shell proximal to the Saval 4 mine.

The Phase 2 surface drilling program started on October 16, 2017 and was completed on December 8, 2017. A total of 8,200 ft was drilled in 15 RC holes. The primary objective of the Phase 2 drilling was to follow up on the results of hole WC-552 drilled in Phase 1 which intersected 0.359 oz/st Au over a length of 60 ft. In addition, targets included intersections with structural trends such as the northwest trending block bounding fault (hole WC-565) and a potential extension of pit mineralization on a northeast structural trend (hole WC-566) (Figure 10.6). Neither hole intersected significant mineralization, and hole WC-566 encountered a 20 ft void and deviated significantly (75 ft) from the target trend on the Hanson Creek unit III–IV contact.

Table 10.3 lists significant intersections from the Phase 2 surface drilling program.

Significant mineralization was intersected in the WC-552 Phase 2 program and the results expanded the footprint of mineralization to the west (hole WC-553) and south (holes WC- 557-559, 562) (Figure 10.7). The distribution of mineralization relative to the Hanson Creek unit III–IV contact which hosts the earlier defined mineralization is somewhat variable. Continued drilling to the northwest and south of the pre-existing grade shell is warranted.

As part of the 2017 surface drilling program, one hole from those recommended by Goldspot (see Section 9.0) was drilled. The hole was located as an extension of the Marlboro Canyon trend and collared in Upper Plate rocks (Figure 10.8). The hole was terminated due to drilling issues before reaching the Hanson Creek unit III – IV contact. The hole was collared and kept open to allow for a core finish through the Hanson Creek unit III – IV contact. The hole as drilled to date has not encountered any significant mineralization.

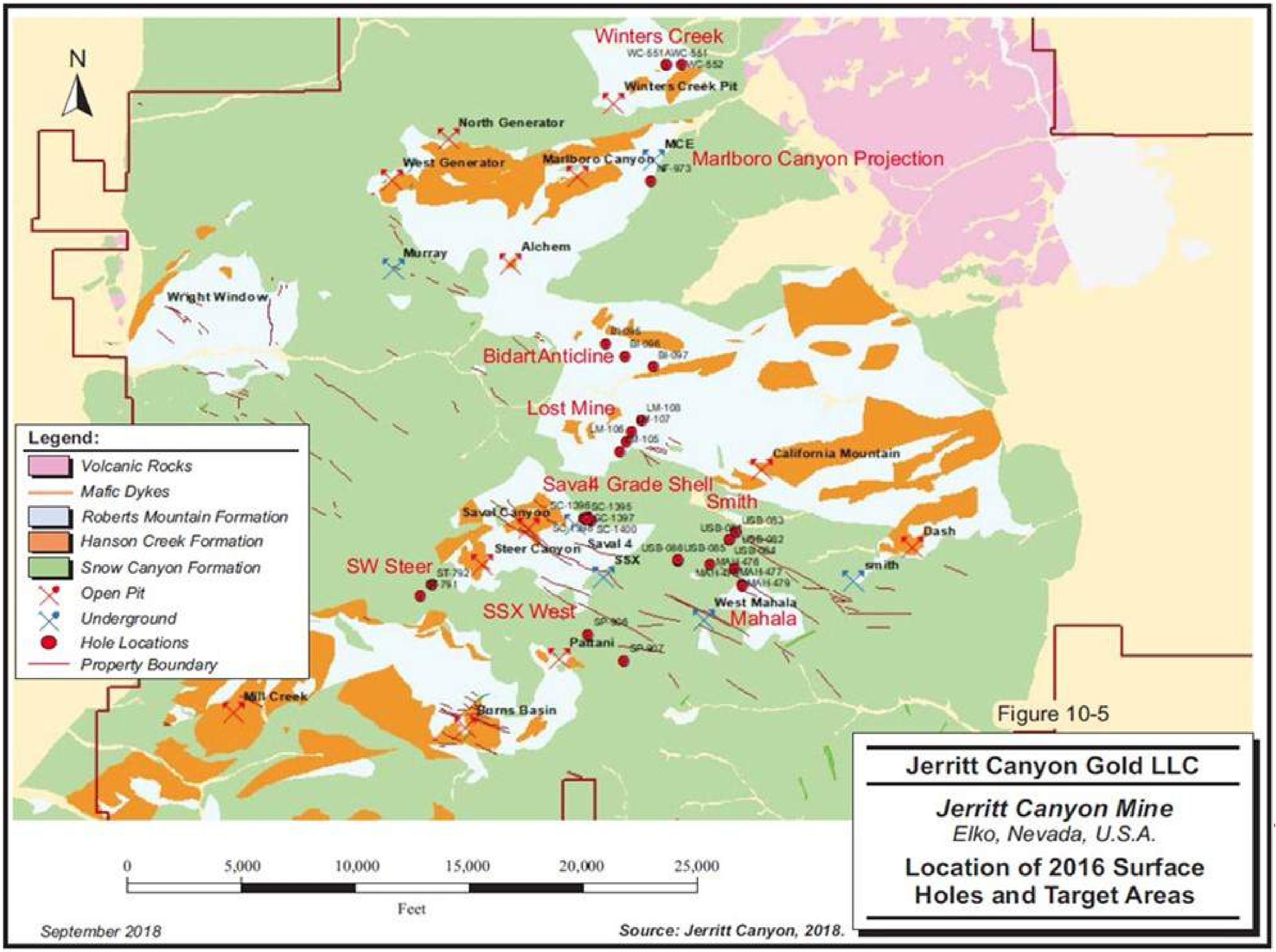


**Figure 10.5. Location of 2016 surface holes and target areas**
**Source: RPA, 2018**

**Table 10.2**
**Significant Assays Reported During 2016 Drill Campaign**
**Jerritt Canyon Gold LLC – Jerritt Canyon Gold Mine**

| Hole ID | Project | From (ft) | To (ft) | Length (ft) | Au (oz/st) | True Vertical Depth (ft) | Approximate Vertical Thickness (ft) | Stratigraphic Position |
|---|---|---|---|---|---|---|---|---|
| WC-552 | Winters Creek | 560 | 620 | 60 | 0.359 | 400 | 43 | SOhc3/SOhc4 contact |
| *incl.* | | *560* | *580* | *20* | *0.399* | | | |
| *incl.* | | *595* | *620* | *25* | *0.522* | | | |
| WC-551A | Winters Creek | 405 | 410 | 5 | 0.141 | 405 | 5 | SOhc3/SOhc4 contact |
| USB-082 | Smith Veriscite | 265 | 315 | 50 | 0.019 | 240 | 45 | Middle DSrm/dike contact |
| MAH-476 | Mahala Veriscite | 1,005 | 1,060 | 55 | 0.022 | 900 | 50 | DSrm/SOhc1 contact |
| MAH-479 | Mahala Veriscite | 515 | 540 | 25 | 0.031 | 505 | 25 | DSrm/SOhc1 contact |
| *incl.* | | *520* | *530* | *10* | *0.052* | | | |
| NF-973 | Alchem | 905 | 910 | 5 | 0.141 | 905 | 5 | SOhc1/SOhc2 contact |
| SC-1395 | Saval 4 | 430 | 500 | 70 | 0.167 | 425 | 70 | SOhc3/SOhc4 contact |
| *incl.* | | *455* | *480* | *25* | *0.396* | | | |

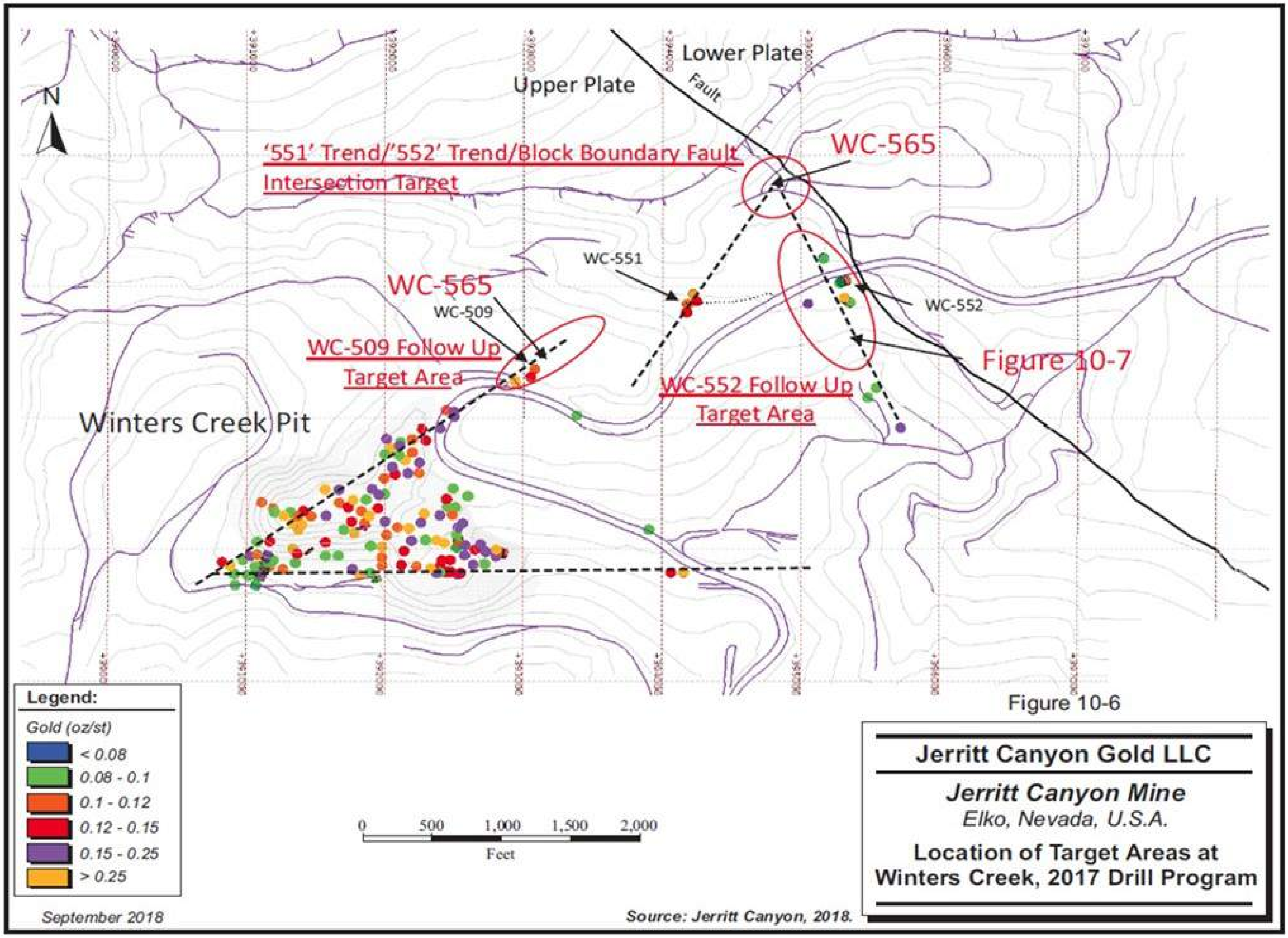


**Figure 10.6. Location of target areas at Winters Creek 2017 drill program**
**Source: RPA, 2018**

**TABLE 10.3**
**SIGNIFICANT ASSAYS REPORTED DURING PHASE 2 DRILL PROGRAM**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Hole ID | From | To | Length | Au | Target |
|---|---|---|---|---|---|
| WC-553 | 440 | 445 | 5 | 0.3 | WC-552 Follow Up |
| WC-554 | no significant assays | | | | WC-552 Follow Up |
| WC-555 | 225 | 230 | 5 | 0.23 | WC-552 Follow Up |
| WC-556 | no significant assays | | | | WC-552 Follow Up |
| WC-557 | 245 | 305 | 60 | 0.165 | WC-552 Follow Up |
| includes | 265 | 295 | 30 | 0.251 | WC-552 Follow Up |
| WC-557 | 415 | 425 | 10 | 0.161 | WC-552 Follow Up |
| WC-558 | 205 | 220 | 15 | 0.138 | WC-552 Follow Up |
| WC-559 | 340 | 360 | 20 | 0.375 | WC-552 Follow Up |
| WC-560 | 280 | 285 | 5 | 0.231 | WC-552 Follow Up |
| WC-560 | 330 | 345 | 15 | 0.229 | WC-552 Follow Up |
| WC-560 | 385 | 405 | 20 | 0.236 | WC-552 Follow Up |
| includes | 385 | 395 | 10 | 0.427 | WC-552 Follow Up |
| WC-561 | no significant assays | | | | WC-552 Follow Up |
| WC-562 | 330 | 380 | 50 | 0.086 | WC-552 Follow Up |
| includes | 360 | 375 | 15 | 0.144 | WC-552 Follow Up |
| WC-563 | no significant assays | | | | WC-552 Follow Up |
| WC-564 | no significant assays | | | | WC-552 Follow Up |
| WC-565 | no significant assays | | | | 551/552 Trend Intersection |
| WC-566 | no significant assays | | | | WC-509 Follow Up |
| GD-012 | no significant assays | | | | Goldspot Greenstone Draw |

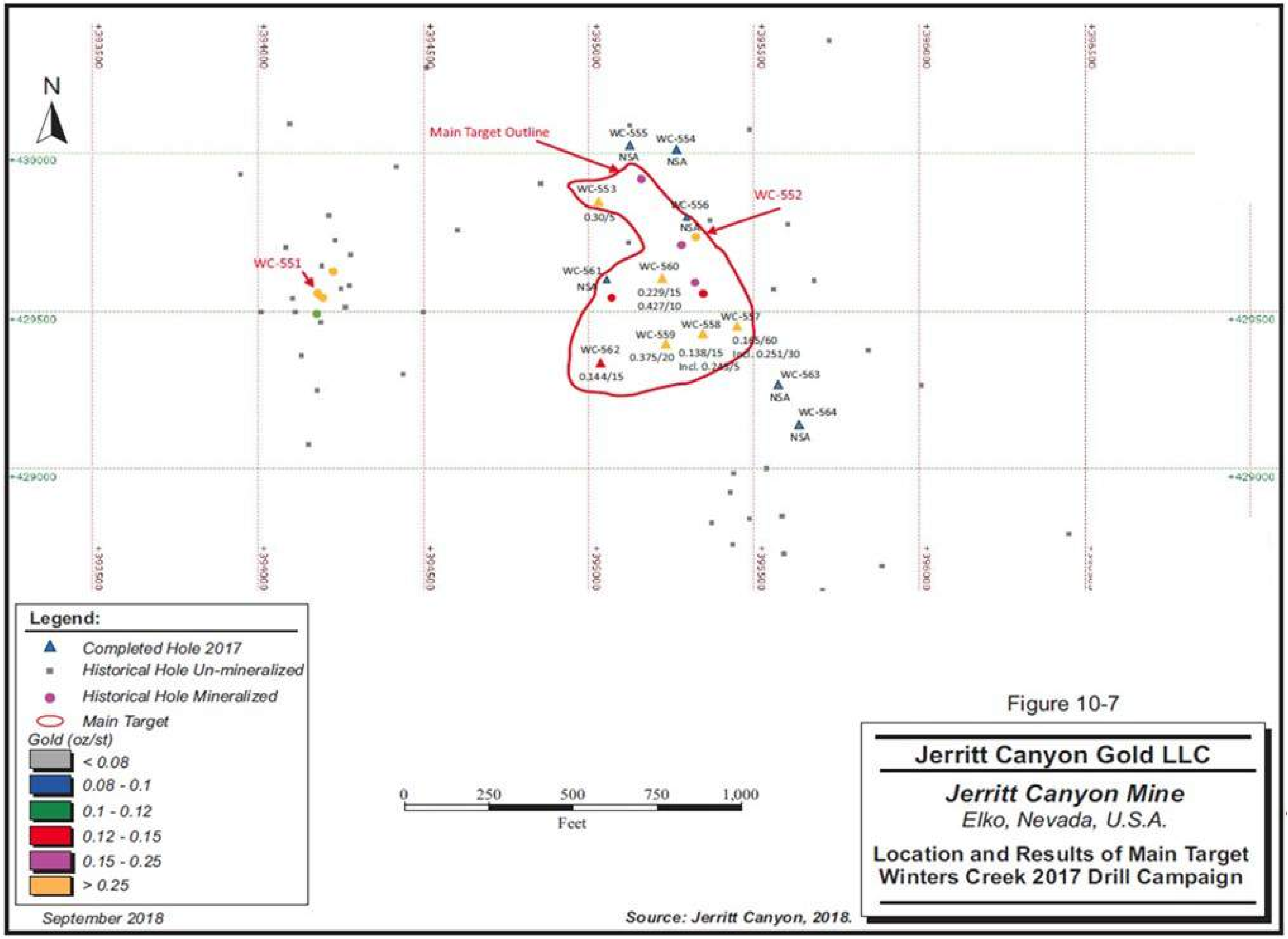


**Figure 10.7. Location and results of main target Winters Creek 2017 drill campaign**
**Source: RPA, 2018**

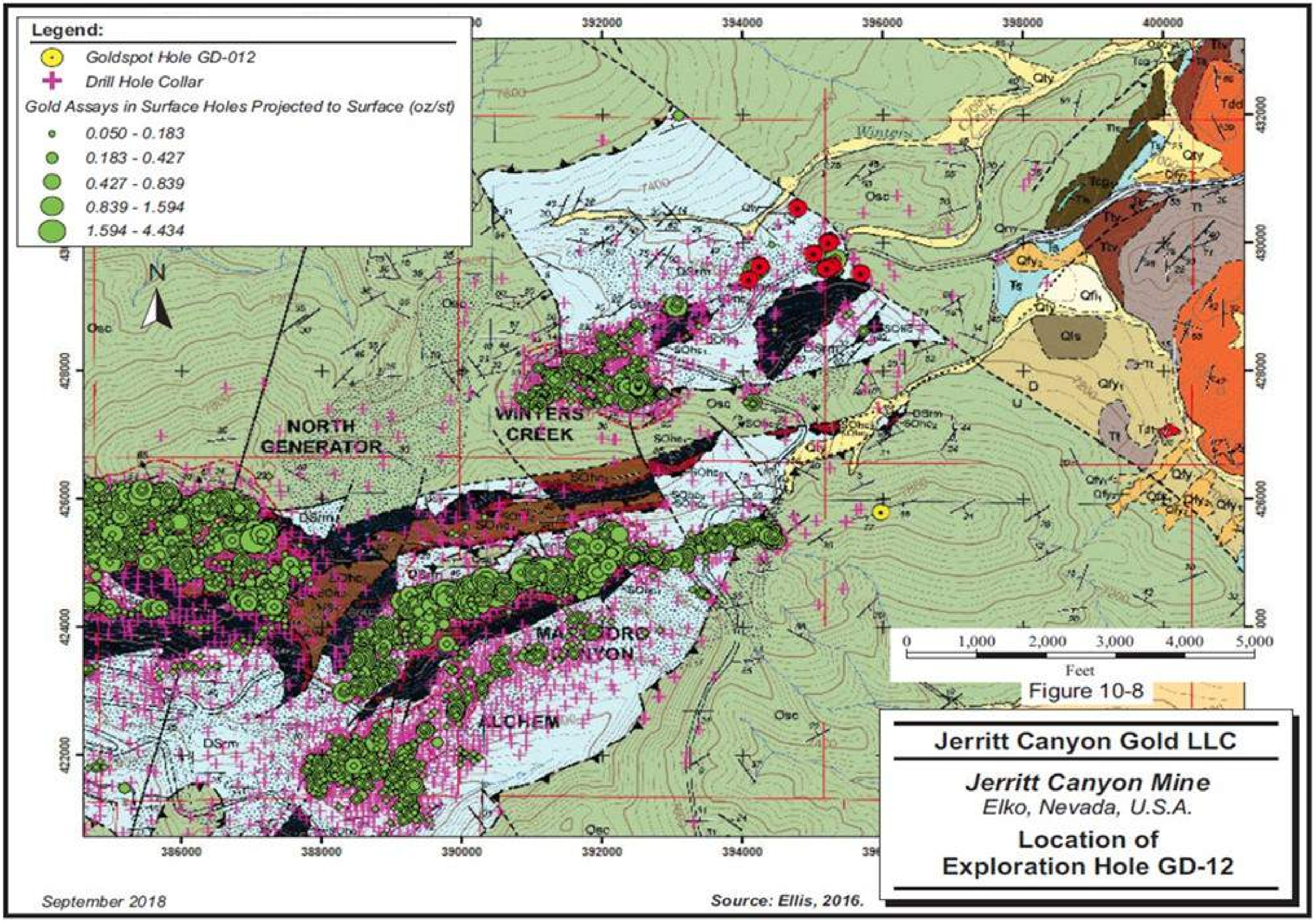


**Figure 10.8. Location of Exploration Hole GD-12**
**Source: RPA, 2018**

# 11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

Historically, drill hole samples have been analyzed at the Jerritt Canyon (JC) assay laboratory as well as independent commercial laboratories such as ALS, Bureau Veritas Mineral Laboratories (BVL), and American Assay Laboratory (AAL). *Prior to about 2000, nearly all surface exploration drill hole samples were assayed by commercial labs (AAL and Chemex, now ALS)* [*Behre Dolbear, 2020*], while most underground samples were analyzed by the JC laboratory. Since acquisition of the property in 2015, JCG has generally used the JC assay laboratory, with BVL and AAL used for analysis of samples from 2016 surface drilling and part of 2015-2016 underground drilling. The discussion below details the procedures and protocols used to collect and store the data for the Jerritt Canyon property. The quality assurance and quality control (QA/QC) programs are also discussed below.

## 11.1 SAMPLE COLLECTION

Sample types used on a routine basis to support both the operation and for exploration include:

- Underground RC (Cubex) drill sampling;
- Underground sludge sampling;
- Muck (windrow sampling);
- Underground core drilling sampling; and
- Surface RC drill sampling.

### 11.1.1 Cubex and Sludge Samples

Underground Cubex samples five feet in length are collected starting at the collar. The samples are collected into barcoded sample bags which are placed in a five gallon plastic bucket installed under the cyclone on the drill. Each bag has the hole ID and the sample interval written on it with permanent marker. On completion of the hole, the driller completes a submittal form which includes hole ID, barcode number, and from-to sample interval for each sample. The samples and the submittal form are dispatched from the underground drill site to the JC assay laboratory. At the assay laboratory, the samples are unloaded onto trays and JCG technicians check the sample bag hole ID and intervals against the submittal sheet. The collection, recording, and handling of sludge samples is the same as that for the Cubex samples, however, the sludge samples are of higher priority for analysis to support the on-going mining operation.

### 11.1.2 Muck Sampling

Production muck is transported from underground and laid out in windrows in a specified area adjacent to the respective portal. Each round comprises one windrow and consists of several piles hauled by 20 ton haul trucks. JCG has a written procedure for the handling and sampling of windrows.

- The location of each windrow pile is marked on the map in the field to help track the origin of the muck.
- Each windrow pile is marked in the field with paint with a unique location identification (ID) number.
- A lath with the unique windrow ID number is placed in front of each windrow pile with the zone, heading, cut, date mucked, and the number of samples in the windrow indicated.

- Muck characterization data is documented in a specially designed "Underground Muck Windrow Ore Control Table", described below, which is periodically updated by the JCG Geology Department.
- One sample from two piles (representing approximately 40 wet tons) is taken according to the Windrow Grade Control Sampling Protocol, described below.
- The samples are dispatched to the JC assay laboratory by a designated person from either JCG or SMD.
- Once the assays are finalized and received, the ore-waste characterization for each windrow pile is determined and colored flagging is tied to the labelled lathe using the following flag coloring designations: red flagging for high grade ore, yellow flagging for low grade ore; and blue flagging for waste with grades.
- Once each windrow has been marked in the field with colored flagging as ore or waste, the JCG surface operations group is notified that hauling to the run of mine (ROM) area may begin. Under certain situations, the JCG Geology Department may allow certain windrow piles to be hauled to the ROM area without having received final assays, which is referred to as "Released Assays Pending" (or RAP). Communication between SMD, the JCG Geology Department, and surface operations must be clear when a RAP situation is approved so appropriate tracking and hauling of the materials is correctly performed. Only the JCG geologist can approve RAP situations. When RAP situations are approved by the JCG geologist, the windrow pile must be marked and identified as such on the Underground Muck Windrow Ore Control Table.

The Underground Muck Windrow Ore Control Table contains the following statistics relating to each windrow pile:

- the date mapped, which is the actual date the windrow is located on the surface laydown area and the date samples are collected;
- windrow location number that includes a predefined Mine abbreviation prefix (two to four letter) followed by a two-number year designation (2018 = 18), followed by a number series that should be assigned in consecutive order from low to high;
- zone, heading, and cut from which the mined muck material originates;
- ore or waste designation (high, low, or waste as defined above);
- estimated tons mucked determined by the number of piles in the surface laydown area multiplied by the truck ton factor of 18.2 ft3/ton;
- the final Au assay grades from the JC assay laboratory;
- the approximate hauled ounces determined by multiplying the average Au grade by the estimated tons mucked;
- the average moisture content determined by the JC assay laboratory from the final assay analysis;
- pile count which is defined by the total number of piles associated with each windrow;
- the number of samples taken, which is the actual number of samples collected from each windrow pile; and
- the dates mucked, flagged, and hauled.

The Windrow Grade Control Sampling Protocol includes one sample for every two windrow piles (representing approximately 40 wet tons) as follows:

- The sample is collected midway up each pile at equally spaced points around each pile.
- The desired "representative sample" weight for each bag submitted to the JC assay laboratory is twelve pounds with approximately one and one-half pounds collected from each sampling point.
- The sampled material from each pile must be placed in a properly labelled sample bag that includes the muck date, the zone and heading from which the sample is taken, and a unique barcode identification number.

- The sampled muck material collected in each sample contains equal amounts of coarse materials (defined as material greater than 2 mm and less than 4 in. in diameter) and fine materials (material <2 mm) to achieve the targeted final sample weight of 12 lb. Individual rock clasts placed in each muck sample must be less than 4 in. in diameter in order to minimize sample size bias.
- All of the sample bags are placed at the end of the windrow after they have been collected.
- After all the samples from the windrow have been collected, all of the sample numbers are marked on the lathe.

On completion of the sampling of the windrow, or several windrows over a specified period, the samples are delivered to the JC assay laboratory. The Windrow Ore Control Table is submitted to the JCG database administrator.

### 11.1.3 Underground Core Sampling

At the end of each 12-hour shift, the drill contractor transports core from the underground rig to the JC core logging facility. JCG processes, logs, and samples core in an industry standard manner. Prior to any logging, the core is aligned, and recovery and rock quality designation (RQD) are recorded. Sample intervals are based on geology and mineralogy and are typically three feet long. The geologist indicates the sample limits using a grease pencil and writing the sample number on the core at the start of the sample interval. Where the core is geologically and mineralogically uniform over extended lengths, samples are designated by the run length blocks in which case the samples are five feet long. The logging geologist provides the core technician with a sample sheet listing sample numbers and sample intervals. The core is cut in half using a core saw equipped with a diamond blade. Half of the core is placed in a sample bag, and the other half of the core is returned to the core box. As per the underground Cubex drilling procedure, the sample bags have a barcode and the hole ID and sample interval are written on the sample bag. Once a day, usually at the end of day shift, the core samples are delivered to the JC assay laboratory. The submittal sheet is emailed to the laboratory and to the database administrator.

### 11.1.4 Surface RC Drilling

The sampling protocol employed by JCG for the surface RC exploration drilling is industry standard. Five foot samples are collected using a cyclone/splitter apparatus. The samples are placed in barcoded bags with the hole ID and sample interval written on the bag. The sample bags are labelled and provided to the drill by the supervising geologist. On completion of the hole, the drill contractor delivers the samples to the JC assay laboratory. The cut sheet containing hole ID, barcode numbers, and sample intervals is provided to the JCG database administrator by the supervising geologist.

## 11.2 SAMPLE PREPARATION AND ANALYSES

All underground Cubex and sludge samples as well as windrow samples are analyzed at the JC assay laboratory. Samples for the 2016 surface RC drill program were dominantly analyzed at BVL with the last two holes analyzed at AAL. Samples from the underground drilling program from October 2015 to December 2016 were analyzed at BVL, AAL, and the JC assay laboratory. With the resumption of underground drilling in May 2017, the samples have been analyzed at the JC assay laboratory, as well as the samples for the 2017 surface RC program.

### 11.2.1 Jerritt Canyon Assay Laboratory

The JC assay laboratory is owned and operated by JCG. It is located adjacent to the mill, engineering office, and administration building. Upon arrival at the laboratory, the samples are unloaded by the ore control technician who puts the samples in the appropriate order on the loading carts. The sample preparation technician reviews the samples against the sample submittal sheets to ensure that the records match the samples. Once checked, the samples are logged into the Laboratory Information Management System (LIMS). If any additional tests are required, such as moisture determination or LECO analysis, these are added at this stage. The labels and fire assay batch sheets are printed out upon entry of the samples into the system.

Once the samples are scanned or logged into the system, they are placed in the Grieve drying oven in the exact same order they were logged in. Drying time is dependent on water content, and can be up to eight hours. Once the samples are dried, they are unloaded onto the sample carts. If a dry weight is needed for moisture determination, this weight is taken at this stage.

The entire sample is crushed to 50% passing 10 mesh through the Terminator TM Crusher. The entire sample is then split through the Jones Riffle splitter to obtain a 200g split. The 200g split is put into the manila envelope with the appropriate sample ID on the tag and then placed in a box within a respective fire assay batch. The remaining 95% of the sample is returned to its original bag and stored until an acceptable assay is released.

The 200g split is pulverized to 95% passing 150 mesh using a TM ring and puck pulverizer. Once an entire batch is pulverized, it is weighed up for fire assay. All of the underground samples are assayed at ½ assay ton, approximately 14.58g. The weigh up technician opens the batch and checks the sample envelope IDs against the LIMS sample IDs to ensure each sample is weighed into the correct spot. The sample, once weighed, is put into a small coin envelope and placed in a box to be taken to fire assay.

Prior to fire assay, the technician checks the batch paperwork included with the samples in the coin envelopes to ensure the order is maintained. The samples are then fluxed, fused, slagged, and cupelled.

Once the samples are cupelled, the beads are put into labelled culture tubes with the corresponding paperwork and moved to the wet laboratory for Aqua Regia Digestion. This method is used for quantitative determination of gold in geological and metallurgical samples by Atomic Absorption (AA).

After the digestion is complete, the samples are analyzed for gold by AA. The results of the analysis are entered into LIMS where a weight-based value of gold (oz/st) is calculated, and standards are used to ensure quality of the sets. Then the sample gold analysis results are sent out through automatic email notifications to the operation team.

### 11.2.2 Bureau Veritas Minerals Laboratory

Bureau Veritas Mineral Laboratories (BVL), previously Inspectorate America Corporation, is located in Sparks, Nevada. BVL is a commercial laboratory that is independent of JCG. The laboratory is widely used by the mining and exploration industry in the western USA. The sample handling, preparation, and assaying is industry standard. The samples, when received, are laid out in order, weighed, dried, and entered into the LIMS. Sample preparation is by the BVL procedure code PRP70-25, which includes crushing to 70% of less than 2 mm and pulverizing a 250g split to 85% passing 200 mesh. A 30g split of the pulverized sample is taken for fire assay. Fire assay is by the BVL procedure code FA430 which is Au determination by AA and by BVL procedure code FA530, which is a gravimetric finish. The samples are barcoded at the crusher stage and tracked through all steps of the analysis. Results are reported to JCG via a CSV data file sand hard copy certificate. BVL is ISO 9001 accredited.

### 11.2.3 American Assay Laboratories, Inc.

The American Assay Laboratories (AAL) laboratory used by JCG is located in Sparks, Nevada. AAL is a commercial laboratory that is independent of JCG. Samples received by AAL are laid out in order and checked against a cut sheet or laboratory submittal form. The samples are dried and entered into the LIMS. Sample preparation is by

AAL procedure code BRPP2KG. AAL uses a two-stage crush. The primary crush is by a jaw crusher reducing the sample to less than 6 mesh and the secondary is a roll crush reducing the sample to 80% less than 10 mesh. A 300g split is taken which is pulverized to 85% less than 150 mesh. Analysis is by AAL procedure code FA-PB30-ICP, which is fire assay with an Inductively Coupled Plasma (ICP) determination and by GRAVAu30, which is fire assay followed by a gravimetric finish. AAL is ISO 17025 and IAS accredited and participates in various testing programs including CANMET, Geostats, SMA, and IOAG.

## 11.3 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Every set that is subject to fire assay includes an in-house blank to check for carryover and an in-house standard to monitor the process. The Geology Department supplies blind standards for sets of samples delivered to the laboratory called (J) samples. In addition to these QA/QC checks, the laboratory also runs blind (V) standards not known to the assayers.

All QA/QC reference materials are purchased and certified. The standard deviation is supplied by Rock Labs Certified Reference Material. When new reference material is purchased, it is incorporated into the LIMS so that when a standard is high or low, the LIMS notifies the laboratory before the results are sent out.

In RPA's opinion, the sample preparation, analysis, and security procedures at Jerritt Canyon are adequate for use in the estimation of Mineral Resources.

# 12.0 DATA VERIFICATION

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

## 12.1 HISTORICAL DATABASE VERIFICATIONS

As of December 31, 2017, the underground drill hole database contains 47,075 drill hole entries and the surface database contains 15,090 entries. The databases represent approximately 37 years of exploration and almost continuous mining. Over the years, a number of evaluations, resource/reserve estimates, and audits have been carried out on the property. In more recent years, the property has been the subject of two NI 43-101 Technical Reports (Odell, et al., 2012 and Johnson, et al., 2013). A summary of data verification work completed on the property provided below is derived from archived reports located in the JCG site geology office.

In 1993, Behre Dolbear & Company Inc. (Behre Dolbear) conducted an audit of the Independence Mining February 4, 1993 open pit reserve estimation and methodology.

The results of this audit are as follows:

- Drilling and sampling were conducted in accordance with industry standards at the time.
- Surface core – rotary RC drill hole pair comparison studies for the open pit resources and reserves were found to be acceptable for production drilling.
- Geological factors were well understood at the deposits by the project geologists and alteration and structural components were reliably and consistently identified.
- Several cross-sections generated by Behre Dolbear staff found no significant discrepancies with the Independent Mining project geologist's computer and hand drawn cross-sections for the Burns Basin, Mill Creek, Alchem, Winters Creek, California Mountain, and Saval/Steer open pit reserves.

In 2000, Mineral Resources Development Inc. (MRDI) conducted a review and audit of resources and reserves of the Jerritt Canyon operation. MRDI reviewed the database used at the Murray and SSX mines and did not find any significant errors or problems. Their review of the spreadsheets used for resource and reserve tabulation found no errors.

In 2003, PAH reviewed a portion of the database as part of its due diligence review of the Jerritt Canyon operations. Checks of several records of the SSX mine database performed against original logs confirmed the assays values and geological-geotechnical codes. Data validation checks identified a few errors in the drill hole database, such as duplicate holes and missing intervals in downhole surveys which were then corrected.

In 2004 and 2005, PAH conducted reviews of Jerritt Canyon resources and reserves, during which they performed checks on several drill hole records and original assay certificates against the database. Their focus was new resource and reserve areas. Data validation identified minor errors in 2005, which were then corrected, and no errors in 2004.

In 2006, SRK conducted data validation checks as part of its review of the Jerritt Canyon resources and reserves. The database in new reserve areas such as Starvation Canyon and West Dash were checked against the original logs and assay certificates and no errors were found. Spot checks were also performed on the resource and reserve tables for tons and grade and no errors were found.

In 2007, SRK reviewed the Jerritt Canyon assay QA/QC data and found the results to be within industry standards.

From 2007 to August of 2008, geological data and assay data were analyzed by geologists using MineSight™ software and acQuire™. The geological block models for both production and resource were generated in MineSight™ and converted into the Vulcan™ software environment for use primarily by mine engineers.

In 2008, all historic drill logs, assay certificates, geology maps, and other diagrams were moved to the administration building on the Jerritt Canyon mine site. The logs are stored in the Jerritt Drill Hole Library and the maps and other diagrams in a number of flat filers in the database administrator's office.

From February 2010 to March 2011, the acQuire™ drill hole databases were scrutinized and corrections completed. The numerous edits are all documented in a January 16, 2011 memorandum entitled "Summary of the Jerritt geological database work," which resides on the Mine site server.

In May 2010, a drill hole data audit was performed on the 2008 to 2010 drill hole assay data. The drill hole data stored in acQuire™ for certain drill hole records were compared with original assay certificates from the JC assay laboratory and the commercial laboratories used. A total of 16% of the 2008 and 2010 total assay records were reviewed for this data audit. The details of this audit, including corrections required, are stored on the computer server at the Mine and have been reported in previous NI 43-101 Technical Reports. In this audit, only 132 out of the 11,413 drill hole assay records reviewed (1.2%) for 2008 to 2010 were found to contain different assay values in the acQuire™ database when compared with the original assay certificate. Most of these errors were likely the result of:

- Assay reruns for drill holes that were analyzed at the JC assay laboratory, which were not documented or copied into the paper drill hole files, or
- Data import errors related to data that was occasionally hand-entered.

No conflicting assay data values were found for the 2010 underground exploration (diamond drill hole) assays conducted by ALS. A total of 4% of the reviewed 2008 underground exploration drill holes from the Smith mine contained no original assay certificate and were later requested from the assay laboratories and imported into acQuire™.

In January 2012, the drilling data from January 2011 to December 31, 2011 was validated. This exercise identified a number of issues with data entry into acQuire™ from the commercial laboratory used at the time and the JC assay laboratory. In addition, SMD had maintained a database independently which was found to differ from the acQuire™ database. The issues were resolved, and the Vulcan™ database was verified and accepted for the resource estimation completed and effective December 31, 2011.

In January 2013, Queenstake undertook an audit of the database to support the December 31, 2012 mineral resource and reserve estimates. This work included evaluation of assay results from underground drilling between June 18, 2011 and December 31, 2012, and from surface drilling between July 18, 2011 and December 21, 2011. This audit was particularly rigorous and included verification of the acQuire™ assay data against the laboratory source data and verification of sample intervals against original cut sheets for sample intervals and sample numbers. The verification also included a check of the ISIS database to be used in Vulcan™ for resource modelling against the acQuire™ database thereby validating the acQuire™ output routines. The verification also included a check on the rock type, formations, and intervals. It was concluded by the Qualified Persons that the data was acceptable for the December 31, 2012 resource and reserve estimates (Odell, et al., 2013).

## 12.2 RECENT DATA VERIFICATION

Recent data verification was carried out by RPA (SSX and West Mahala) and JCG (Smith and Saval 4) on a portion of the database including underground drilling by JCG.

The collar, survey, and assay tables were imported from acQuire™ into Leapfrog™. The following errors and warning were reported:

- 21 holes with no downhole survey data;
- 7 warnings for duplicate collars and surveys;
- 17 holes with no sample data; and
- 117 samples contained in seven re-drilled holes.

The database was further queried, and it was determined that the holes with no downhole surveys are holes effectively in progress awaiting final survey locations. The duplicate collar and survey errors are of a similar nature, as the record with hole information used for drill planning has not been removed from the database after the hole was completed and surveyed.

The assay table was evaluated for overlap and gaps in the from-to intervals. Seven gaps were found. The logs for these holes were queried and, in all cases, it was determined that the gaps were consistent with the logs where the gap interval was recorded as "no sample." There were no overlaps detected.

The from-to intervals for 420 samples from three drill logs were checked against the database. No errors were found.

The database entries for gold in 836 samples were compared against original assay certificates. The samples were completed on core at AAL and the JCG assay laboratory. No errors were found.

A total of 40,040 ft in 46 surface RC holes have been completed by JCG on the property in two drill campaigns; one in 2016 and one in 2017. For the 2016 drilling, assays were completed at BVL and AAL. For the 2017 surface drilling, all assays were completed by the JCG assay laboratory. The JCG surface holes were extracted from the acQuire™ database and imported into Leapfrog™. The only issue identified in the database was that the 2016 holes had duplicate survey entries at 0 downhole depth. One entry was a final result based on the downhole survey and the other was a legacy entry used for drill planning.

The from-to sample intervals were evaluated for gaps and overlap, and none were found. A total of 485 sample and assay entries in the database were compared with the original assay certificates and no errors were found.

RPA is of the opinion that database verification procedures for Jerritt Canyon comply with industry standards and are adequate for the purposes of Mineral Resource estimation.

# 13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

Mining and processing by the Freeport-FMC JV commenced at Jerritt Canyon in 1981. The initial processing facility processed mildly refractory, carbonaceous, preg-robbing ore. Alkaline chlorination was used to passivate the carbonaceous constituents of the ore to reduce preg-robbing and cyanidation to extract the gold. The chlorination facility continued operation until 1997 (Marsden, 2006).

In 1989, operation of a whole ore roaster commenced to treat double-refractory ore that contains higher concentrations of sulphide sulphur in addition to the organic carbon. During the life of the operation, numerous metallurgical studies have been completed, however, current operating practice relies on historical operating data to support recovery estimates and anticipated future operating performance. The current Life of Mine (LOM) plan estimates a flat gold recovery of 85% independent of the changes in the gold feed grade. A previous Technical Report (Johnson, et al., 2013) reported a historic gold recovery equation for lower grade open pit mining to be:

**Au recovery = 0.9042x + 0.75169 with a cut-off grade of 0.053 oz/st Au**

In order to verify the previous equation, RPA completed an independent analysis using the historic production from all mines. The data is provided in Table 13.1.

**TABLE 13.1**
**ANNUAL MILL PRODUCTION DATA – 1981-2017**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Year | Tons Processed | Head Grade (oz/st Au) | Contained Gold (oz) | Au Recovery (%) | Production (oz Au) |
|---|---|---|---|---|---|
| 1981 | 333,768 | 0.080 | 26,701 | 87.0 | 23,000 |
| 1982 | 1,241,940 | 0.180 | 223,549 | 87.0 | 196,100 |
| 1983 | 1,093,200 | 0.277 | 302,816 | 86.5 | 261,900 |
| 1984 | 1,206,600 | 0.220 | 265,452 | 91.2 | 243,100 |
| 1985 | 1,284,500 | 0.220 | 282,590 | 89.2 | 255,400 |
| 1986 | 1,339,200 | 0.227 | 303,998 | 87.4 | 269,600 |
| 1987 | 1,512,400 | 0.215 | 325,166 | 91.8 | 315,900 |
| 1988 | 1,574,500 | 0.212 | 333,794 | 91.5 | 310,100 |
| 1989 | 1,825,800 | 0.178 | 324,992 | 89.8 | 236,700 |
| 1990 | 2,513,500 | 0.148 | 371,998 | 88.0 | 329,800 |
| 1991 | 2,882,200 | 0.147 | 423,683 | 88.7 | 374,400 |
| 1992 | 2,952,120 | 0.132 | 389,680 | 89.3 | 353,300 |
| 1993 | 3,024,390 | 0.126 | 381,073 | 89.6 | 340,200 |
| 1994 | 3,006,870 | 0.122 | 366,838 | 85.6 | 323,400 |
| 1995 | 2,945,915 | 0.129 | 380,023 | 86.1 | 327,900 |
| 1996 | 2,667,593 | 0.130 | 346,787 | 88.0 | 310,000 |
| 1997 | 1,539,561 | 0.220 | 338,703 | 91.0 | 320,000 |
| 1998 | 1,484,445 | 0.250 | 371,111 | 91.0 | 350,000 |
| 1999 | 1,609,374 | 0.250 | 402,344 | 91.0 | 363,333 |

**TABLE 13.1**
**ANNUAL MILL PRODUCTION DATA – 1981-2017**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Year | Tons Processed | Head Grade (oz/st Au) | Contained Gold (oz) | Au Recovery (%) | Production (oz Au) |
|---|---|---|---|---|---|
| 2000 | 1,499,143 | 0.240 | 359,794 | 90.0 | 316,667 |
| 2001 | 1,469,000 | 0.310 | 455,390 | 89.2 | 403,000 |
| 2002 | 1,467,000 | 0.260 | 381,420 | 87.9 | 339,000 |
| 2003 | 1,496,441 | 0.225 | 336,699 | 88.3 | 302,096 |
| 2004 | 1,305,833 | 0.210 | 274,225 | 86.7 | 243,333 |
| 2005 | 1,106,937 | 0.220 | 243,526 | 86.6 | 204,091 |
| 2006 | 973,593 | 0.210 | 204,455 | 86.2 | 169,851 |
| 2007 | 968,130 | 0.206 | 199,435 | 88.2 | 175,646 |
| 2008 | 338,350 | 0.160 | 54,136 | 87.3 | 44,732 |
| 2009 | NP | NP | 0 | 86.3 | 9,770 |
| 2010 | 599,555 | 0.123 | 73,745 | 88.2 | 65,104 |
| 2011 | 628,418 | 0.142 | 89,235 | 85.8 | 67,748 |
| 2012 | 978,262 | 0.130 | 127,174 | 82.7 | 105,626 |
| 2013 | 1,084,131 | 0.154 | 166,956 | 85.5 | 139,556 |
| 2014 | 1,106,524 | 0.166 | 183,683 | 87.8 | 160,451 |
| 2015 | 1,158,585 | 0.173 | 200,049 | 85.5 | 172,591 |
| 2016 | 1,191,674 | 0.144 | 171,333 | 85.4 | 140,989 |
| 2017 | 1,143,530 | 0.135 | 154,187 | 83.9 | 129,335 |
| | | | | | |
| **Total** | **54,552,982** | **0.172** | **9,409,916** | **88.7** | **8,693,719** |

Figure 13.1 compares the previously reported equation with RPA graphs of the historical data.

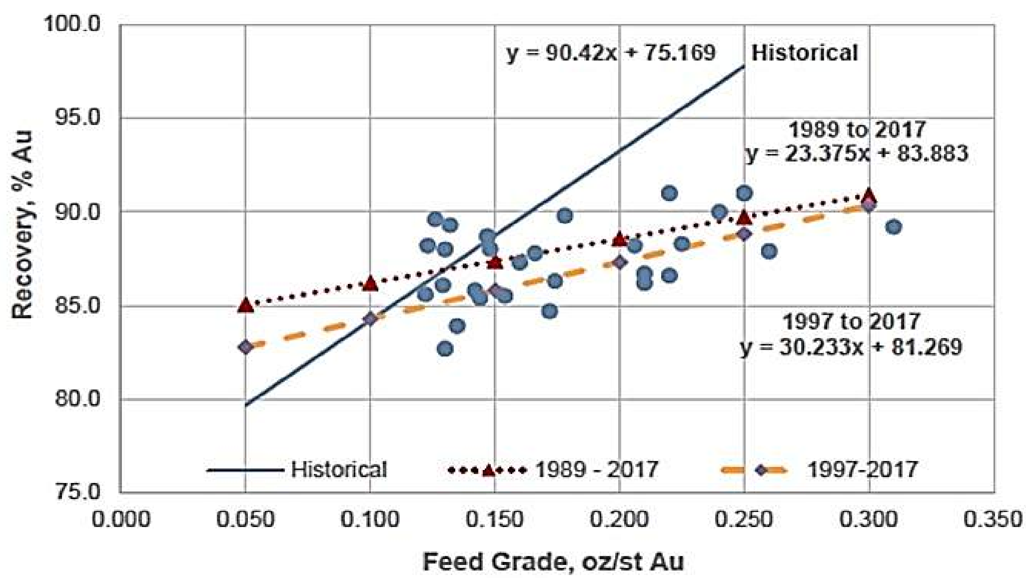


**Figure 13.1. Comparison of recovery estimates – 1998-2017**
**Source: RPA, 2018**

The graph indicates that the recoveries estimated using the correlations between gold feed grade and gold recovery using the operating data, which includes feed from numerous open pit and underground mines, results in lower gold recovery than that estimated using the previously reported equation. Two estimates are shown on the graph because the dataset using the data from 1989 when the roaster started up to 2017 showed a lower correlation than the data starting from 1997 after the chlorination plant shut down.

In general, gold recovery for carbonaceous refractory ores, such as the ore processed at Jerritt Canyon, is a function of total organic carbon (TOC) as well as head grade. RPA was not able to evaluate the impact of TOC because the data was not available.

RPA completed a similar analysis using the monthly operating data since 2015 when JCG started operating the Mine. The data is presented in Table 13.2 and graphed in Figure 13.2.

**TABLE 13.2**
**MONTHLY MILL PRODUCTION DATA – 2015-2017**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Year | Month | Tons | Grade (oz/st Au) | Recovery (%) |
|---|---|---|---|---|
| 2015 | July | 94,680 | 0.180 | 85.5 |
| | Aug | 41,363 | 0.198 | 87.9 |
| | Sept | 89,280 | 0.194 | 88.1 |
| | Oct | 132,547 | 0.172 | 86.2 |
| | Nov | 113,967 | 0.155 | 85.3 |
| | Dec | 89,761 | 0.161 | 86.2 |
| | **Total** | **563,398** | **0.174** | **86.3** |
| | | | | |
| 2016 | Jan | 76,677 | 0.147 | 87.2 |
| | Feb | 77,285 | 0.175 | 86.6 |
| | Mar | 114,458 | 0.169 | 86.8 |
| | Apr | 100,067 | 0.152 | 86.8 |
| | May | 115,411 | 0.137 | 86.2 |
| | Jun | 104,711 | 0.130 | 86.2 |
| | July | 79,022 | 0.141 | 85.5 |
| | Aug | 129,872 | 0.137 | 84.5 |
| | Sep | 112,253 | 0.126 | 83.2 |
| | Oct | 129,771 | 0.127 | 84.7 |
| | Nov | 46,777 | 0.170 | 82.7 |
| | Dec | 105,370 | 0.140 | 84.3 |
| | **Total** | **1,191,674** | **0.144** | **85.4** |
| | | | | |

| TABLE 13.2<br>MONTHLY MILL PRODUCTION DATA – 2015-2017<br>JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE | | | | |
|---|---|---|---|---|
| **Year** | **Month** | **Tons** | **Grade (oz/st Au)** | **Recovery (%)** |
| 2017 | Jan | 91,328 | 0.137 | 84.0 |
| | Feb | 82,890 | 0.133 | 84.7 |
| | Mar | 103,518 | 0.137 | 85.1 |
| | Apr | 118,848 | 0.140 | 86.2 |
| | May | 94,664 | 0.119 | 82.3 |
| | Jun | 49,851 | 0.111 | 82.7 |
| | July | 102,741 | 0.137 | 85.4 |
| | Aug | 92,000 | 0.136 | 83.0 |
| | Sept | 111,996 | 0.126 | 81.7 |
| | Oct | 84,467 | 0.147 | 83.6 |
| | Nov | 99,066 | 0.148 | 83.7 |
| | Dec | 112,161 | 0.136 | 83.6 |
| | **Total** | **1,143,530** | **0.135** | **83.9** |

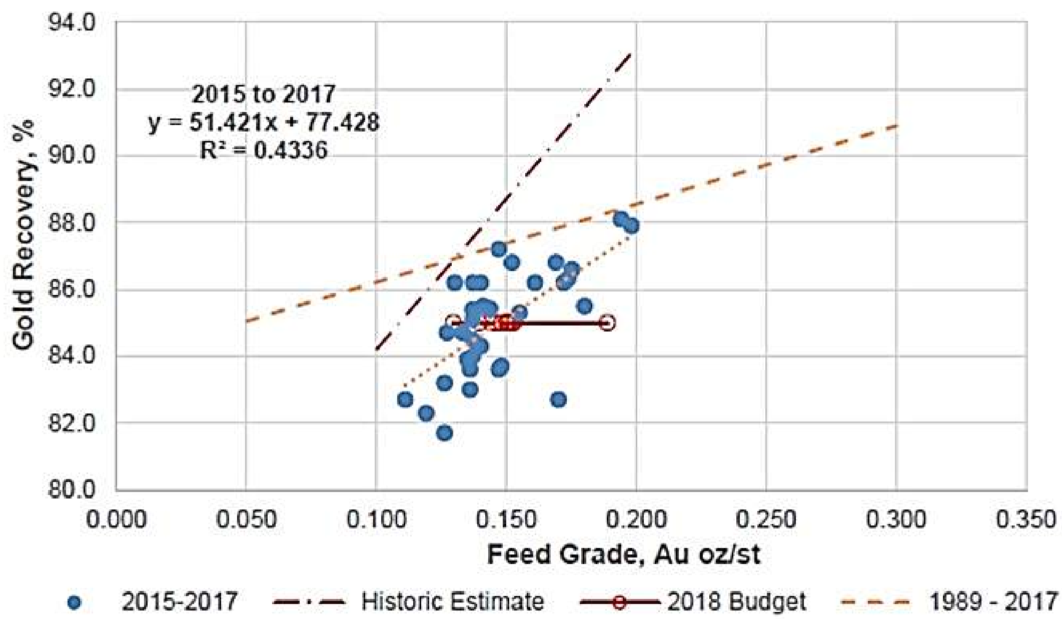


**Figure 13.2. Comparison of recovery estimates – 2015-2017**
**Source: RPA, 2018**

The recovery estimated by RPA using the more recent data from 2015 to 2017 is more dependent upon the gold feed grade than the recovery estimated by RPA using the data from 1989 to 2017.

The data indicates that while there are differences in what could be considered the most accurate method for estimating gold recovery, it is apparent that using a single recovery estimate that is independent of the feed grade to the plant is not accurate. Based on experience with similar mining operations, RPA is of the opinion that accurate recovery estimates are often dependent on the ore type or the source of the ore (*i.e.*, different mines or mining areas). Other operations in Nevada have also determined that accurate gold recovery estimates are related not only to the gold feed grade but also to the arsenic and/or TOC concentrations of the ore in some cases.

RPA recommends that JCG complete metallurgical testing of samples from the various mining sources that represent the current and future feed to the processing plant in order to develop more accurate estimates for future gold recovery and to understand the metallurgical response of the different ore types. Since processing at Jerritt Canyon is primarily done by directly feeding ore from the mine to the plant with little ability to blend, understanding the relationship between TOC concentration and recovery and attaining plant stability should improve gold recovery.

## 14.0 MINERAL RESOURCE ESTIMATES

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

## 14.1 SUMMARY

Since the completion of the 2013 Mineral Resource estimate, JCG has been carrying out in- fill drilling programs in underground mines. These drilling programs have resulted in a total of 3,202 additional drill holes for a total length of approximately 498,820 ft in Zones 1-9 of the SSX-West Mahala deposit. There has been a total of 1,242,724 ft in-fill underground drilling and 31,840 ft of in-fill surface drilling since 2012, in all the properties of the Mine. This new drill hole information has resulted in the creation of a number of additional mineralized wireframe models for underground mines.

The technical work for this report was initiated in May 2017. Wireframe modelling for the underground SSX-West Mahala deposit and Saval 4 mine and block modelling for the SSX- West Mahala deposit were completed by RPA. Wireframe modelling for the Smith mine and block modelling for the Smith and Saval 4 mines were completed by JCG and provided to RPA for verification and audit. Luke Evans, M.Sc., P.Eng., RPA Principal Geologist and Executive Vice President, Geology and Resource Estimation, and Praveen Mishra, M.Sc., MBA, MAusIMM CP (Geo), RPA Senior Geologist, are the Qualified Persons for the Mineral Resource estimates for the Jerritt Canyon deposits.

Individual mineralized wireframes were built for the SSX-West Mahala, Smith, and Saval 4 mines based on approximately a 0.095 oz/st Au cut-off. A total of 197, 50, and 10 mineralized wireframes were created for SSX-West Mahala, Smith, and Saval 4, respectively.

Visual examination of the assay tables related to the diamond drill hole data revealed the presence of a large number of unsampled intervals within and abutting the boundaries of the interpreted mineralization wireframes. Zero values were entered for all such intervals of null values prior to creation of composited assays. The resulting edited sample information for the diamond drill holes and RC holes was composited into nominal equal lengths of five feet using the run-length compositing algorithm of the Vulcan mine modelling software package. Composited assay values were created on an individual zone basis.

RPA capped a small number of high grade assays contained within the mineralized wireframe models. The assays for diamond drill holes and RC drill holes were capped to 2.0 oz/st Au prior to compositing. In total, there were 46 samples that were capped to 2.0 oz/st Au. A total of 56,753, 16,130, and 2,135 composited samples were used for grade interpolation at the SSX-West Mahala, Smith, and Saval 4 mines, respectively. Composites with lengths below 2.5 ft were ignored, which constituted approximately 4% to 5% of total samples.

Two separate block models were constructed to model the mineralization in Zones 1, 2, 3, and 9 and Zones 4, 5, 6, and 7 for the SSX-West Mahala deposit. Because of the variable thicknesses of the mineralized wireframes and the shape extremities, the size of the block model for the underground mine was selected to be 2.5 ft × 2.5 ft × 2.5 ft (maximum of 5 ft × 5 ft × 5 ft). A total of four interpolation passes were carried out to estimate the grades in the underground block model. Gold grades were estimated into the blocks using the inverse distance cubed ($ID^3$) interpolation algorithm. A similar approach using the same block size was used to build the Smith and Saval 4 block models.

A 20 ft dilution zone was created around the mineralized wireframe models for all the block models. A single-pass estimation strategy was applied when estimating the grades for the dilution domain in the underground mine block model.

Block model validation exercises included a comparison of the average grade of the composite samples to the block average grades, visual comparisons of the estimated block grades to the contoured gold grades for selected wireframe models, swath plots, and reconciliation to production statistics.

Cut-off grades were developed for reporting of underground Mineral Resources using a gold price of US$1,500 per ounce. The resource cut-off grade was determined to be 0.10 oz/st Au. The current operating cut-off grade is approximately 0.13 oz/st Au.

At a cut-off grade of 0.10 oz/st Au, the Measured and Indicated Mineral Resources at Jerritt Canyon total 5.7 million tons grading 0.210 oz/st Au containing 1.2 million ounces of gold. In addition, Inferred Mineral Resources are estimated at 3.9 million tons grading 0.197 oz/st Au containing 0.8 million ounces of gold. A summary of Jerritt Canyon Mineral Resources by mine is provided in Table 14.1.

**TABLE 14.1**
**SUMMARY OF THE MINERAL RESOURCES AS OF JUNE 30, 2018**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Mine/Deposit | Measured | | | Indicated | | | Measured and Indicated | | | Inferred | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (tons) | (oz/st Au) | Contained Gold (oz) | (tons) | (oz/st Au) | Contained Gold (oz) | (tons) | (oz/st Au) | Contained Gold (oz) | (tons) | (oz/st Au) | Contained Gold (oz) |
| Smith | 2,055,733 | 0.202 | 415,349 | 547,642 | 0.249 | 136,514 | 2,603,375 | 0.212 | 551,862 | 155,993 | 0.270 | 42,149 |
| SSX | 2,541,159 | 0.210 | 533,643 | 364,035 | 0.193 | 70,431 | 2,905,194 | 0.208 | 604,074 | 1,813,776 | 0.192 | 347,974 |
| West Mahala | - | - | - | - | - | - | - | - | - | 1,838,131 | 0.198 | 363,386 |
| Saval 4 | 179,081 | 0.209 | 37,428 | 37,261 | 0.221 | 8,235 | 216,342 | 0.211 | 45,663 | 62,350 | 0.167 | 10,412 |
| | | | | | | | | | | | | |
| **Total** | **4,775,974** | **0.207** | **986,420** | **948,937** | **0.227** | **215,179** | **5,724,911** | **0.210** | **1,201,599** | **3,870,249** | **0.197** | **763,921** |

**Notes:**
1) Mineral Resources are estimated using excavation volumes as at June 30, 2018.
2) CIM (2014) definitions were followed for Mineral Resources.
3) Mineral Resources are estimated using gold price of $1,500/oz.
4) Underground Mineral Resources are estimated at a cut-off grade of 0.10 oz/st Au.
5) Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
6) Numbers may not add due to rounding

The classification of Measured, Indicated, and Inferred Resources conforms to the CIM (2014) definitions.

RPA is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

## 14.2 COMPARISON OF PUBLISHED RESOURCES

Current Mineral Resources were compared with the last published Mineral Resource estimate filed on July 11, 2013 with an effective date of December 31, 2012. Current resources have an effective date of June 30, 2018. Table 14.2 summarizes the differences between these two resource statements. There is a decrease in overall Measured and Indicated Resources with an increase in Measured Mineral Resources. The combined Measured and Indicated contained gold for Smith, SSX, West Mahala, and Saval 4 is 34% lower than 2012. The Measured ounces have increased by 17% from 2012 to 2018 due to increases at SSX and Saval 4. Inferred Mineral Resources have increased by 23% since the previous estimate due to increases at SSX and West Mahala.

These changes can be attributed to the following:

- Additional production and near-mine exploration drilling.
- Different interpretation methodology with detailed understanding of stratigraphic sequences.
- Different interpolation strategy.
- Production depletion.
- Sterilization of some resources due to ground conditions in previously mined areas.

| **Table 14.2<br>Comparison of Resources Published in 2013 and Current Resources<br>Jerritt Canyon Gold LLC – Jerritt Canyon Gold Mine** | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mine/Deposit** | **Measured** | | | **Indicated** | | | **Measured and Indicated** | | | **Inferred** | | |
| | **(tons)** | **(oz/st Au)** | **Contained Gold (oz)** | **(tons)** | **(oz/st Au)** | **Contained Gold (oz)** | **(tons)** | **(oz/st Au)** | **Contained Gold (oz)** | **(tons)** | **(oz/st Au)** | **Contained Gold (oz)** |
| **Resource Published – December 31, 2012** | | | | | | | | | | | | |
| Smith | 2,980,000 | 0.200 | 596,000 | 2,214,000 | 0.204 | 451,656 | 5,193,000 | 0.202 | 1,048,986 | 977,000 | 0.179 | 174,883 |
| SSX | 1,205,000 | 0.201 | 242,205 | 2,438,000 | 0.198 | 482,724 | 3,643,000 | 0.199 | 724,957 | 2,508,000 | 0.173 | 433,884 |
| West Mahala | - | - | - | - | - | - | - | - | - | - | - | - |
| Saval 4 | 17,000 | 0.276 | 4,692 | 160,000 | 0.247 | 39,520 | 177,000 | 0.250 | 44,250 | 51,000 | 0.238 | 12,138 |
| | | | | | | | | | | | | |
| **Total** | **4,202,000** | **0.201** | **842,897** | **4,812,000** | **0.202** | **973,900** | **9,013,000** | **0.202** | **1,818,193** | **3,536,000** | **0.176** | **620,905** |
| | | | | | | | | | | | | |
| **Current Resource – June 30, 2018** | | | | | | | | | | | | |
| Smith | 2,055,733 | 0.202 | 415,349 | 547,642 | 0.249 | 136,514 | 2,603,375 | 0.212 | 551,862 | 155,993 | 0.270 | 42,149 |
| SSX | 2,541,159 | 0.210 | 533,643 | 364,035 | 0.193 | 70,431 | 2,905,194 | 0.208 | 604,074 | 1,813,776 | 0.192 | 711,359 |
| West Mahala | - | - | - | - | - | - | - | - | - | 1,838,131 | 0.198 | 363,386 |
| Saval 4 | 179,081 | 0.209 | 37,428 | 37,261 | 0.221 | 8,235 | 216,342 | 0.211 | 45,663 | 62,350 | 0.167 | 10,412 |
| | | | | | | | | | | | | |
| **Total** | **4,775,974** | **0.207** | **986,420** | **948,937** | **0.227** | **215,179** | **5,724,911** | **0.210** | **1,201,599** | **3,870,249** | **0.197** | **763,921** |
| | | | | | | | | | | | | |
| **Difference** | | | | | | | | | | | | |
| Smith | -31% | 1% | -30% | -75% | 22% | -70% | -50% | 5% | -47% | -84% | 51% | -76% |
| SSX | 111% | 4% | 120% | -85% | -3% | -85% | -20% | 5% | -17% | -28% | 11% | 64% |
| West Mahala | | | | | | | | | | New | New | New |
| Saval 4 | 953% | -24% | 698% | -77% | -11% | -79% | 22% | -16% | 3% | 22% | -30% | -14% |
| | | | | | | | | | | | | |
| **Total** | **14%** | **3%** | **17%** | **-80%** | **12%** | **-78%** | **-36%** | **4%** | **-34%** | **9%** | **12%** | **23%** |

## 14.3 TOPOGRAPHY

Aerial topography mapping of the property was conducted in July 2004 on five-foot contour line intervals and has been utilized as the base for the current models. Recent aerial Light Detection and Ranging (LiDAR) mapping of the property on five-foot contour line spacing was conducted by Aero-graphics Geospatial Services from August 29 to September 2, 2011 on square tiles 1,800 ft × 1,800 ft in size. Finer 0.5 ft LiDAR contour line interval definition in the mill and tailings areas was also completed. The resulting integrated model of the topographic surface was provided to RPA in a digital format. Figure 14.1 shows the topography in the SSX-West Mahala area. The topography for the Smith and Saval 4 areas was also provided.

Zone boundaries for the SSX-West Mahala deposit were identified and provided by site personnel. The zones are shown in Figure 14.1.

The effective date of the underground models is June 30, 2018 for all the deposits. As of June 30, 2018, the development has reached a depth of approximately 1,000 ft vertically from surface at the SSX-West Mahala deposit (Figure 14.2).

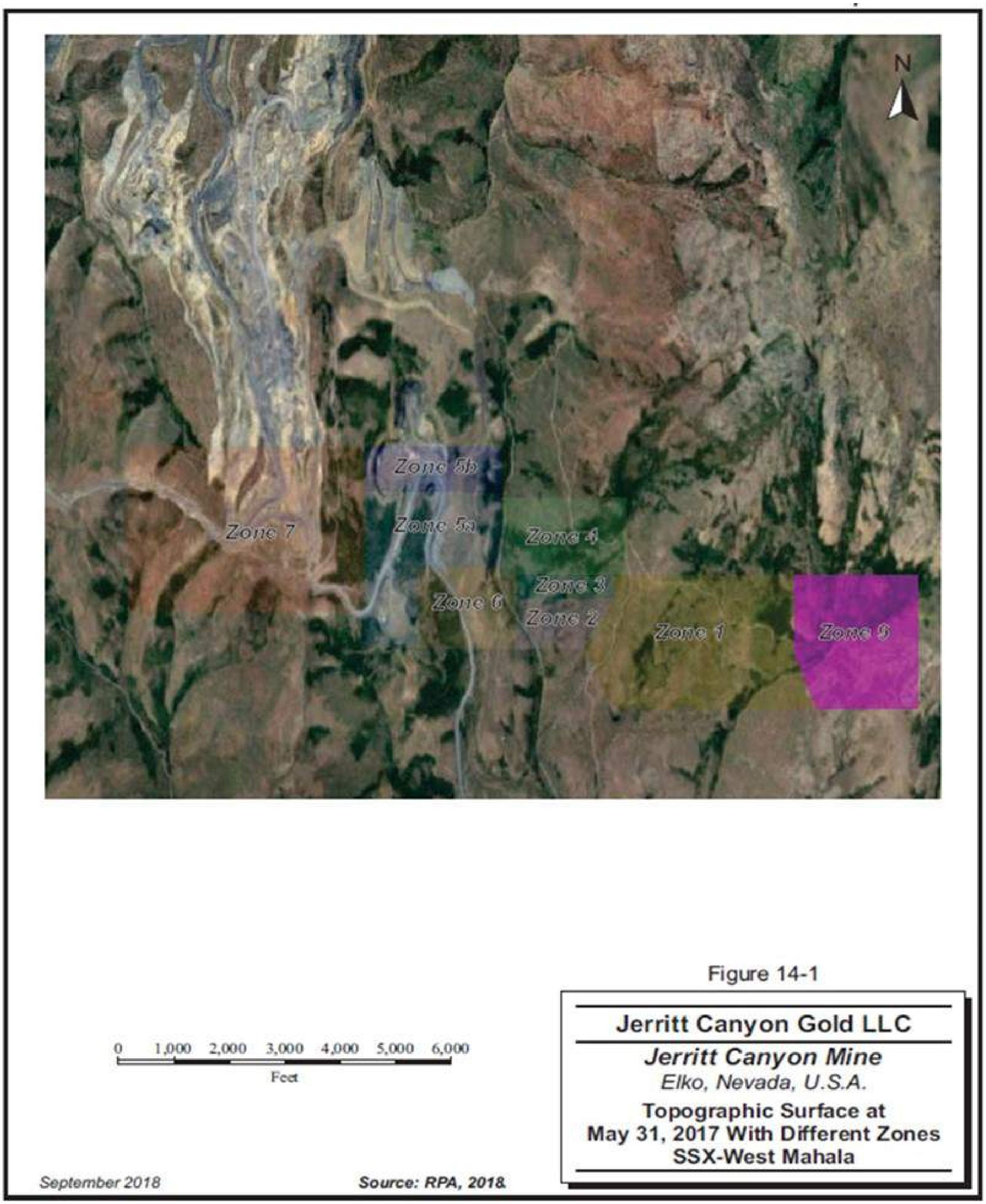


**Figure 14.1. Topographic surface at May 31, 2017 with different Zones SSX-West Mahala**
**Source: RPA, 2018**

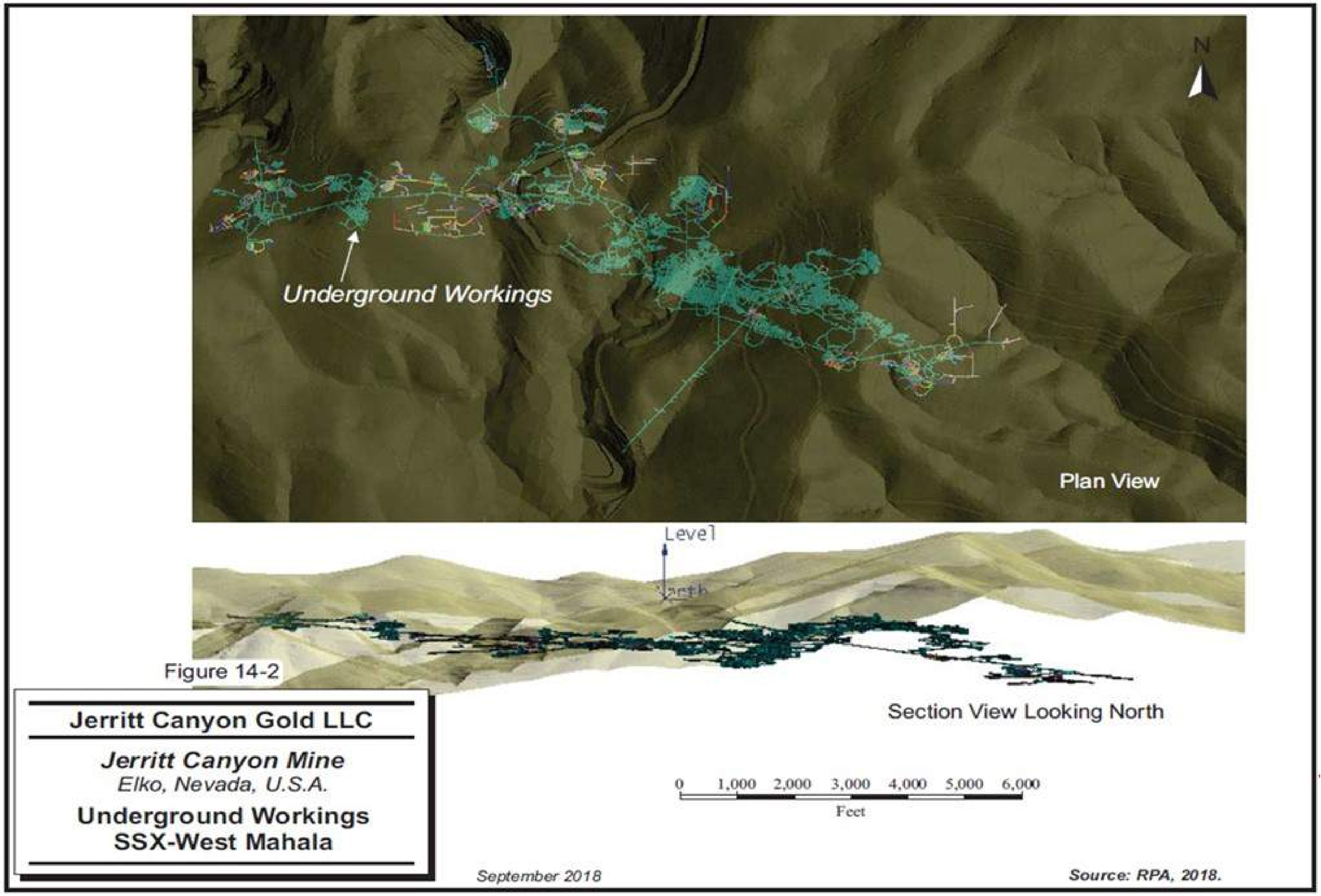


**Figure 14.2. Underground workings SSX – West Mahala**
**Source: RPA, 2018**

## 14.4 DESCRIPTION OF THE DATABASES

The drill hole database is stored in acQuire™ at Jerritt Canyon and consists of two parts: surface drilling and underground or production drilling. The data cut-off date for this report is May 31, 2017 for SSX and West Mahala and October 30, 2017 for Smith and Saval 4.

As of May 31, 2017, the SSX-West Mahala database contained 25,455 drill holes with a total length of approximately 3,809,193 ft. As of October 2017, the Smith database contained 15,572 drill holes with a total length of approximately 3,029,469 ft and the Saval 4 surface database contained 452 drill holes with a total length of approximately 133,380 ft.

The acQuire™ data is extracted to .csv tables which are then loaded into Vulcan. There are four tables extracted for each database: collar, survey, assay, and geology. The tables contain the following variables:

- Collar - HoleID, Easting, Northing, Elevation and Total Depth;
- Survey - Downhole Depth, Azimuth, and Dip;
- Assay - From, To, Sample ID, gold assay (AuFA), Flag, Zone, and Domain; and
- Geology – From, To, Formation Code, Lithology Code, Alteration Code, and Alteration Intensity Code.

A summary of the geology database formation codes is provided in Table 14.3. The location of the drill holes for SSX–West Mahala, Smith, and Saval 4 used to prepare the 2017 Mineral Resource estimate is shown in Figure 14.3, Figure 14.4, and Figure 14.5, respectively.

Table 14.4, Table 14.5, and Table 14.6 show the database statistics for all assays for SSX, Smith, and Saval 4, respectively.

**TABLE 14.3**
**GEOLOGY DATABASE FORMATION CODE**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Code | Formation Name | USGS Description |
|---|---|---|
| 0 | No Data | n/a |
| 1 | Hanson Creek 1 | SOhc1 |
| 2 | Hanson Creek 2 | SOhc2 |
| 3 | Hanson Creek 3 | SOhc3 |
| 4 | Hanson Creek 4 | SOhc4 |
| 5 | Hanson Creek 5 | SOhc5 |
| 6 | Eastern Facies | EF |
| 7 | Roberts Mountain | DSrm |
| 9 | Alluvium | Qal |
| 10 | Eureka Quartzite | Oe |
| 16 | Pogonip | Op |
| 20 | Snow Canyon | Osc |
| 25 | McAfee Quartzite | Om |
| 30 | Waterpipe | Mwp |
| 40 | Intrusive | Jki |
| 60 | Volcanics | Tv |
| 94 | No Data | n/a |
| 95 | No Data | n/a |
| 97 | No Recovery | n/a |
| 98 | No Data | n/a |
| 99 | Dump | n/a |

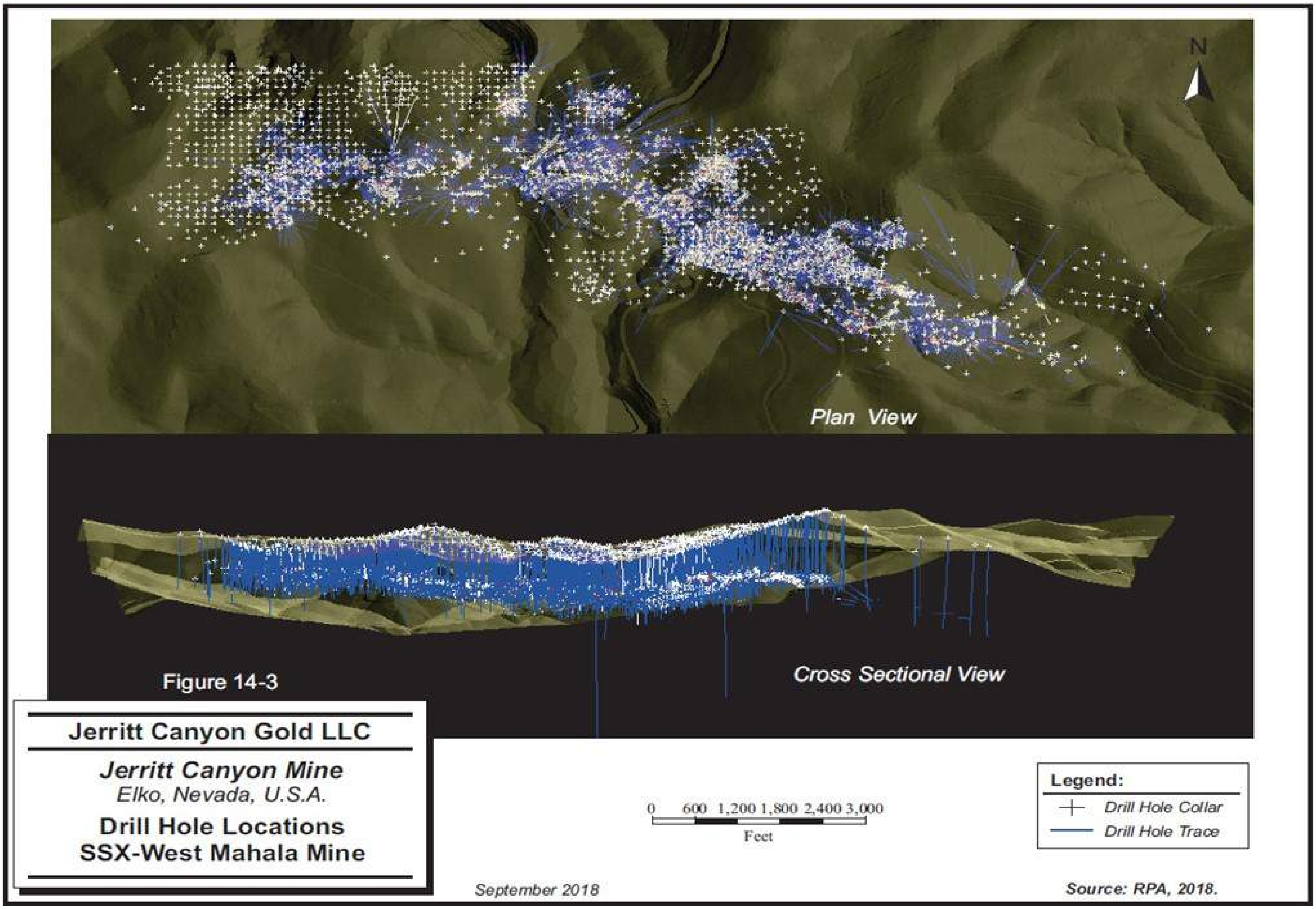


**Figure 14.3. Drill hole location SSX – West Mahala mine**
**Source: RPA, 2018**

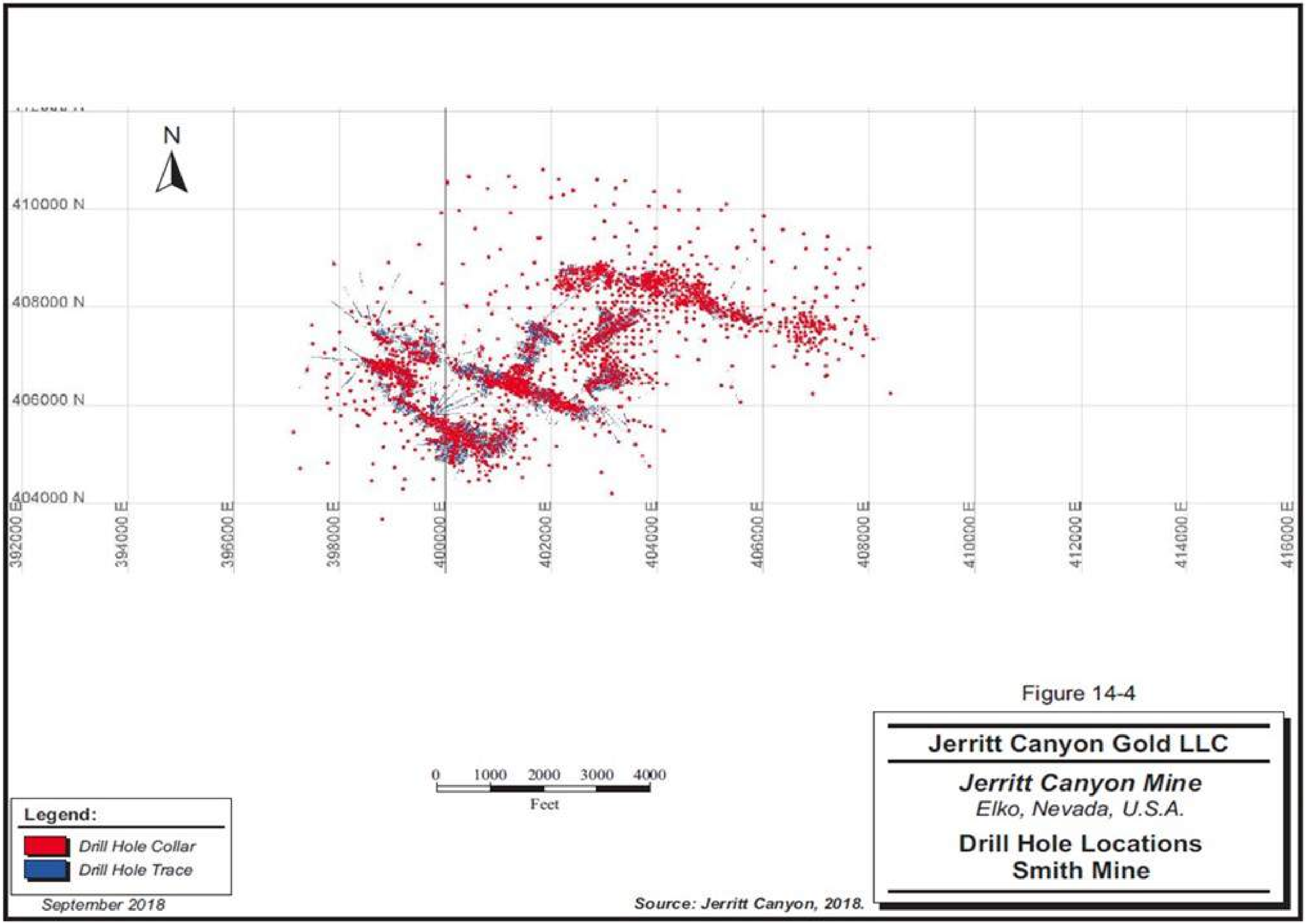


**Figure 14.4. Drill hole locations – Smith mine**
**Source: RPA, 2018**

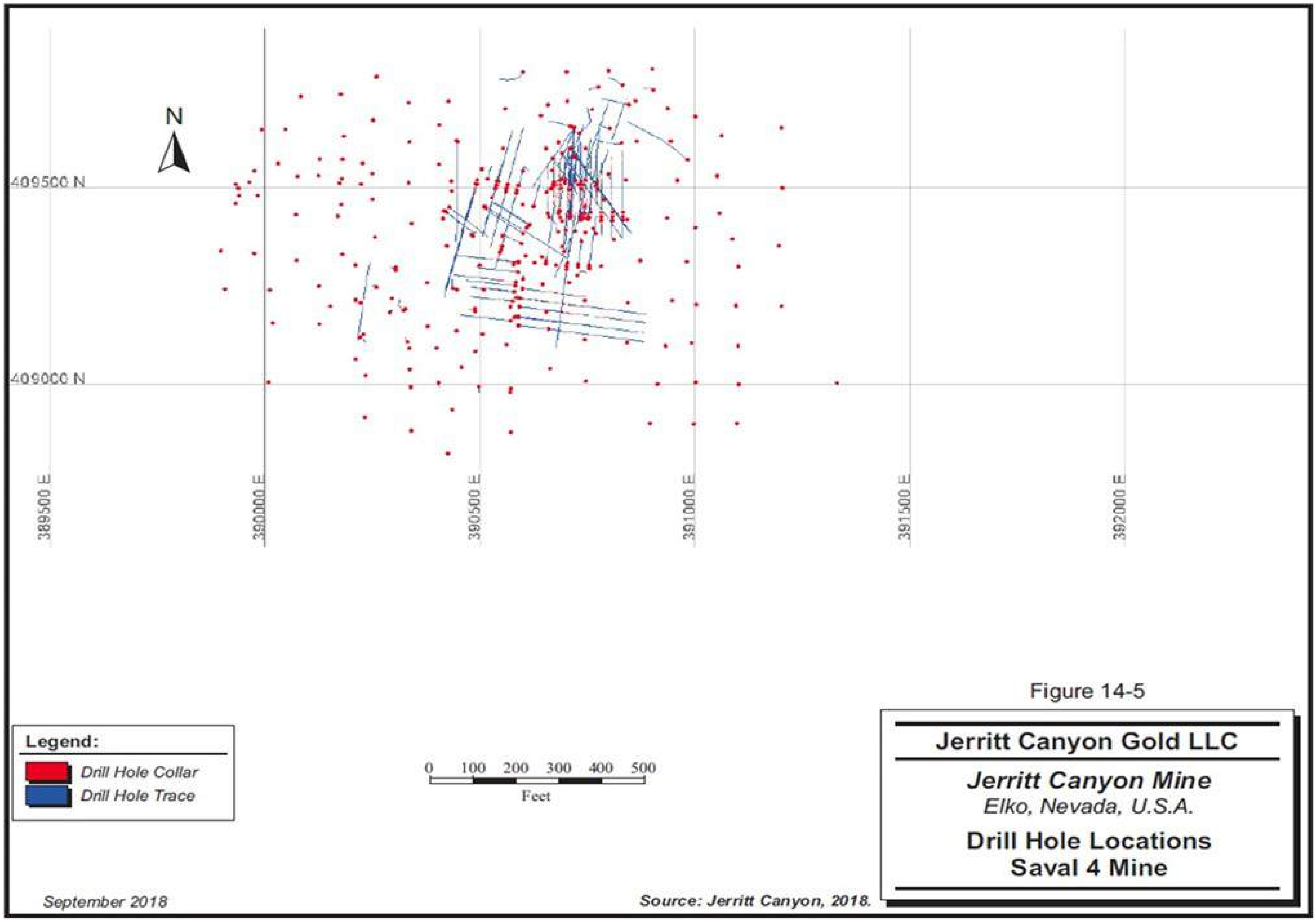


**Figure 14.5. Drill hole locations – Saval 4 mine**
**Source: RPA, 2018**

**TABLE 14.4**
**ASSAY STATISTICS OF SSX DEPOSIT**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| Waste and Mineralized Wireframe | 679,401 | 0 | 50.259 | 0.054 | 0.03 | 0.159 |
| All Mineralized Wireframe | 33,474 | 0 | 3.443 | 0.17 | 0.04 | 0.194 |
| 1004 | 35 | 0.021 | 0.336 | 0.139 | 0.01 | 0.076 |
| 1002 | 1,479 | 0 | 1.761 | 0.172 | 0.03 | 0.185 |
| 1001 | 33 | 0.023 | 1.095 | 0.25 | 0.07 | 0.273 |
| 1007 | 291 | 0 | 0.679 | 0.151 | 0.01 | 0.119 |
| 1005 | 1,045 | 0 | 2.681 | 0.142 | 0.04 | 0.207 |
| 9001 | 57 | 0.03 | 0.654 | 0.186 | 0.01 | 0.109 |
| 9002 | 84 | 0.01 | 1.065 | 0.208 | 0.03 | 0.179 |
| 1016 | 43 | 0 | 0.374 | 0.144 | 0.01 | 0.09 |
| 1006 | 507 | 0 | 1.688 | 0.143 | 0.05 | 0.22 |
| 1017 | 1,144 | 0 | 1.569 | 0.159 | 0.02 | 0.153 |
| 1011 | 93 | 0 | 0.301 | 0.117 | 0.01 | 0.081 |
| 9007 | 82 | 0 | 0.336 | 0.09 | 0.01 | 0.094 |
| 9006 | 424 | 0 | 0.935 | 0.059 | 0.01 | 0.1 |
| 5001 | 1,321 | 0 | 1.206 | 0.172 | 0.02 | 0.153 |
| 7051 | 22 | 0.003 | 0.281 | 0.116 | 0.01 | 0.08 |
| 7002 | 54 | 0 | 0.747 | 0.181 | 0.03 | 0.159 |
| 7019 | 304 | 0 | 0.851 | 0.129 | 0.02 | 0.127 |
| 5002 | 257 | 0 | 2.169 | 0.179 | 0.05 | 0.223 |
| 7022 | 64 | 0.001 | 0.474 | 0.112 | 0.01 | 0.106 |
| 7021 | 429 | 0 | 1.037 | 0.14 | 0.02 | 0.153 |
| 5004 | 35 | 0 | 1.095 | 0.334 | 0.07 | 0.267 |
| 5006 | 113 | 0 | 1.207 | 0.189 | 0.05 | 0.223 |
| 5008 | 160 | 0 | 0.861 | 0.202 | 0.03 | 0.162 |
| 7009 | 67 | 0 | 1.489 | 0.34 | 0.13 | 0.367 |
| 7008 | 165 | 0 | 1.069 | 0.177 | 0.04 | 0.192 |
| 7003 | 11 | 0.004 | 0.626 | 0.26 | 0.05 | 0.214 |
| 7005 | 133 | 0 | 1.035 | 0.166 | 0.04 | 0.209 |
| 4008 | 299 | 0 | 0.457 | 0.102 | 0.01 | 0.092 |
| 7056 | 52 | 0.004 | 0.648 | 0.1 | 0.01 | 0.091 |
| 5003 | 24 | 0.073 | 1.327 | 0.433 | 0.14 | 0.372 |
| 5028 | 44 | 0 | 0.57 | 0.154 | 0.02 | 0.13 |
| 7068 | 6 | 0.013 | 0.282 | 0.113 | 0.01 | 0.104 |
| 7004 | 24 | 0.064 | 0.425 | 0.194 | 0.01 | 0.088 |
| 5032 | 11 | 0.004 | 0.383 | 0.151 | 0.02 | 0.128 |
| 7076 | 256 | 0 | 2.659 | 0.295 | 0.14 | 0.378 |
| 5013 | 3 | 0.201 | 0.48 | 0.312 | 0.02 | 0.148 |
| 5012 | 647 | 0 | 1.226 | 0.181 | 0.04 | 0.207 |
| 7014 | 266 | 0.001 | 0.74 | 0.138 | 0.02 | 0.146 |
| 5035 | 61 | 0.001 | 0.71 | 0.152 | 0.02 | 0.126 |
| 5010 | 122 | 0 | 1.409 | 0.196 | 0.05 | 0.223 |

**TABLE 14.4**
**ASSAY STATISTICS OF SSX DEPOSIT**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| 4002 | 525 | 0 | 1.181 | 0.188 | 0.04 | 0.201 |
| 5023 | 223 | 0 | 0.816 | 0.111 | 0.01 | 0.122 |
| 5021 | 443 | 0 | 1.302 | 0.213 | 0.06 | 0.253 |
| 5038 | 199 | 0 | 0.876 | 0.186 | 0.03 | 0.174 |
| 4015 | 80 | 0 | 0.295 | 0.064 | 0.01 | 0.072 |
| 4009 | 837 | 0 | 1.011 | 0.079 | 0.01 | 0.112 |
| 4010 | 83 | 0.025 | 0.533 | 0.133 | 0.01 | 0.072 |
| 4005 | 1,596 | 0 | 1.61 | 0.161 | 0.04 | 0.192 |
| 3005 | 202 | 0 | 2.058 | 0.206 | 0.07 | 0.258 |
| 4012 | 274 | 0 | 1.215 | 0.253 | 0.06 | 0.242 |
| 4022 | 26 | 0 | 0.581 | 0.161 | 0.02 | 0.127 |
| 7011 | 31 | 0 | 0.798 | 0.22 | 0.04 | 0.21 |
| 2999 | 107 | 0 | 1.049 | 0.236 | 0.04 | 0.205 |
| 2008 | 41 | 0 | 0.497 | 0.141 | 0.02 | 0.15 |
| 1024 | 23 | 0.039 | 0.933 | 0.264 | 0.06 | 0.237 |
| 1010 | 963 | 0 | 2.257 | 0.202 | 0.06 | 0.239 |
| 5019 | 496 | 0 | 1.034 | 0.148 | 0.02 | 0.136 |
| 3003 | 40 | 0 | 0.678 | 0.197 | 0.03 | 0.16 |
| 5034 | 17 | 0.006 | 1.278 | 0.276 | 0.1 | 0.321 |
| 5014 | 1,023 | 0 | 1.339 | 0.184 | 0.03 | 0.169 |
| 5015 | 783 | 0 | 0.808 | 0.143 | 0.02 | 0.136 |
| 6001 | 21 | 0.016 | 0.389 | 0.155 | 0.01 | 0.1 |
| 4018 | 186 | 0 | 1.02 | 0.181 | 0.04 | 0.2 |
| 4020 | 4 | 0.108 | 0.171 | 0.136 | 0 | 0.031 |
| 2009 | 91 | 0 | 1.081 | 0.164 | 0.03 | 0.166 |
| 5039 | 55 | 0.002 | 0.478 | 0.124 | 0.01 | 0.087 |
| 6002 | 28 | 0 | 0.399 | 0.148 | 0.01 | 0.082 |
| 6005 | 14 | 0.124 | 0.83 | 0.43 | 0.06 | 0.245 |
| 2002 | 401 | 0 | 2.139 | 0.161 | 0.04 | 0.194 |
| 4003 | 524 | 0 | 1.687 | 0.166 | 0.05 | 0.233 |
| 4004 | 119 | 0 | 0.915 | 0.191 | 0.03 | 0.166 |
| 3001 | 417 | 0 | 1.653 | 0.187 | 0.04 | 0.202 |
| 6006 | 14 | 0.025 | 0.248 | 0.132 | 0 | 0.066 |
| 6003 | 8 | 0.075 | 0.244 | 0.159 | 0 | 0.056 |
| 5027 | 81 | 0 | 0.73 | 0.187 | 0.02 | 0.143 |
| 7007 | 66 | 0 | 0.458 | 0.171 | 0.01 | 0.099 |
| 7020 | 332 | 0 | 1.784 | 0.177 | 0.04 | 0.204 |
| 7026 | 8 | 0.017 | 0.699 | 0.196 | 0.05 | 0.225 |
| 7023 | 325 | 0 | 0.753 | 0.226 | 0.03 | 0.16 |
| 2012 | 4 | 0.249 | 0.555 | 0.398 | 0.02 | 0.133 |
| 2004 | 33 | 0 | 1.01 | 0.286 | 0.08 | 0.275 |
| 7018 | 474 | 0 | 1.95 | 0.183 | 0.05 | 0.212 |
| 4011 | 151 | 0 | 0.564 | 0.148 | 0.01 | 0.115 |

**Table 14.4**
**Assay Statistics of SSX Deposit**
**Jerritt Canyon Gold LLC – Jerritt Canyon Gold Mine**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| 5025 | 34 | 0 | 1.306 | 0.238 | 0.07 | 0.27 |
| 4021 | 92 | 0 | 1.309 | 0.218 | 0.04 | 0.211 |
| 4017 | 15 | 0.041 | 0.159 | 0.107 | 0 | 0.038 |
| 4016 | 6 | 0.122 | 0.299 | 0.204 | 0 | 0.065 |
| 2010 | 30 | 0 | 1.34 | 0.272 | 0.16 | 0.396 |
| 2005 | 15 | 0.062 | 0.41 | 0.216 | 0.01 | 0.09 |
| 5011 | 17 | 0 | 0.802 | 0.193 | 0.04 | 0.193 |
| 3002 | 234 | 0 | 1.253 | 0.221 | 0.06 | 0.249 |
| 1020 | 818 | 0 | 1.804 | 0.199 | 0.04 | 0.2 |
| 5017 | 718 | 0 | 1.481 | 0.149 | 0.03 | 0.164 |
| 7012 | 10 | 0.006 | 0.188 | 0.114 | 0 | 0.054 |
| 4013 | 490 | 0 | 1.469 | 0.251 | 0.07 | 0.257 |
| 4014 | 245 | 0 | 1.272 | 0.229 | 0.05 | 0.228 |
| 1025 | 5 | 0.006 | 0.325 | 0.16 | 0.01 | 0.119 |
| 1027 | 37 | 0 | 0.641 | 0.152 | 0.03 | 0.178 |
| 1999 | 44 | 0 | 0.621 | 0.15 | 0.02 | 0.137 |
| 6010 | 9 | 0.096 | 0.547 | 0.243 | 0.02 | 0.138 |
| 6004 | 37 | 0.03 | 0.338 | 0.129 | 0 | 0.066 |
| 6008 | 6 | 0.007 | 0.271 | 0.097 | 0.01 | 0.096 |
| 4007 | 34 | 0 | 0.913 | 0.245 | 0.07 | 0.266 |
| 1012 | 322 | 0 | 0.949 | 0.2 | 0.03 | 0.173 |
| 4023 | 1 | 0.249 | 0.249 | 0.249 | 0 | 0 |
| 1009 | 176 | 0 | 0.454 | 0.146 | 0.01 | 0.095 |
| 5024 | 11 | 0 | 0.398 | 0.109 | 0.02 | 0.123 |
| 5022 | 611 | 0 | 0.776 | 0.132 | 0.01 | 0.118 |
| 5007 | 60 | 0 | 0.918 | 0.168 | 0.04 | 0.208 |
| 7010 | 14 | 0 | 0.409 | 0.128 | 0.01 | 0.111 |
| 7017 | 369 | 0 | 0.553 | 0.069 | 0.01 | 0.085 |
| 7013 | 81 | 0 | 0.472 | 0.128 | 0.01 | 0.122 |
| 1098 | 42 | 0.001 | 0.73 | 0.161 | 0.01 | 0.113 |
| 1029 | 60 | 0.001 | 0.905 | 0.212 | 0.04 | 0.198 |
| 5031 | 128 | 0 | 0.759 | 0.15 | 0.02 | 0.144 |
| 5029 | 330 | 0 | 1.019 | 0.15 | 0.02 | 0.151 |
| 5037 | 120 | 0.001 | 0.575 | 0.118 | 0.02 | 0.125 |
| 5036 | 76 | 0 | 0.591 | 0.141 | 0.02 | 0.135 |
| 5005 | 94 | 0 | 1.595 | 0.239 | 0.1 | 0.309 |
| 5030 | 60 | 0.001 | 1.534 | 0.255 | 0.09 | 0.304 |
| 7015 | 219 | 0 | 2.035 | 0.117 | 0.05 | 0.227 |
| 7016 | 104 | 0 | 0.544 | 0.099 | 0.01 | 0.099 |
| 7033 | 31 | 0.001 | 0.51 | 0.225 | 0.03 | 0.159 |
| 7034 | 41 | 0 | 0.536 | 0.143 | 0.01 | 0.112 |
| 7032 | 81 | 0 | 1.173 | 0.208 | 0.04 | 0.204 |
| 7031 | 14 | 0.011 | 0.235 | 0.118 | 0 | 0.067 |

**TABLE 14.4**
**ASSAY STATISTICS OF SSX DEPOSIT**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| 7036 | 560 | 0 | 1.296 | 0.153 | 0.02 | 0.144 |
| 7067 | 106 | 0 | 0.706 | 0.202 | 0.02 | 0.154 |
| 7035 | 772 | 0 | 1.807 | 0.19 | 0.04 | 0.2 |
| 7066 | 24 | 0 | 0.451 | 0.181 | 0.02 | 0.136 |
| 7027 | 52 | 0 | 0.467 | 0.168 | 0.02 | 0.127 |
| 7024 | 69 | 0.004 | 0.649 | 0.124 | 0.01 | 0.104 |
| 7046 | 143 | 0.001 | 0.533 | 0.105 | 0.01 | 0.107 |
| 7047 | 139 | 0 | 1.029 | 0.139 | 0.02 | 0.14 |
| 7045 | 300 | 0 | 1.41 | 0.161 | 0.04 | 0.192 |
| 7070 | 48 | 0.012 | 0.479 | 0.163 | 0.01 | 0.101 |
| 1014 | 205 | 0 | 1.766 | 0.19 | 0.06 | 0.241 |
| 1026 | 5 | 0.109 | 0.446 | 0.239 | 0.03 | 0.159 |
| 1028 | 9 | 0 | 0.704 | 0.253 | 0.06 | 0.239 |
| 4006 | 31 | 0 | 0.406 | 0.166 | 0.01 | 0.105 |
| 5016 | 110 | 0 | 0.692 | 0.142 | 0.01 | 0.108 |
| 5009 | 45 | 0 | 0.535 | 0.054 | 0.01 | 0.119 |
| 7030 | 58 | 0 | 0.625 | 0.201 | 0.02 | 0.144 |
| 7044 | 638 | 0 | 3.443 | 0.227 | 0.08 | 0.29 |
| 7048 | 9 | 0 | 0.325 | 0.159 | 0.01 | 0.097 |
| 7049 | 9 | 0.118 | 1.274 | 0.432 | 0.17 | 0.41 |
| 7071 | 5 | 0.109 | 0.178 | 0.143 | 0 | 0.029 |
| 7050 | 56 | 0 | 0.442 | 0.1 | 0.01 | 0.094 |
| 9009 | 2 | 0.126 | 0.128 | 0.127 | 0 | 0.001 |
| 2007 | 50 | 0 | 0.39 | 0.124 | 0.01 | 0.073 |
| 4024 | 17 | 0.012 | 0.415 | 0.211 | 0.01 | 0.118 |
| 4019 | 12 | 0.004 | 0.429 | 0.223 | 0.02 | 0.145 |
| 6009 | 9 | 0.037 | 0.741 | 0.299 | 0.07 | 0.274 |
| 5026 | 6 | 0.019 | 0.266 | 0.158 | 0.01 | 0.092 |
| 1015 | 10 | 0.013 | 0.877 | 0.237 | 0.06 | 0.245 |
| 6007 | 2 | 0.097 | 0.174 | 0.136 | 0 | 0.054 |
| 3004 | 4 | 0 | 0.262 | 0.117 | 0.01 | 0.122 |
| 2011 | 7 | 0.109 | 0.188 | 0.149 | 0 | 0.035 |
| 5020 | 106 | 0 | 2.097 | 0.184 | 0.06 | 0.244 |
| 7055 | 67 | 0.001 | 3.266 | 0.458 | 0.5 | 0.704 |
| 7062 | 16 | 0.013 | 0.359 | 0.174 | 0.01 | 0.09 |
| 7058 | 16 | 0.022 | 0.403 | 0.144 | 0.01 | 0.085 |
| 7057 | 22 | 0.05 | 1.677 | 0.279 | 0.12 | 0.351 |
| 7038 | 519 | 0 | 2.354 | 0.186 | 0.06 | 0.25 |
| 7039 | 71 | 0 | 0.543 | 0.162 | 0.02 | 0.126 |
| 7077 | 227 | 0 | 1.102 | 0.254 | 0.04 | 0.205 |
| 7063 | 31 | 0 | 0.331 | 0.132 | 0.01 | 0.094 |
| 7074 | 1 | 0.149 | 0.149 | 0.149 | 0 | 0 |
| 7060 | 8 | 0 | 0.492 | 0.185 | 0.02 | 0.148 |

| **TABLE 14.4**<br>**ASSAY STATISTICS OF SSX DEPOSIT**<br>**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE** | | | | | | |
|---|---|---|---|---|---|---|
| **Wireframe Codes** | **Count** | **Min** | **Max** | **Mean** | **Variance** | **StDev** |
| 7042 | 56 | 0 | 0.499 | 0.176 | 0.02 | 0.128 |
| 7037 | 959 | 0 | 1.104 | 0.183 | 0.03 | 0.162 |
| 7040 | 24 | 0 | 0.385 | 0.192 | 0.01 | 0.106 |
| 7043 | 120 | 0 | 0.732 | 0.203 | 0.03 | 0.163 |
| 7054 | 20 | 0 | 0.396 | 0.167 | 0.02 | 0.125 |
| 7078 | 15 | 0 | 0.535 | 0.216 | 0.03 | 0.159 |
| 7052 | 6 | 0.08 | 0.567 | 0.226 | 0.03 | 0.181 |
| 7053 | 14 | 0.009 | 0.711 | 0.245 | 0.04 | 0.204 |
| 7064 | 21 | 0.022 | 0.41 | 0.17 | 0.01 | 0.088 |
| 7075 | 3 | 0.066 | 0.169 | 0.122 | 0 | 0.052 |
| 7025 | 4 | 0.116 | 0.226 | 0.189 | 0 | 0.049 |
| 7073 | 52 | 0 | 0.317 | 0.137 | 0.01 | 0.084 |
| 7029 | 8 | 0 | 0.557 | 0.149 | 0.03 | 0.178 |

| **TABLE 14.5**<br>**ASSAY STATISTICS OF SMITH DEPOSIT**<br>**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE** | | | | | | |
|---|---|---|---|---|---|---|
| **Wireframe Codes** | **Count** | **Min** | **Max** | **Mean** | **Variance** | **StDev** |
| Waste and Mineralized Wireframe | 548,250 | 0 | 135.891 | 0.049 | 0.05 | 0.231 |
| All Mineralized Wireframe | 49,247 | 0 | 10.682 | 0.167 | 0.05 | 0.216 |
| 4001 | 5,946 | 0 | 10.682 | 0.156 | 0.04 | 0.194 |
| 3003 | 1,934 | 0 | 4.481 | 0.204 | 0.12 | 0.34 |
| 3005 | 114 | 0.001 | 0.584 | 0.065 | 0.01 | 0.091 |
| 4002 | 3,364 | 0 | 5.493 | 0.14 | 0.03 | 0.171 |
| 4004 | 73 | 0.014 | 0.311 | 0.101 | 0 | 0.056 |
| 4008 | 226 | 0 | 0.314 | 0.112 | 0 | 0.057 |
| 4009 | 456 | 0 | 1.758 | 0.093 | 0.04 | 0.195 |
| 9003 | 34 | 0.001 | 1 | 0.18 | 0.15 | 0.385 |
| 8001 | 4,581 | 0 | 2.232 | 0.161 | 0.03 | 0.167 |
| 4005 | 371 | 0.001 | 0.83 | 0.154 | 0.02 | 0.127 |
| 4003 | 345 | 0 | 1.03 | 0.108 | 0.01 | 0.087 |
| 4007 | 418 | 0 | 1.34 | 0.118 | 0.02 | 0.143 |
| 8007 | 724 | 0 | 1.35 | 0.153 | 0.03 | 0.172 |
| 2007 | 737 | 0 | 1.282 | 0.138 | 0.02 | 0.157 |
| 8004 | 2,009 | 0 | 3.765 | 0.177 | 0.08 | 0.277 |
| 8006 | 1,296 | 0 | 3.003 | 0.2 | 0.11 | 0.326 |
| 8002 | 599 | 0 | 0.975 | 0.154 | 0.02 | 0.14 |
| 9004 | 1,106 | 0 | 3.098 | 0.251 | 0.11 | 0.327 |
| 8005 | 27 | 0.016 | 0.22 | 0.09 | 0 | 0.054 |
| 2001 | 8,098 | 0 | 4.13 | 0.169 | 0.06 | 0.242 |
| 9002 | 193 | 0.001 | 4.64 | 0.287 | 0.22 | 0.467 |

**TABLE 14.5**
**ASSAY STATISTICS OF SMITH DEPOSIT**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| 9001 | 158 | 0.001 | 1.423 | 0.201 | 0.06 | 0.239 |
| 7007 | 629 | 0 | 2.379 | 0.166 | 0.04 | 0.188 |
| 7004 | 291 | 0.001 | 1.065 | 0.159 | 0.02 | 0.14 |
| 7009 | 40 | 0 | 0.183 | 0.052 | 0 | 0.054 |
| 7003 | 668 | 0.001 | 1.509 | 0.159 | 0.03 | 0.183 |
| 8008 | 79 | 0.001 | 0.905 | 0.124 | 0.02 | 0.138 |
| 1004 | 3,433 | 0 | 1.633 | 0.223 | 0.05 | 0.215 |
| 2002 | 1,741 | 0 | 1.536 | 0.154 | 0.03 | 0.159 |
| 1001 | 2,988 | 0 | 1.481 | 0.141 | 0.02 | 0.133 |
| 1006 | 318 | 0 | 0.891 | 0.154 | 0.03 | 0.176 |
| 9005 | 29 | 0.001 | 0.334 | 0.032 | 0.01 | 0.078 |
| 2005 | 287 | 0 | 1.804 | 0.207 | 0.06 | 0.239 |
| 2008 | 642 | 0 | 2.553 | 0.15 | 0.05 | 0.22 |
| 3006 | 23 | 0.001 | 0.379 | 0.045 | 0.01 | 0.079 |
| 2004 | 18 | 0.001 | 0.448 | 0.06 | 0.01 | 0.122 |
| 7008 | 431 | 0 | 2.261 | 0.184 | 0.05 | 0.221 |
| 7001 | 272 | 0.003 | 1.05 | 0.132 | 0.01 | 0.12 |
| 7006 | 959 | 0 | 1.525 | 0.199 | 0.04 | 0.2 |
| 1003 | 441 | 0 | 0.803 | 0.126 | 0.01 | 0.117 |
| 1002 | 1,626 | 0 | 0.999 | 0.144 | 0.01 | 0.076 |
| 1005 | 111 | 0.001 | 0.877 | 0.129 | 0.02 | 0.15 |
| 1007 | 12 | 0.02 | 0.306 | 0.131 | 0.01 | 0.091 |
| 2006 | 173 | 0 | 1.084 | 0.167 | 0.03 | 0.163 |
| 7005 | 69 | 0.006 | 0.52 | 0.133 | 0.01 | 0.115 |
| 7002 | 37 | 0.001 | 0.266 | 0.089 | 0 | 0.062 |
| 2003 | 3 | 0.072 | 0.082 | 0.076 | 0 | 0.005 |
| 3001 | 362 | 0 | 2.744 | 0.249 | 0.13 | 0.361 |
| 3004 | 380 | 0 | 2.29 | 0.216 | 0.11 | 0.335 |
| 3002 | 21 | 0.011 | 0.282 | 0.134 | 0.01 | 0.08 |
| 4006 | 32 | 0.027 | 0.482 | 0.157 | 0.01 | 0.112 |
| 8003 | 323 | 0 | 1.21 | 0.165 | 0.03 | 0.182 |

**TABLE 14.6**
**ASSAY STATISTICS OF SAVAL 4 DEPOSIT**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| Waste and Mineralized Wireframe | 26,394 | 0 | 1.636 | 0.028 | 0.01 | 0.084 |
| All Mineralized Wireframe | 2,590 | 0 | 1.636 | 0.165 | 0.04 | 0.191 |
| 206 | 39 | 0 | 0.289 | 0.089 | 0.01 | 0.079 |
| 201 | 610 | 0 | 1.181 | 0.163 | 0.03 | 0.183 |
| 204 | 168 | 0 | 0.435 | 0.091 | 0 | 0.069 |
| 101 | 1,511 | 0 | 1.636 | 0.181 | 0.04 | 0.207 |
| 103 | 74 | 0.002 | 0.618 | 0.124 | 0.02 | 0.127 |
| 208 | 38 | 0 | 0.576 | 0.117 | 0.02 | 0.138 |
| 209 | 24 | 0.002 | 0.366 | 0.082 | 0.01 | 0.093 |
| 205 | 59 | 0.006 | 0.67 | 0.134 | 0.02 | 0.142 |
| 104 | 37 | 0 | 0.985 | 0.232 | 0.08 | 0.287 |
| 207 | 30 | 0 | 0.406 | 0.105 | 0.01 | 0.115 |

## 14.5 LITHOLOGY AND MINERALIZATION WIREFRAMES

Grade domains are typically used in resource modelling to constrain similar grades and prevent grade smearing. RPA used Leapfrog to construct grade domains of mineralization in SSX-West Mahala, Smith, and Saval 4 based on a gold wireframe cut-off grade of approximately 0.095 oz/st Au.

Individual wireframes were grouped into separate areas for all three deposits. In total, 197 individual wireframes were created for the SSX-West Mahala deposit (Figure 14.6), 50 individual wireframes were created for Smith (Figure 14.7), and 10 individual wireframes were created for Saval 4 (Figure 14.8).

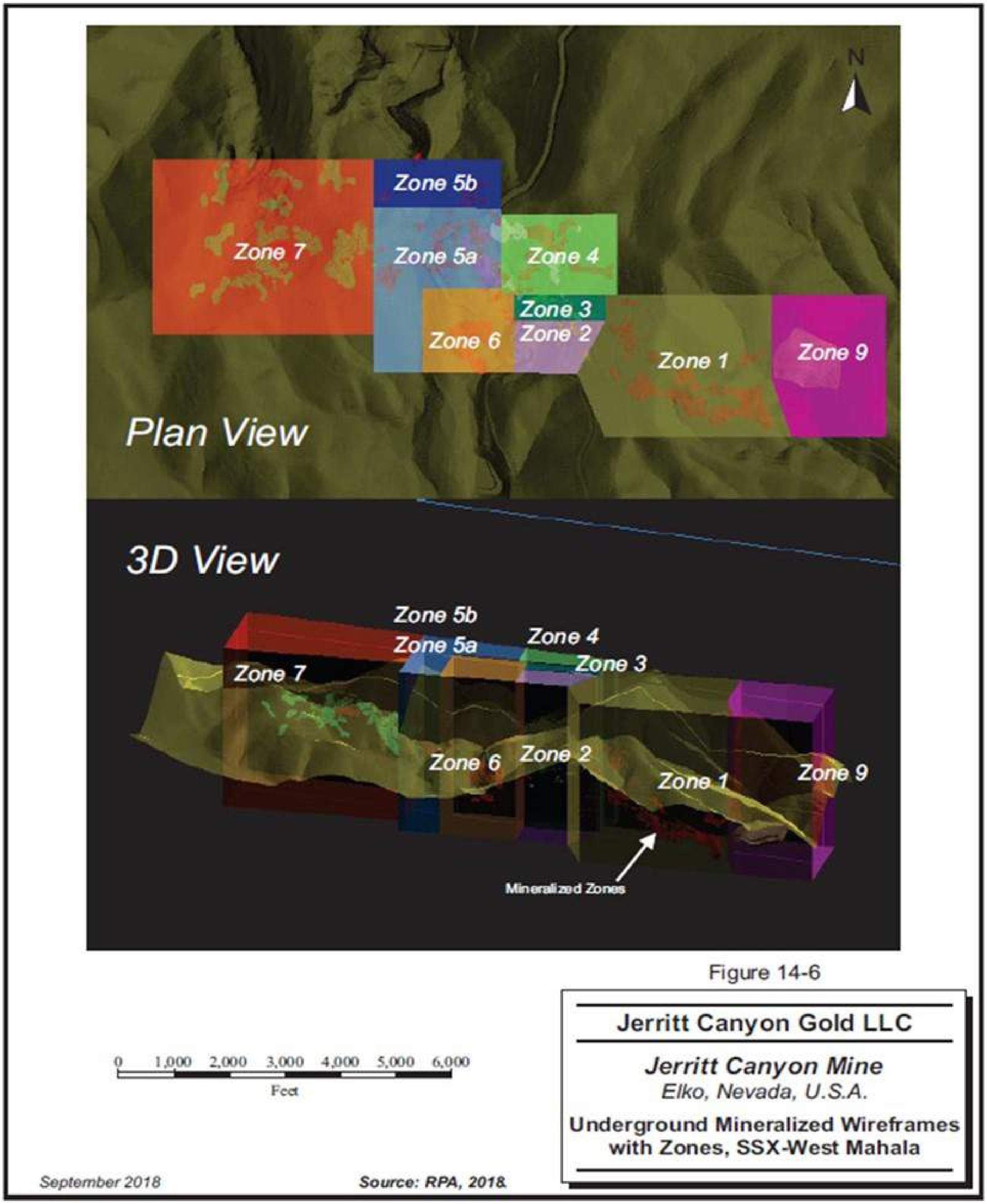


**Figure 14.6. Underground mineralized wireframes with Zones SSX and West Mahala mines**
**Source: RPA, 2018**

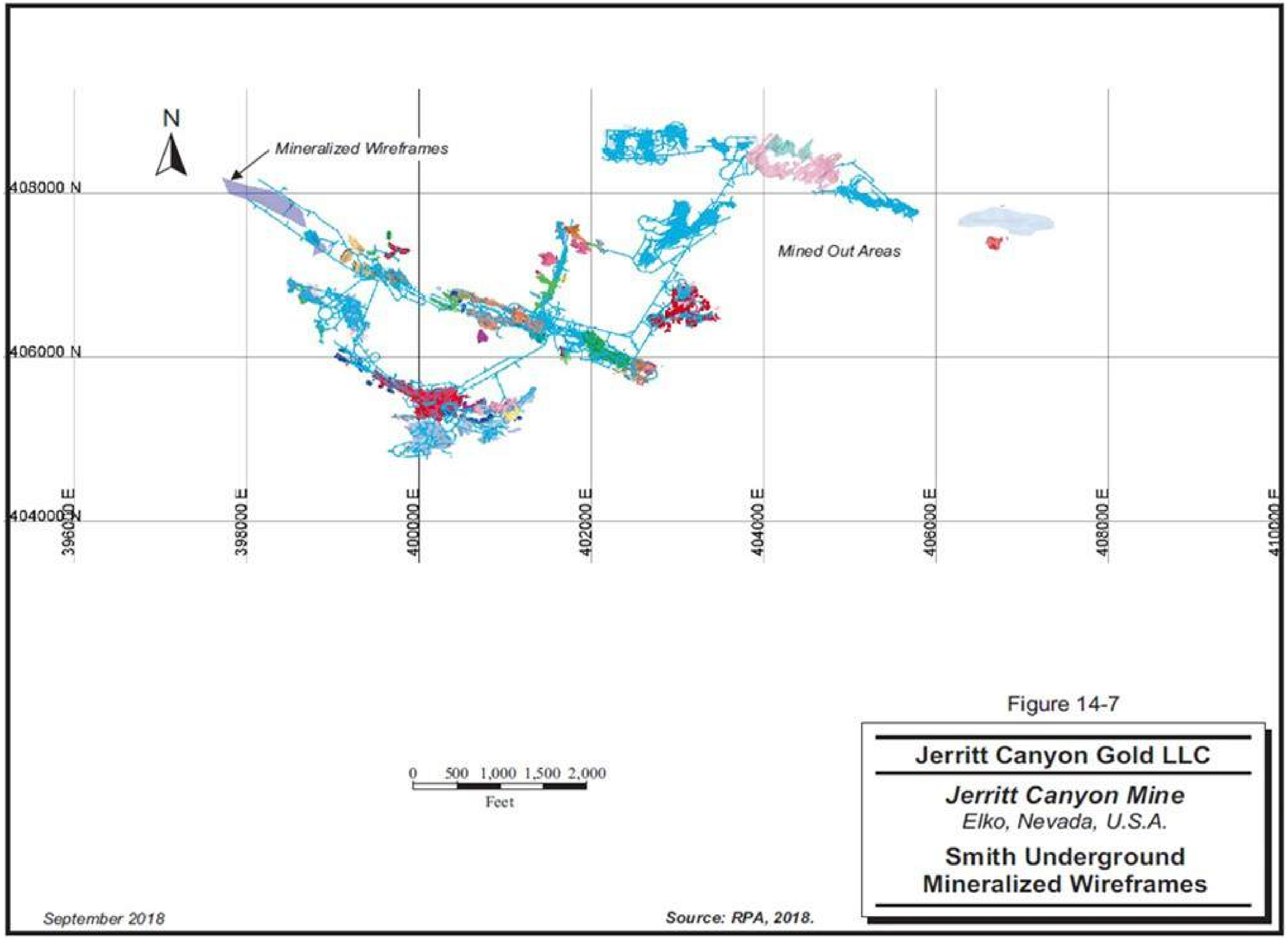


**Figure 14.7. Smith underground mineralized wireframes**
**Source: RPA, 2018**

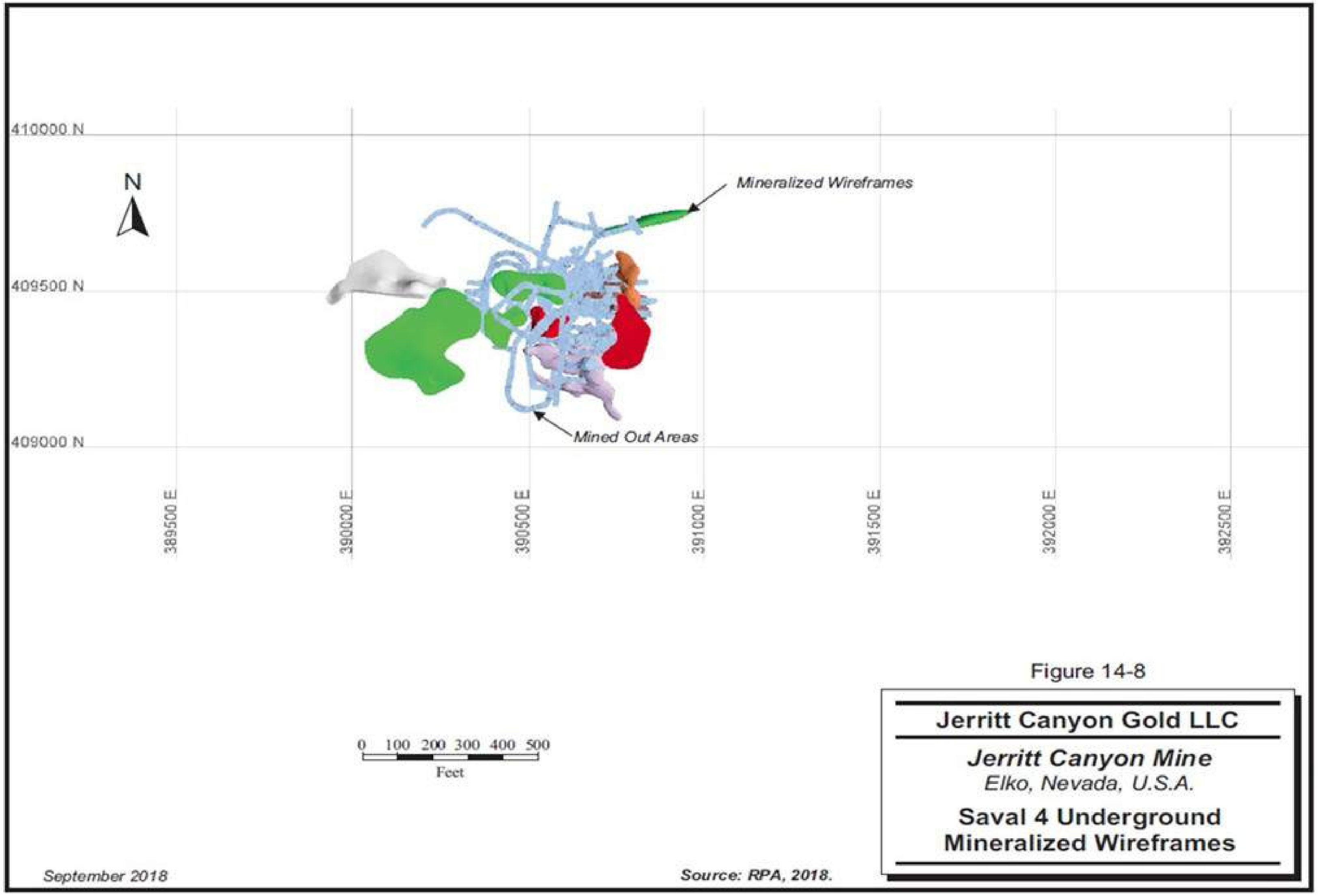


**Figure 14.8. Saval 4 underground mineralized wireframes**
**Source: RPA, 2018**

The completed domain model was used to populate a new table in the bore hole database with intersection information for later compositing within individual domains. The assay statistics for individual wireframes in SSX–West Mahala, Smith, and Saval 4 is detailed above in Table 14.3, Table 14.4, and Table 14.5.

RPA used the domain model from 2013 as a guide while constructing the current model. The main goals of the model update were to ensure that domain boundaries honor bore hole information and to include areas of continuous mineralization previously not considered. While every effort was made to minimize internal waste, a certain amount was allowed to maintain the domain shape as continuous as possible.

Domains were created using one of the two modeling approaches: "intrusive" and "vein". In the "intrusive" approach, borehole intersections above the cut-off grade were selected manually and coded with individual domain qualifiers. In Leapfrog™, RPA assigned positive values to intersections inside the domain and negative values to intersections outside the domain. Contact points are assigned a zero value. Domains are based on three-dimensional interpolation of the zero values. Shapes are optimized using additional points and polylines.

In the "vein approach", Leapfrog™ interpolates hanging wall and footwall surfaces from the zones selected manually, which are combined into domains.

Zones with sheet-like mineralization were modeled using the vein approach, while zones with mineralization that appears more diffuse or complexly shaped were modelled using the intrusive approach.

## 14.6 COMPOSITING METHODS AND GRADE CAPPING

Visual examination of the assay tables related to the diamond drill hole data revealed the presence of a large number of unsampled intervals within and adjacent to the interpreted mineralization wireframes. Zero values were entered for all such intervals of null values prior to compositing. The resulting edited sample information for the diamond drill and RC holes was composited into nominal equal lengths of five feet using the run-length compositing algorithm of the Vulcan™ mine modeling software package. Composited assay values were created for each mineralized wireframe and wireframes were assigned codes.

The assay information for the underground diamond and RC drill holes was examined by means of a frequency plot to determine an appropriate capping value. The upper tail of the frequency was very long and the samples did not seem to be affecting the deposit. Verification through the log probability plot was done. RPA capped all high grade assays to 2.0 oz/st Au prior to compositing.

Composite statistics for each of the deposits are given in Table 14.7, Table 14.8, Table 14.9, and Table 14.10. Statistical summaries for each of the deposits are illustrated in Figure 14.9, Figure 14.10, Figure 14.11, and Figure 14.12.

**TABLE 14.7**
**SUMMARY STATISTICS OF THE COMPOSITED, CAPPED SAMPLES OF SSX–WEST MAHALA (ZONES 1, 2, 3, AND 9)**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| Waste and Mineralized Wireframe | 766,279 | 0 | 2 | 0.051 | 0.02 | 0.14 |
| All Mineralized Wireframe | 16,130 | 0 | 2 | 0.221 | 0.06 | 0.253 |
| 1002 | 1,032 | 0.001 | 1.06 | 0.13 | 0.01 | 0.111 |
| 1006 | 598 | 0 | 1.688 | 0.151 | 0.05 | 0.224 |
| 1007a | 117 | 0 | 0.679 | 0.177 | 0.02 | 0.14 |
| 1007b | 268 | 0 | 0.54 | 0.16 | 0.01 | 0.115 |
| 1005c | 906 | 0 | 0.855 | 0.125 | 0.01 | 0.106 |
| 9001 | 60 | 0.06 | 0.654 | 0.183 | 0.01 | 0.106 |
| 9002 | 100 | 0.007 | 0.871 | 0.197 | 0.02 | 0.157 |
| 1016 | 42 | 0.001 | 0.374 | 0.158 | 0.01 | 0.076 |
| 1002a | 617 | 0 | 1.761 | 0.232 | 0.06 | 0.252 |
| 1005b | 750 | 0 | 2 | 0.14 | 0.04 | 0.204 |
| 1002b | 434 | 0.004 | 0.473 | 0.119 | 0.01 | 0.077 |
| 1017 | 1,200 | 0 | 1.487 | 0.17 | 0.02 | 0.157 |
| 1011 | 118 | 0.001 | 0.44 | 0.127 | 0.01 | 0.081 |
| 9006 | 246 | 0 | 0.935 | 0.159 | 0.02 | 0.133 |
| 3005 | 256 | 0 | 2 | 0.241 | 0.06 | 0.248 |
| 2002a | 471 | 0 | 1.841 | 0.278 | 0.08 | 0.287 |
| 2991 | 14 | 0 | 1.048 | 0.36 | 0.09 | 0.298 |
| 2008 | 56 | 0 | 0.949 | 0.204 | 0.03 | 0.158 |
| 1024 | 61 | 0.014 | 0.933 | 0.21 | 0.03 | 0.177 |
| 1010 | 961 | 0 | 2 | 0.208 | 0.05 | 0.229 |
| 30032 | 19 | 0.09 | 0.279 | 0.178 | 0 | 0.056 |
| 2009 | 117 | 0 | 1.081 | 0.201 | 0.03 | 0.158 |
| 2007 | 80 | 0 | 0.39 | 0.151 | 0.01 | 0.078 |
| 2002d | 532 | 0 | 2 | 0.173 | 0.03 | 0.172 |
| 2002b | 25 | 0 | 0.441 | 0.168 | 0.02 | 0.131 |
| 2004 | 67 | 0 | 1.167 | 0.285 | 0.07 | 0.272 |
| 3001c | 132 | 0 | 2 | 0.365 | 0.2 | 0.442 |
| 3001a | 361 | 0 | 0.762 | 0.171 | 0.02 | 0.136 |
| 2994 | 17 | 0.008 | 0.471 | 0.246 | 0.03 | 0.164 |
| 1102 | 300 | 0 | 2 | 0.34 | 0.15 | 0.389 |
| 30031 | 37 | 0.002 | 0.678 | 0.209 | 0.02 | 0.153 |
| 2012 | 5 | 0.109 | 0.542 | 0.339 | 0.03 | 0.168 |
| 2992 | 70 | 0.021 | 0.774 | 0.289 | 0.03 | 0.181 |
| 3002 | 256 | 0 | 1.253 | 0.263 | 0.05 | 0.231 |
| 2010 | 37 | 0.003 | 1.34 | 0.37 | 0.13 | 0.366 |
| 2996 | 21 | 0.014 | 0.676 | 0.194 | 0.02 | 0.156 |
| 2002c | 31 | 0.025 | 0.24 | 0.116 | 0 | 0.064 |
| 1020a | 831 | 0 | 1.608 | 0.216 | 0.04 | 0.199 |
| 1103 | 2749 | 0 | 2 | 0.369 | 0.15 | 0.387 |
| 1020b | 93 | 0 | 0.75 | 0.145 | 0.01 | 0.109 |

**TABLE 14.7**
**SUMMARY STATISTICS OF THE COMPOSITED, CAPPED SAMPLES OF SSX–WEST MAHALA (ZONES 1, 2, 3, AND 9)**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| 1025 | 17 | 0.056 | 0.449 | 0.193 | 0.01 | 0.091 |
| 1027 | 68 | 0 | 0.632 | 0.194 | 0.02 | 0.155 |
| 1101 | 795 | 0 | 1.045 | 0.22 | 0.03 | 0.186 |
| 1012 | 317 | 0.007 | 0.948 | 0.211 | 0.03 | 0.166 |
| 1009 | 210 | 0.001 | 0.454 | 0.155 | 0.01 | 0.084 |
| 1029 | 66 | 0.002 | 0.905 | 0.251 | 0.04 | 0.193 |
| 3001b | 56 | 0.059 | 1.02 | 0.251 | 0.04 | 0.199 |
| 1014a | 130 | 0 | 1.766 | 0.265 | 0.07 | 0.257 |
| 1026 | 22 | 0.053 | 0.372 | 0.198 | 0.01 | 0.088 |
| 1014b | 284 | 0 | 1.165 | 0.248 | 0.04 | 0.207 |
| 1028 | 24 | 0.005 | 1.452 | 0.312 | 0.09 | 0.296 |
| 1099a | 13 | 0.091 | 0.61 | 0.185 | 0.02 | 0.132 |
| 2997 | 13 | 0 | 0.592 | 0.179 | 0.02 | 0.14 |
| 3004 | 11 | 0 | 0.286 | 0.177 | 0.01 | 0.088 |
| 2011 | 17 | 0 | 0.554 | 0.153 | 0.02 | 0.131 |

**TABLE 14.8**
**SUMMARY STATISTICS OF THE COMPOSITED, CAPPED SAMPLES OF SSX (ZONES 4, 5, 6, AND 7)**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| Waste and Mineralized Wireframe | 768,432 | 0 | 2 | 0.051 | 0.02 | 0.139 |
| All Mineralized Wireframe | 41,123 | 0 | 2 | 0.195 | 0.04 | 0.193 |
| 5001 | 3,216 | 0 | 1.53 | 0.198 | 0.02 | 0.148 |
| 7051 | 25 | 0.005 | 0.281 | 0.14 | 0.01 | 0.08 |
| 70192 | 476 | 0 | 0.856 | 0.091 | 0.01 | 0.108 |
| 7021 | 693 | 0 | 0.847 | 0.14 | 0.02 | 0.125 |
| 5002 | 320 | 0 | 2 | 0.199 | 0.04 | 0.2 |
| 7022 | 75 | 0.001 | 0.442 | 0.102 | 0.01 | 0.103 |
| 70193 | 491 | 0 | 1.037 | 0.121 | 0.02 | 0.134 |
| 5004 | 40 | 0.02 | 0.79 | 0.304 | 0.04 | 0.207 |
| 5006 | 138 | 0 | 1.207 | 0.209 | 0.04 | 0.203 |
| 5008 | 229 | 0 | 1.09 | 0.188 | 0.02 | 0.154 |
| 70101 | 11 | 0.069 | 0.76 | 0.279 | 0.04 | 0.202 |
| 5028 | 58 | 0 | 0.57 | 0.145 | 0.02 | 0.125 |
| 70081 | 84 | 0 | 1.702 | 0.252 | 0.06 | 0.245 |
| 7002 | 71 | 0 | 0.747 | 0.174 | 0.02 | 0.153 |
| 7005 | 348 | 0 | 1.596 | 0.272 | 0.07 | 0.259 |
| 7056 | 105 | 0 | 0.647 | 0.109 | 0.01 | 0.08 |
| 7003 | 11 | 0.004 | 0.626 | 0.269 | 0.04 | 0.206 |
| 5003 | 72 | 0 | 1.327 | 0.282 | 0.09 | 0.3 |

**TABLE 14.8**
**SUMMARY STATISTICS OF THE COMPOSITED, CAPPED SAMPLES OF SSX (ZONES 4, 5, 6, AND 7)**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| 7004 | 29 | 0.064 | 0.425 | 0.191 | 0.01 | 0.092 |
| 7044 | 1,549 | 0 | 2 | 0.232 | 0.07 | 0.255 |
| 5013 | 26 | 0 | 0.48 | 0.077 | 0.01 | 0.121 |
| 5012 | 763 | 0 | 1.222 | 0.186 | 0.04 | 0.194 |
| 7016 | 133 | 0 | 1.115 | 0.162 | 0.02 | 0.144 |
| 7014 | 272 | 0.004 | 0.72 | 0.183 | 0.02 | 0.124 |
| 50352 | 33 | 0.049 | 0.685 | 0.195 | 0.02 | 0.133 |
| 5010 | 274 | 0 | 1.409 | 0.144 | 0.04 | 0.193 |
| 4002 | 628 | 0 | 1.181 | 0.2 | 0.03 | 0.183 |
| 50232 | 582 | 0 | 0.971 | 0.121 | 0.01 | 0.107 |
| 5021 | 388 | 0 | 1.302 | 0.262 | 0.06 | 0.245 |
| 50231 | 279 | 0 | 0.816 | 0.161 | 0.02 | 0.124 |
| 50351 | 55 | 0.021 | 0.314 | 0.124 | 0 | 0.054 |
| 4015 | 148 | 0 | 0.508 | 0.112 | 0.01 | 0.095 |
| 4009 | 1,037 | 0 | 1.151 | 0.17 | 0.02 | 0.14 |
| 4008 | 573 | 0 | 0.58 | 0.116 | 0.01 | 0.081 |
| 4010 | 116 | 0.013 | 0.533 | 0.117 | 0.01 | 0.071 |
| 40052 | 177 | 0 | 0.918 | 0.143 | 0.01 | 0.099 |
| 40051 | 1811 | 0 | 1.603 | 0.195 | 0.04 | 0.19 |
| 4012 | 287 | 0 | 1.205 | 0.275 | 0.05 | 0.225 |
| 7011 | 21 | 0.015 | 0.659 | 0.228 | 0.03 | 0.16 |
| 4011 | 235 | 0 | 0.563 | 0.148 | 0.01 | 0.092 |
| 4017 | 26 | 0 | 0.187 | 0.099 | 0 | 0.049 |
| 4016 | 14 | 0.083 | 0.3 | 0.167 | 0.01 | 0.075 |
| 5034 | 32 | 0 | 1.274 | 0.197 | 0.06 | 0.241 |
| 5014 | 200 | 0 | 0.912 | 0.192 | 0.02 | 0.148 |
| 5015 | 792 | 0 | 0.808 | 0.153 | 0.02 | 0.135 |
| 5027 | 224 | 0 | 1.004 | 0.161 | 0.02 | 0.125 |
| 6001 | 29 | 0.016 | 0.388 | 0.14 | 0.01 | 0.088 |
| 4020 | 9 | 0.108 | 0.268 | 0.153 | 0 | 0.05 |
| 5019 | 232 | 0 | 0.808 | 0.15 | 0.01 | 0.118 |
| 40182 | 83 | 0.003 | 0.917 | 0.226 | 0.04 | 0.192 |
| 5039 | 72 | 0.001 | 0.478 | 0.133 | 0.01 | 0.073 |
| 6002 | 32 | 0 | 0.506 | 0.158 | 0.01 | 0.101 |
| 6005 | 20 | 0.007 | 0.83 | 0.311 | 0.07 | 0.273 |
| 4003 | 633 | 0 | 1.631 | 0.204 | 0.04 | 0.206 |
| 40041 | 157 | 0 | 0.915 | 0.189 | 0.02 | 0.155 |
| 3005 | 210 | 0.004 | 1.912 | 0.304 | 0.1 | 0.321 |
| 205 | 180 | 0 | 1.556 | 0.267 | 0.06 | 0.236 |
| 6006 | 17 | 0.089 | 0.248 | 0.146 | 0 | 0.047 |
| 6003 | 20 | 0.075 | 0.243 | 0.128 | 0 | 0.049 |
| 5007 | 328 | 0 | 0.636 | 0.167 | 0.01 | 0.121 |
| 7025 | 115 | 0 | 0.437 | 0.146 | 0.01 | 0.093 |

| Table 14.8<br>Summary Statistics of the Composited, Capped Samples of SSX (Zones 4, 5, 6, and 7)<br>Jerritt Canyon Gold LLC – Jerritt Canyon Gold Mine | | | | | | |
|---|---|---|---|---|---|---|
| **Wireframe Codes** | **Count** | **Min** | **Max** | **Mean** | **Variance** | **StDev** |
| 7080 | 2,223 | 0 | 1.5 | 0.259 | 0.03 | 0.187 |
| 7020 | 1,898 | 0 | 2 | 0.321 | 0.1 | 0.309 |
| 7023 | 355 | 0 | 0.753 | 0.238 | 0.02 | 0.141 |
| 7018 | 692 | 0 | 1.359 | 0.172 | 0.03 | 0.181 |
| 5016 | 360 | 0 | 0.69 | 0.163 | 0.02 | 0.131 |
| 50172 | 136 | 0 | 0.459 | 0.129 | 0.01 | 0.09 |
| 4018 | 217 | 0 | 0.925 | 0.147 | 0.02 | 0.154 |
| 5025 | 31 | 0 | 0.856 | 0.301 | 0.07 | 0.257 |
| 5011 | 19 | 0.047 | 0.801 | 0.217 | 0.03 | 0.166 |
| 4022 | 27 | 0.003 | 0.579 | 0.185 | 0.01 | 0.114 |
| 40121 | 50 | 0.025 | 0.625 | 0.245 | 0.02 | 0.155 |
| 7012 | 11 | 0.006 | 0.188 | 0.097 | 0 | 0.067 |
| 4014 | 334 | 0 | 1.285 | 0.207 | 0.04 | 0.207 |
| 4006 | 165 | 0 | 0.668 | 0.172 | 0.01 | 0.115 |
| 6010 | 11 | 0.092 | 0.546 | 0.217 | 0.02 | 0.136 |
| 4021 | 102 | 0 | 1.309 | 0.238 | 0.04 | 0.189 |
| 4013 | 633 | 0 | 1.469 | 0.252 | 0.06 | 0.243 |
| 70191 | 129 | 0 | 0.63 | 0.135 | 0.01 | 0.112 |
| 7024 | 51 | 0.001 | 0.294 | 0.102 | 0.01 | 0.073 |
| 6007 | 34 | 0.065 | 1.01 | 0.238 | 0.05 | 0.213 |
| 6004 | 60 | 0 | 0.28 | 0.128 | 0 | 0.06 |
| 4007 | 28 | 0.038 | 1.188 | 0.369 | 0.08 | 0.286 |
| 4023 | 2 | 0.178 | 0.249 | 0.214 | 0 | 0.05 |
| 5024 | 33 | 0 | 0.398 | 0.122 | 0.01 | 0.092 |
| 501711 | 174 | 0 | 0.846 | 0.244 | 0.03 | 0.175 |
| 50149 | 1,238 | 0 | 1.63 | 0.198 | 0.03 | 0.171 |
| 50171 | 372 | 0 | 0.768 | 0.141 | 0.01 | 0.121 |
| 5036 | 354 | 0 | 0.519 | 0.127 | 0.01 | 0.105 |
| 5022 | 1,201 | 0 | 1.498 | 0.151 | 0.02 | 0.151 |
| 70082 | 113 | 0 | 1.046 | 0.203 | 0.03 | 0.183 |
| 701022 | 13 | 0.075 | 0.409 | 0.165 | 0.01 | 0.087 |
| 7017 | 313 | 0.001 | 0.527 | 0.106 | 0.01 | 0.083 |
| 7013 | 82 | 0.001 | 0.472 | 0.155 | 0.01 | 0.104 |
| 5029 | 485 | 0.001 | 2 | 0.159 | 0.04 | 0.208 |
| 5005 | 129 | 0.002 | 1.595 | 0.28 | 0.08 | 0.288 |
| 5030 | 87 | 0.002 | 1.534 | 0.283 | 0.08 | 0.289 |
| 7015 | 276 | 0.001 | 2 | 0.192 | 0.04 | 0.204 |
| 7000 | 418 | 0.001 | 0.926 | 0.16 | 0.03 | 0.161 |
| 7035 | 2,787 | 0 | 1.807 | 0.208 | 0.03 | 0.179 |
| 7036 | 877 | 0 | 1.218 | 0.131 | 0.01 | 0.121 |
| 7033 | 36 | 0 | 0.51 | 0.219 | 0.02 | 0.145 |
| 7034 | 79 | 0 | 0.395 | 0.107 | 0.01 | 0.092 |
| 7032 | 197 | 0 | 1.167 | 0.115 | 0.03 | 0.163 |

**TABLE 14.8**
**SUMMARY STATISTICS OF THE COMPOSITED, CAPPED SAMPLES OF SSX (ZONES 4, 5, 6, AND 7)**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| 7030 | 124 | 0 | 0.713 | 0.149 | 0.03 | 0.17 |
| 7029 | 50 | 0 | 0.796 | 0.158 | 0.03 | 0.167 |
| 7031 | 18 | 0 | 0.297 | 0.107 | 0.01 | 0.083 |
| 7038 | 2,734 | 0 | 2 | 0.228 | 0.05 | 0.225 |
| 7079 | 298 | 0 | 1.884 | 0.209 | 0.03 | 0.175 |
| 7027 | 77 | 0 | 0.517 | 0.135 | 0.02 | 0.124 |
| 7066 | 30 | 0 | 0.451 | 0.175 | 0.01 | 0.104 |
| 7046 | 384 | 0 | 0.533 | 0.066 | 0.01 | 0.091 |
| 7047 | 201 | 0 | 1.029 | 0.109 | 0.02 | 0.134 |
| 7048 | 22 | 0 | 1.157 | 0.156 | 0.06 | 0.243 |
| 7045 | 230 | 0.006 | 1.41 | 0.224 | 0.04 | 0.203 |
| 7078 | 28 | 0.015 | 0.472 | 0.139 | 0.01 | 0.119 |
| 50101 | 73 | 0 | 0.586 | 0.18 | 0.02 | 0.134 |
| 5009 | 76 | 0 | 0.537 | 0.183 | 0.02 | 0.14 |
| 7049 | 10 | 0.021 | 1.09 | 0.311 | 0.11 | 0.329 |
| 7050 | 58 | 0 | 0.584 | 0.118 | 0.01 | 0.106 |
| 6009 | 14 | 0.016 | 0.738 | 0.254 | 0.05 | 0.223 |
| 4019 | 17 | 0.031 | 0.56 | 0.241 | 0.02 | 0.146 |
| 5026 | 28 | 0.01 | 0.41 | 0.152 | 0.01 | 0.1 |
| 5020 | 126 | 0 | 2 | 0.176 | 0.05 | 0.22 |
| 701021 | 7 | 0.09 | 0.418 | 0.188 | 0.02 | 0.129 |
| 7026 | 18 | 0 | 0.699 | 0.188 | 0.03 | 0.166 |
| 7055 | 74 | 0 | 2 | 0.377 | 0.22 | 0.473 |
| 7062 | 22 | 0.013 | 0.359 | 0.156 | 0.01 | 0.084 |
| 7057 | 42 | 0.003 | 1.677 | 0.265 | 0.08 | 0.287 |
| 7058 | 15 | 0.057 | 0.403 | 0.156 | 0.01 | 0.081 |
| 7063 | 51 | 0 | 0.331 | 0.115 | 0.01 | 0.094 |
| 7075 | 4 | 0.066 | 0.169 | 0.123 | 0 | 0.043 |
| 7060 | 15 | 0 | 0.492 | 0.152 | 0.01 | 0.119 |
| 7042 | 88 | 0 | 0.499 | 0.137 | 0.02 | 0.124 |
| 7040 | 34 | 0.034 | 0.511 | 0.202 | 0.01 | 0.12 |
| 7052 | 6 | 0.107 | 0.567 | 0.286 | 0.03 | 0.183 |
| 7053 | 13 | 0.101 | 0.711 | 0.279 | 0.04 | 0.187 |

**TABLE 14.9**
**SUMMARY STATISTICS OF THE COMPOSITED, CAPPED SAMPLES OF SMITH**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| Waste and Mineralized Wireframes | 621,994 | 0 | 2 | 0.046 | 0.12 | 0.253 |
| All Mineralized Wireframes | 75,500 | 0.0 | 2.0 | 0.192 | 0.178 | 0.111 |
| 4001 | 5,438 | 0.001 | 2 | 0.166 | 0.139 | 0.224 |
| 3005 | 8,655 | 0.001 | 2 | 0.176 | 0.139 | 0.14 |
| 3003 | 1,941 | 0.001 | 2 | 0.217 | 0.283 | 0.115 |
| 4002 | 3,222 | 0.001 | 2 | 0.145 | 0.134 | 0.106 |
| 4004 | 63 | 0.03 | 0.311 | 0.115 | 0.052 | 0.106 |
| 4009 | 16,716 | 0 | 2 | 0.146 | 0.202 | 0.157 |
| 4008 | 203 | 0.001 | 0.314 | 0.122 | 0.051 | 0.076 |
| 9003 | 43 | 0.003 | 1.559 | 0.494 | 0.401 | 0.252 |
| 8001 | 4,186 | 0.001 | 2 | 0.174 | 0.164 | 0.204 |
| 4005 | 349 | 0.001 | 0.79 | 0.173 | 0.123 | 0.077 |
| 4003 | 298 | 0.001 | 1.028 | 0.12 | 0.088 | 0.157 |
| 4007 | 370 | 0.001 | 1.34 | 0.129 | 0.148 | 0.081 |
| 2007 | 612 | 0.001 | 1.106 | 0.158 | 0.157 | 0.133 |
| 8004 | 1,902 | 0.001 | 2 | 0.188 | 0.257 | 0.248 |
| 8006 | 1,283 | 0.001 | 2 | 0.2 | 0.312 | 0.287 |
| 8002 | 549 | 0.001 | 0.975 | 0.168 | 0.138 | 0.298 |
| 8007 | 621 | 0 | 1.25 | 0.177 | 0.177 | 0.158 |
| 9005 | 222 | 0.001 | 1.254 | 0.25 | 0.22 | 0.177 |
| 9004 | 936 | 0.001 | 2 | 0.289 | 0.316 | 0.229 |
| 8005 | 25 | 0.016 | 0.23 | 0.103 | 0.058 | 0.056 |
| 2001 | 8,072 | 0.001 | 2 | 0.178 | 0.219 | 0.158 |
| 9002 | 155 | 0.005 | 2 | 0.345 | 0.358 | 0.078 |
| 9001 | 134 | 0.004 | 1.365 | 0.235 | 0.227 | 0.172 |
| 7007 | 495 | 0.001 | 2 | 0.202 | 0.189 | 0.131 |
| 7004 | 218 | 0.001 | 0.685 | 0.187 | 0.126 | 0.272 |
| 7009 | 91 | 0.003 | 0.633 | 0.142 | 0.113 | 0.442 |
| 7003 | 554 | 0.001 | 1.509 | 0.183 | 0.188 | 0.136 |
| 8008 | 70 | 0.001 | 0.905 | 0.143 | 0.137 | 0.164 |
| 2004 | 4,624 | 0.001 | 2 | 0.328 | 0.352 | 0.389 |
| 1004 | 3,324 | 0 | 1.543 | 0.243 | 0.209 | 0.153 |
| 2002 | 2,480 | 0 | 1.536 | 0.187 | 0.174 | 0.168 |
| 1001 | 2,469 | 0.001 | 1.399 | 0.161 | 0.13 | 0.181 |
| 1006 | 284 | 0.001 | 0.871 | 0.188 | 0.174 | 0.231 |
| 2005 | 263 | 0.001 | 1.485 | 0.236 | 0.245 | 0.366 |
| 2008 | 588 | 0 | 1.978 | 0.159 | 0.208 | 0.156 |
| 3006 | 81 | 0.001 | 0.778 | 0.18 | 0.145 | 0.064 |

**TABLE 14.10**
**SUMMARY STATISTICS OF THE COMPOSITED, CAPPED SAMPLES OF SAVAL 4**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count | Min | Max | Mean | Variance | StDev |
|---|---|---|---|---|---|---|
| Waste and Mineralized Wireframes | 24,248 | 0 | 1.3 | 0.011 | 0 | 0.03 |
| All Mineralized Wireframes | 2,135 | 0 | 1.3 | 0.216 | 0.04 | 0.191 |
| 206 | 33 | 0.038 | 0.289 | 0.132 | 0 | 0.055 |
| 207 | 19 | 0.006 | 0.406 | 0.18 | 0.01 | 0.105 |
| 201 | 561 | 0 | 1.181 | 0.192 | 0.03 | 0.175 |
| 204 | 126 | 0 | 0.435 | 0.121 | 0 | 0.066 |
| 101 | 1,216 | 0.001 | 1.3 | 0.24 | 0.04 | 0.207 |
| 103 | 65 | 0.018 | 0.778 | 0.196 | 0.02 | 0.146 |
| 208 | 29 | 0.096 | 0.576 | 0.178 | 0.01 | 0.122 |
| 209 | 13 | 0.086 | 0.672 | 0.222 | 0.03 | 0.163 |
| 205 | 41 | 0.02 | 0.67 | 0.186 | 0.02 | 0.143 |
| 104 | 32 | 0.001 | 0.985 | 0.286 | 0.08 | 0.29 |

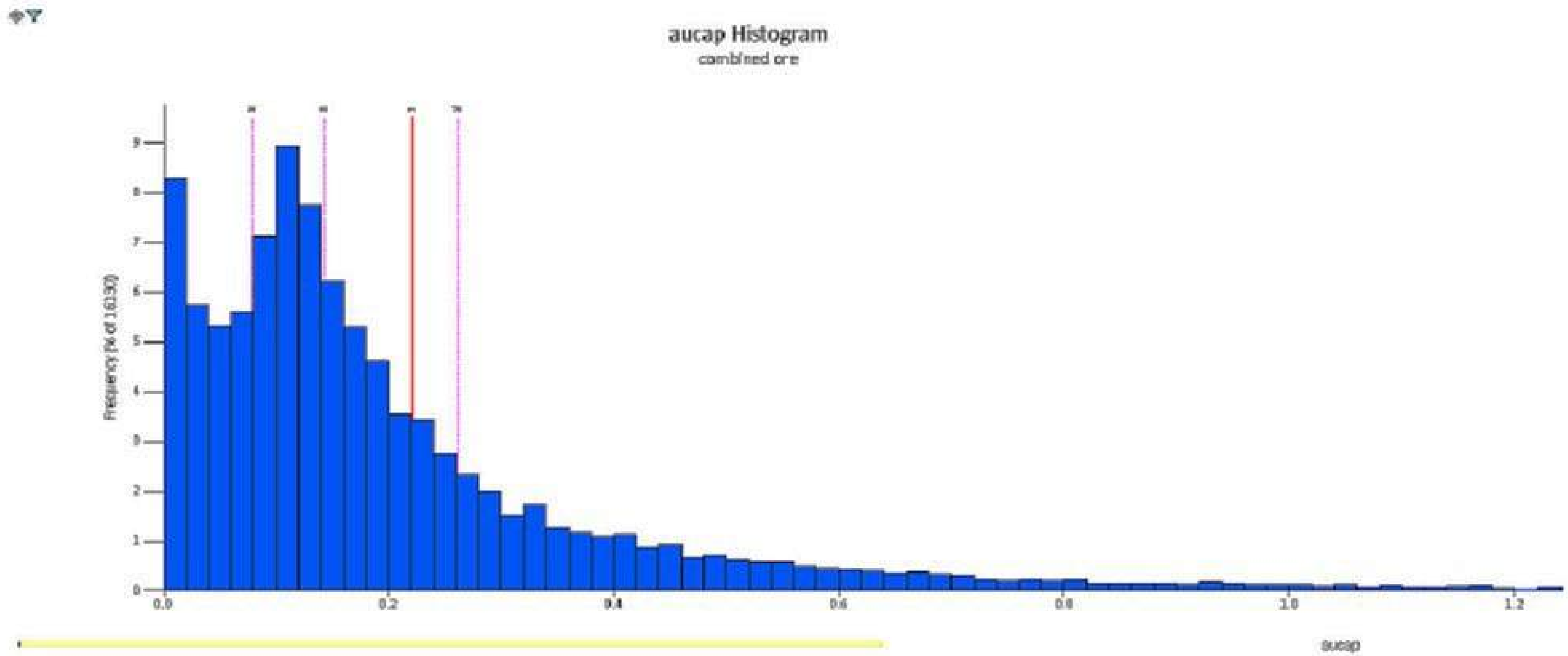


**Figure 14.9. Frequency histogram of composite samples for SSX – Zones 1, 2, 3, and 9**
**Source: RPA, 2018**

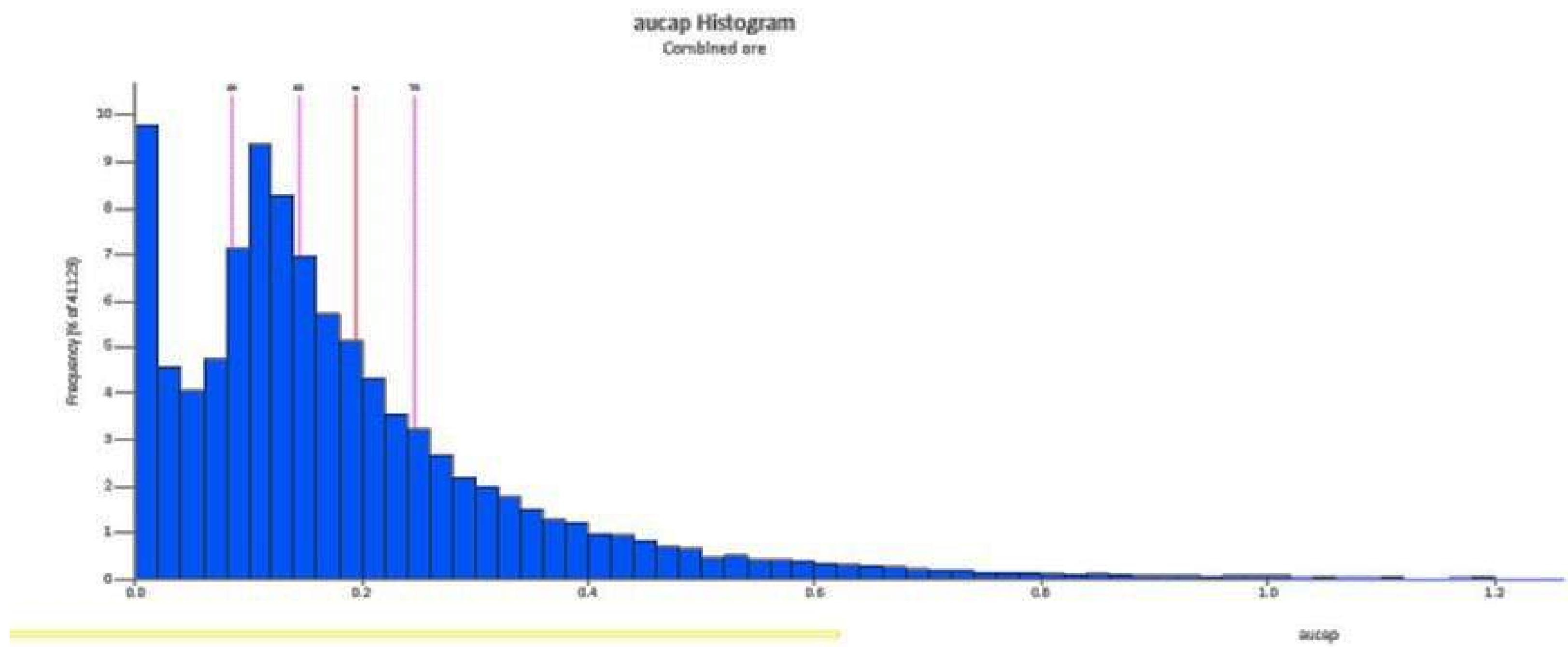


**Figure 14.10. Frequency histogram of composite samples for SSX – Zones 4, 5, 6, and 7**
**Source: RPA, 2018**

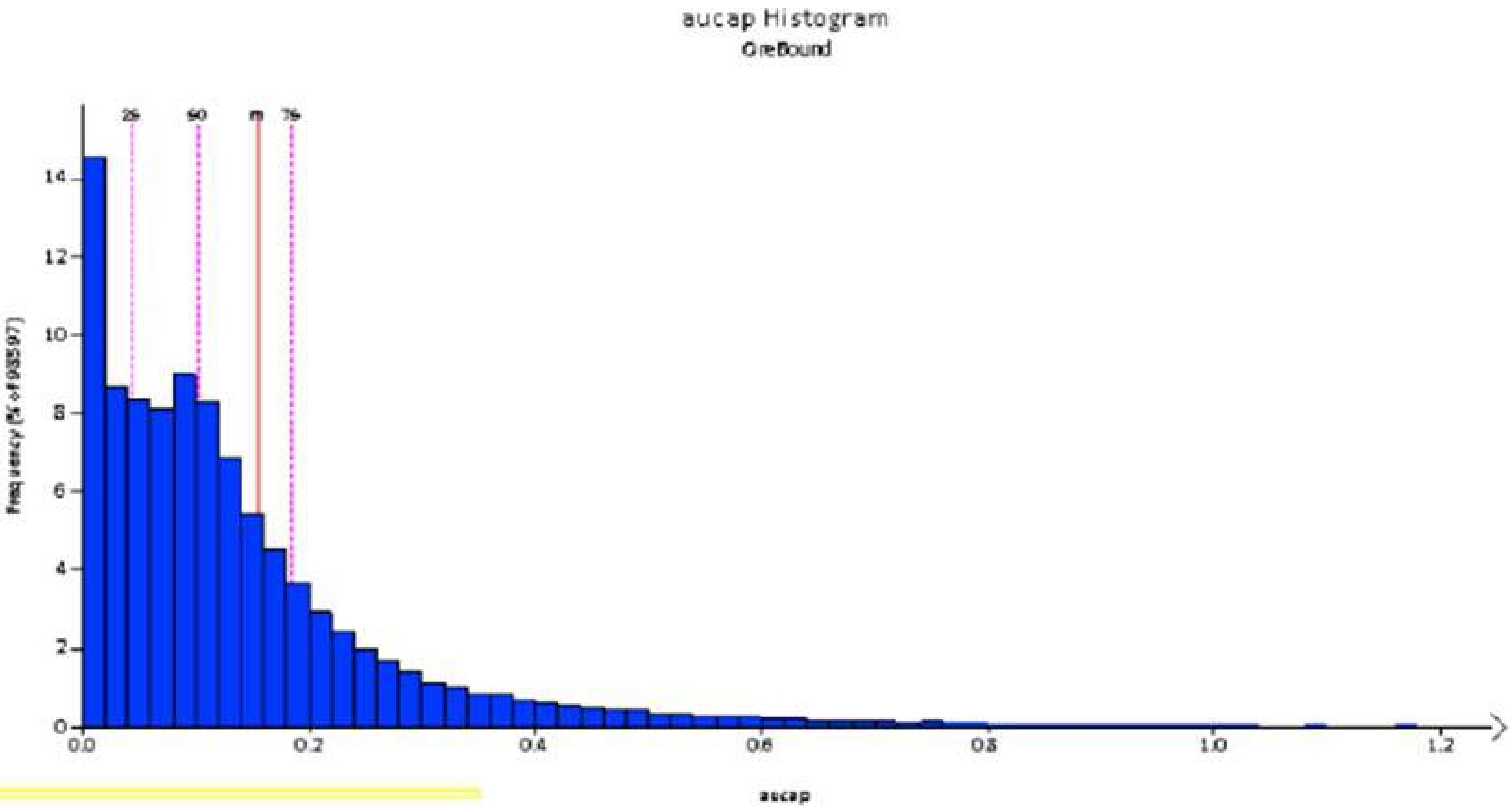


**Figure 14.11. Frequency histogram of composite samples for Smith**
**Source: RPA, 2018**

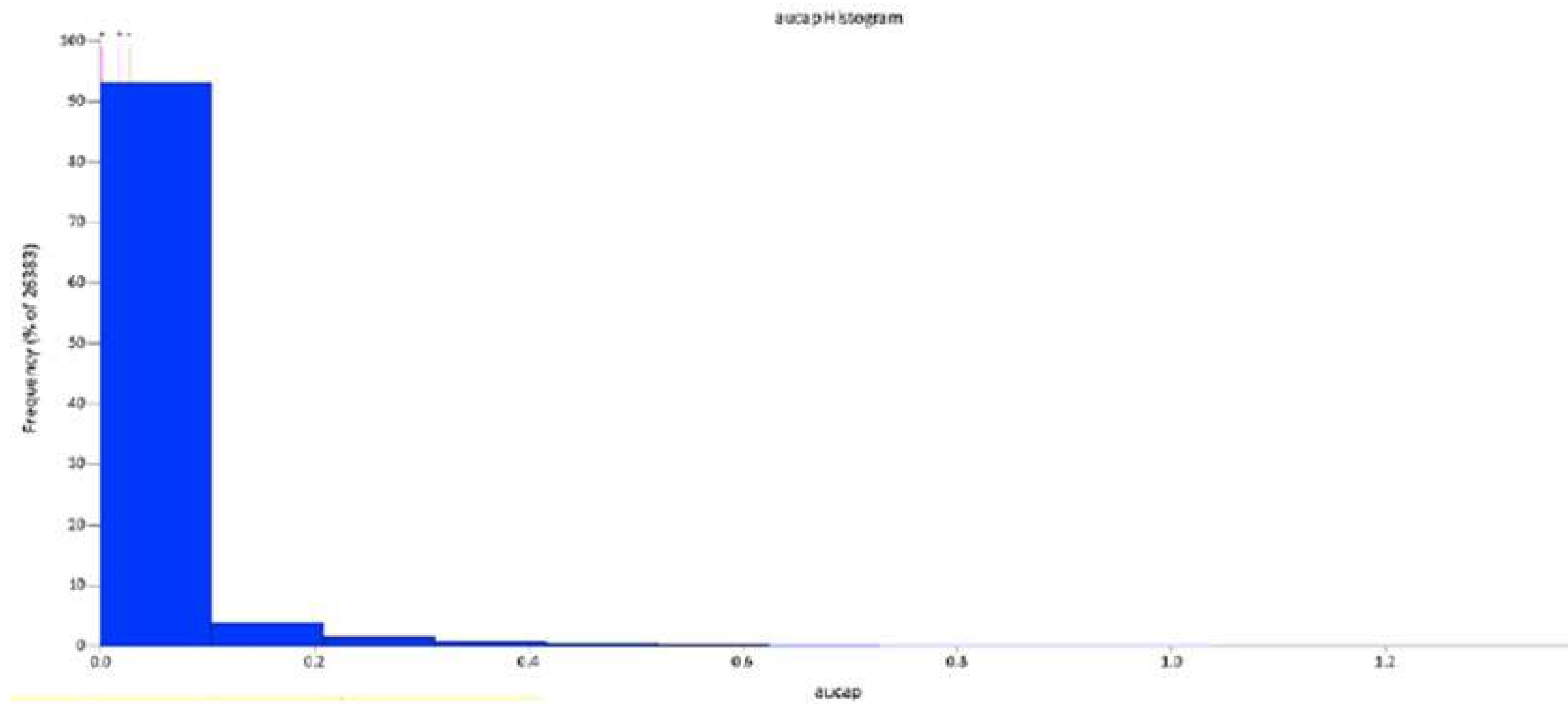


**Figure 14.12. Frequency histogram of composite samples for Saval 4**
**Source: RPA, 2018**

## 14.7 SPECIFIC GRAVITY AND DENSITY

The tonnage factor used for the Jerritt Canyon deposits is 12.6 $ft^3$/st, which is equivalent to the density of 0.0794 st/$ft^3$. Density has not been determined for different lithologies.

Tests, carried out in 2000 at the University of Nevada, Reno and ALS Chemex on 67 samples, defined the weighted tonnage factor as 12.616. Zonge Engineering and Research of Tucson, Arizona tested 50 samples from Mahala, and five samples from Steer. The testing resulted in an average of 12.45 $ft^3$/st for Mahala and 13.0 $ft^3$/st for Steer.

In 2005, tests on 22 ore and 24 waste samples from Starvation Canyon resulted in an average of 11.8 $ft^3$/st for ore and 12.2 $ft^3$/st for waste samples.

## 14.8 VARIOGRAPHY

For the purpose of variography, all samples in a Leapfrog interpolant wireframe were used, which included the mined-out areas and the mineralized wireframes. This approach was taken after an initial study of samples in mineralized wireframes, which resulted in a discontinuous selection of samples that generated short variogram ranges.

In addition, variography studies were also carried out using the composites within the interpolant wireframe.

The variograms showed relative nugget effects of approximately 30% to 50% and ranges of approximately 50 ft (Figure 14.13). Based on the comparative study of different interpolation methods, RPA opted to use $ID^3$ to better model the internal waste areas.

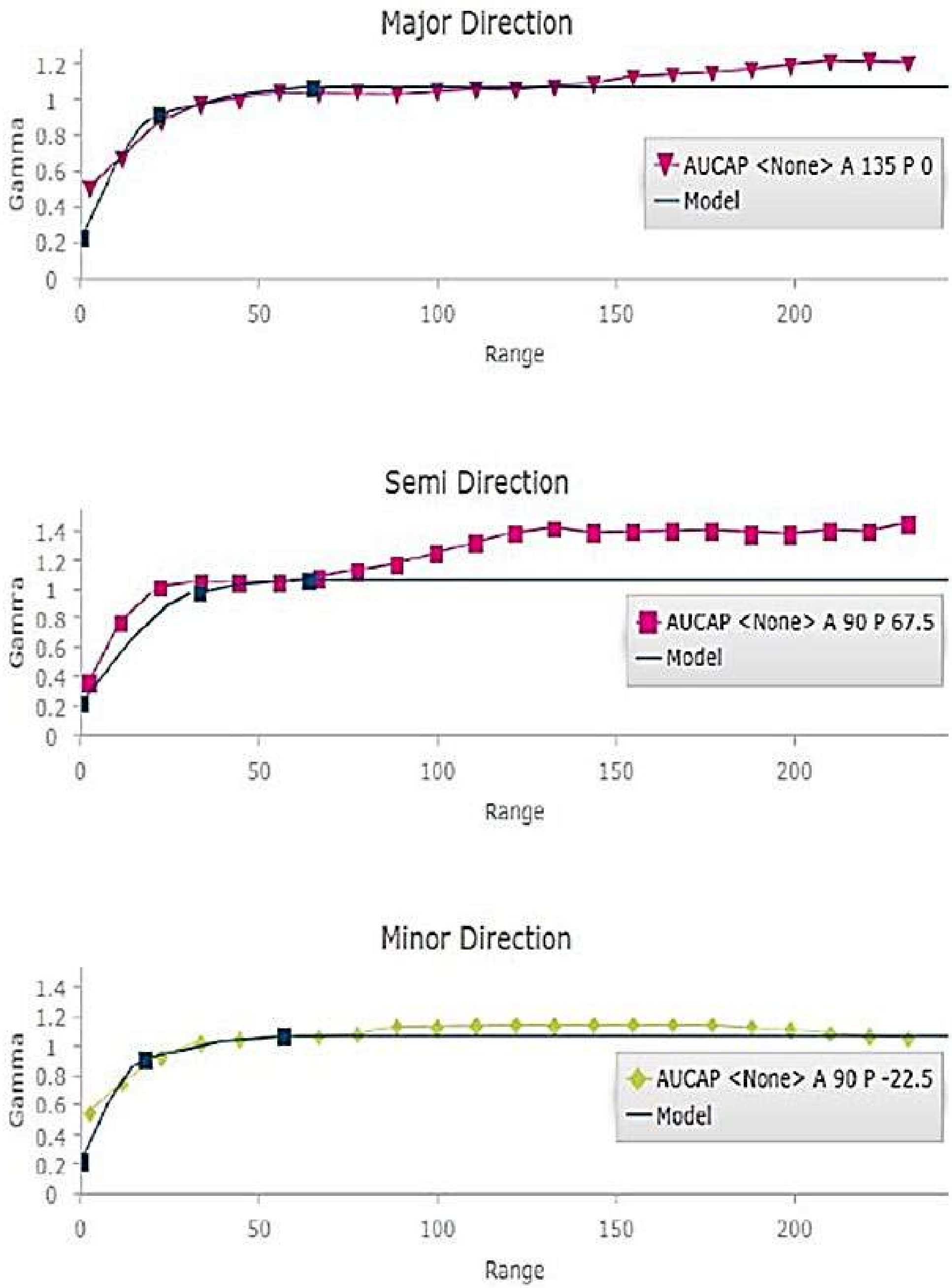


**Figure 14.13. Variograms in major, semi-major, and minor directions**
**Source: RPA, 2018**

## 14.9 BLOCK MODEL CONSTRUCTION

Two separate block models were constructed to model the SSX-West Mahala mines, one including Zones 1, 2, 3, and 9, and the other, Zones 4, 5a, 5b, 6, and 7. The Smith and Saval 4 mines were constructed separately. The size of the block model was defined so as to ensure the best fill of the sub-blocks and blocks in the mineralized wireframes.

The block models were constructed using the Vulcan version 10.1 software package and comprised an array of 5 ft × 5 ft × 5 ft sized blocks using one level of sub-blocking to a minimum size of 2.5 ft × 2.5 ft × 2.5 ft. The models were oriented parallel to the local grid coordinate system (*i.e.*, no rotation or tilt). A number of attributes were created to store such information as rock code, material densities, estimated gold grades, mineral resource classification, mined out material, and the like. The block model origin, dimensions, and attributes for the SSX-West Mahala, Smith, and Saval 4 deposits are provided in Table 14.11 and Table 14.12.

**TABLE 14.11**
**SUMMARY OF THE BLOCK MODEL ORIGINS AND BLOCK SIZES**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Type | X (Easting) | Y (Northing) | Z (Elevation) |
|---|---|---|---|
| **SSX – West Mahala – Zones 1, 2, 3, and 9** | | | |
| Origin | 390,000 | 403,000 | 6,000 |
| Start Offset | 0 | 0 | 0 |
| End Offset | 7,000 | 4,000 | 8,000 |
| Min. Block Size | 2.5 | 2.5 | 2.5 |
| Maximum Block Size (Waste) | 100 | 100 | 100 |
| Maximum Block Size (Mineralized Zone) | 5 | 5 | 5 |
| | | | |
| **SSX – Zones 4, 5a, 5b, 6, and 7** | | | |
| Origin | 383,792 | 404,795 | 4,000 |
| Start Offset | 0 | 0 | 0 |
| End Offset | 9,000 | 4,000 | 7,000 |
| Min. Block Size | 2.5 | 2.5 | 2.5 |
| Maximum Block Size (Waste) | 100 | 100 | 100 |
| Maximum Block Size (Mineralized Zone) | 5 | 5 | 5 |
| | | | |
| **Smith** | | | |
| Origin | 397,180 | 403,963 | 5,800 |
| Start Offset | 0 | 0 | 0 |
| End Offset | 11,000 | 7,000 | 20,00 |
| Min. Block Size | 2.5 | 2.5 | 2.5 |
| Maximum Block Size (Waste) | 100 | 100 | 100 |
| Maximum Block Size (Mineralized Zone) | 5 | 5 | 5 |
| | | | |
| **Saval 4** | | | |
| Origin | 0 | 0 | 0 |
| Start Offset | 389,800 | 409,000 | 6,700 |
| End Offset | 391,000 | 409,900 | 7,400 |
| Min. Block Size | 2.5 | 2.5 | 2.5 |
| Maximum Block Size (Waste) | 100 | 100 | 100 |
| Maximum Block Size (Mineralized Zone) | 50 | 50 | 50 |

| TABLE 14.12<br>SUMMARY OF THE BLOCK MODEL ATTRIBUTES<br>JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE | |
|---|---|
| Au_ipd | Gold grade without composite capping interpolated with inverse distance to the power of 3 |
| Au_ipd5 | Gold grade without composite capping interpolated with inverse distance to the power of 5 |
| Au_nn | Gold grade interpolated with nearest neighbor |
| Au_ok | Gold grade interpolated with ordinary kriging |
| Aucap_ipd | Gold grade with assay capping of 2.0 oz/st Au interpolated with inverse distance to the power of 3 |
| Aucap_ipd5 | Gold grade with assay capping of 2.0 oz/st Au interpolated with inverse distance to the power of 5 |
| Aucap_ipd_b | Final Gold Grades with buffer zones added to the model |
| Class | 1-Measured,2- Indicated, 3- Inferred, 4- Potential, 5 - Buffer |
| Est_id | Uncapped Inverse Distance to the power of 3 - Estimation Pass Number – 1 – First Pass, 2- Second Pass, 3 – Third Pass, and 4 – Fourth Pass |
| Est_id5 | Uncapped Inverse Distance to the power of 5 - Estimation Pass Number – 1 – First Pass, 2- Second Pass, 3 – Third Pass, and 4 – Fourth Pass |
| Est_idcap | Capped Inverse Distance to the power of 3 - Estimation Pass Number – 1 – First Pass, 2- Second Pass, 3 – Third Pass, and 4 – Fourth Pass |
| Est_idcap5 | Capped Inverse Distance to the power of 5 - Estimation Pass Number – 1 – First Pass, 2- Second Pass, 3 – Third Pass, and 4 – Fourth Pass |
| Kst_id | Capped Krigged - Estimation Pass Number – 1 – First Pass, 2- Second Pass, 3 – Third Pass, and 4 – Fourth Pass |
| Kvar | Kriging Variance |
| Mine_b | Mined out variable |
| Resource | Resource name → M-measured, I – Indicated, In – Inferred, P – Potential, and B – Buffer |
| Zone | Mineralized wireframe individual codes |

## 14.10 INTERPOLATION STRATEGY

Gold grades were estimated into blocks using the $ID^3$ interpolation algorithm. A total of four interpolation passes were carried out to estimate the grades in the block model. The search distances were derived from the variograms of all the interpolant samples from the deposit (including mined out samples). The search radii for each pass are shown in Table 14.13. The orientations, *i.e.*, bearing, plunge, and dip of each individual wireframe, were identified and used for the first and second passes. The third and fourth passes used the regional orientation of the deposit. Search ellipse parameters and a few examples of the detailed search orientation of individual mineralized wireframes for the SSX-West Mahala deposit are shown in Table 14.13 and Table 14.14. A similar interpolation strategy was used for Smith and Saval 4.

| **TABLE 14.13**<br>**FOUR PASS SEARCH DISTANCES**<br>**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE** | | | |
|---|---|---|---|
| **Pass Number** | **Major Axis (ft)** | **Semi-Major Axis (ft)** | **Minor Axis (ft)** |
| First | 50 | 30 | 15 |
| Second | 75 | 50 | 25 |
| Third | 100 | 100 | 50 |
| Fourth | 200 | 200 | 100 |

| **TABLE 14.14**<br>**EXAMPLE OF SEARCH ORIENTATIONS OF INDIVIDUAL WIREFRAMES**<br>**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE** | | | | |
|---|---|---|---|---|
| **Wireframe** | **Passes** | **Bearing** | **Plunge** | **Dip** |
| 4010 | First Pass | 100 | -30 | 0 |
| 4010 | Second Pass | 100 | -30 | 0 |
| 4011 | First Pass | 50 | -30 | 0 |
| 4011 | Second Pass | 50 | -30 | 0 |
| 4012 | First Pass | 70 | -20 | 0 |
| 4012 | Second Pass | 70 | -20 | 0 |
| 5024 | Second Pass | 50 | 0 | 0 |
| 5025 | First Pass | 50 | -20 | 0 |
| 5025 | Second Pass | 50 | -20 | 0 |
| 5026 | First Pass | 110 | 20 | 0 |
| 5026 | Second Pass | 110 | 20 | 0 |
| 5027 | First Pass | 110 | -30 | 30 |
| 5027 | Second Pass | 110 | -30 | 30 |
| 7045 | First Pass | 220 | 0 | 30 |
| 7045 | Second Pass | 220 | 0 | 30 |
| 7052 | First Pass | 150 | -10 | 35 |
| 7052 | Second Pass | 150 | -10 | 35 |
| 7053 | First Pass | 110 | 25 | 25 |
| 7053 | Second Pass | 110 | 25 | 25 |

When estimating the grades, the composites were restricted to each wireframe. There were mineralized wireframes which were split because of different orientations in different parts of the wireframe and were coded differently. In a split wireframe, the samples are restricted to the parent wireframe and not the split one. This is because of the spatial proximity of the samples. The wireframe column in Table 14.14 refers to the code used for individual wireframes.

In addition to the above defined search ellipsoid distances and orientations, there were limitations used for the number of samples and number of holes used for interpolation. A summary of all search strategies is provided in Table 14.15.

**TABLE 14.15**
**SUMMARY OF SEARCH STRATEGIES**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Item | Pass 1 | Pass 2 | Pass 3 | Pass 4 |
|---|---|---|---|---|
| Boundary Conditions-Data | Hard | Hard | Hard | Hard |
| Boundary Conditions-Blocks | Wireframe Limit | Write to Wireframe Only | Write to Wireframe Only | |
| Search Ellipses Orientation and Distances | Individual Wireframes | Individual Wireframes | Individual Wireframes | Individual Wireframes |
| | | | | |
| Weight by Sample Length | Y | Y | Y | Y |
| Minimum Number of Samples | 3 | 3 | 3 | 1 |
| Maximum Number of Samples | 8 | 8 | 8 | 5 |
| Max No. of Samples/Hole | 2 | 2 | 2 | n/a |
| Search Ellipse Type | Ellipsoid | Ellipsoid | Ellipsoid | Ellipsoid |
| Estimation Algorithm | $ID^3$ | $ID^3$ | $ID^3$ | $ID^3$ |

An example of a mineralized wireframe with ellipses is shown in Figure 14.14.

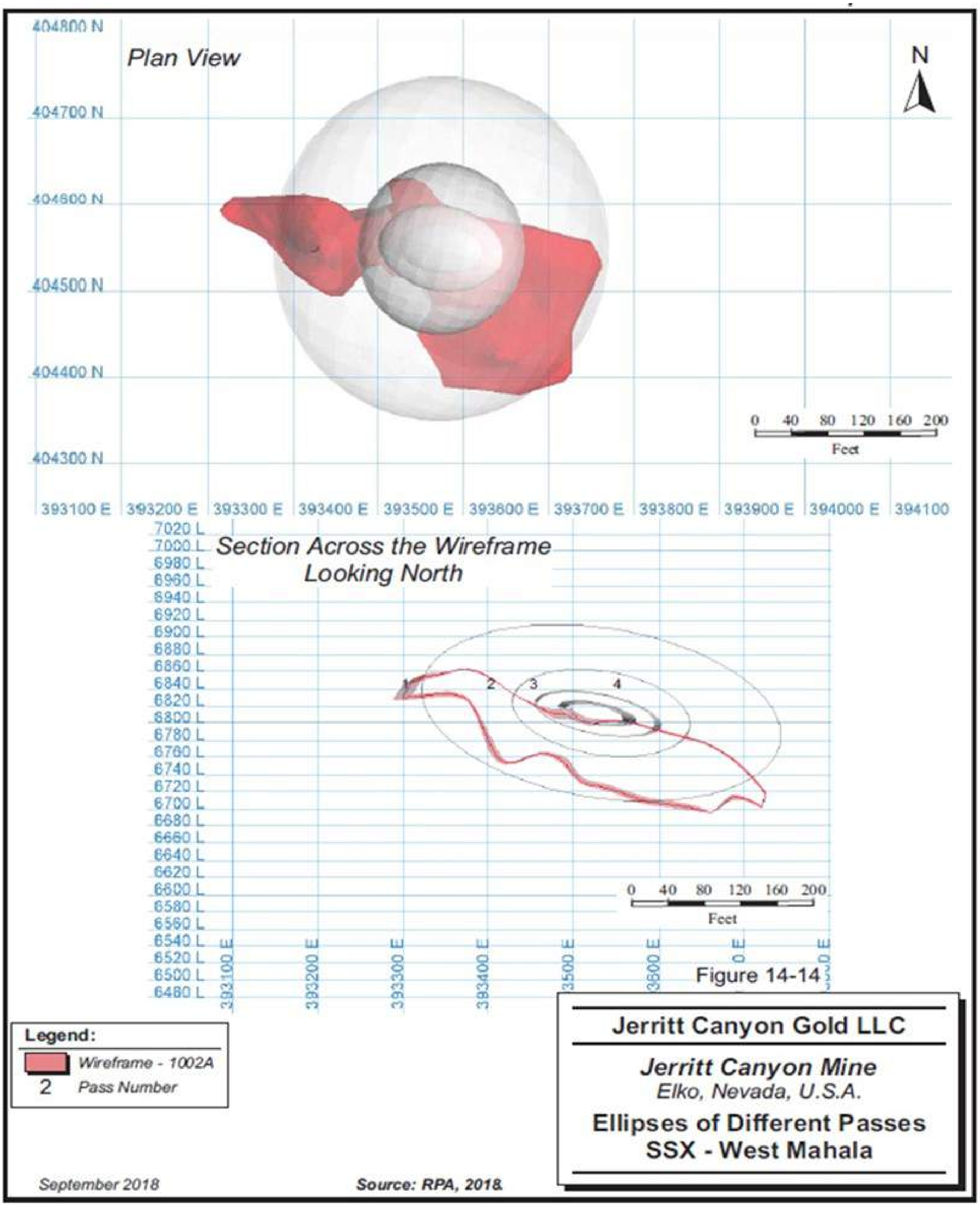


**Figure 14.14. Ellipses of different passes SSX - West Mahala**
**Source: RPA, 2018**

## 14.11 BLOCK MODEL VALIDATION

The May 2017 block models were validated by RPA using the following methods:

- Comparisons of composite and block model statistics;
- Visual comparisons between block and composite grades on plans and sections;
- Visual inspections to confirm all block coding completed properly at each estimation step;
- Comparison with previous model; and
- Comparison with production.

## 14.12 COMPARISON OF COMPOSITES VS BLOCK MODEL

In order to determine the accuracy of the block model, statistical comparison of block model versus composite gold grades were done for all the deposits. The composite and block statistics for the individual wireframes are reasonable. An example of the comparison done for all the individual wireframes of Smith is shown in Table 14.16.

**TABLE 14.16**
**COMPARISONS BETWEEN COMPOSITE AND BLOCK MODEL FOR SMITH**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count Comp | Count BM | Min Comp | Min BM | Min – Variance | Max Comp | Max BM | Max – Variance | Mean Comp | Mean BM | Mean – Variance |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1001 | 2,469 | 33,806 | 0.001 | 0.0005 | 0.00 | 1.399 | 1.2615 | -0.1375 | 0.161 | 0.1561 | -0.0049 |
| 1002 | 1,537 | 18,389 | 0.001 | 0.0008 | 0.00 | 0.999 | 0.7895 | -0.2095 | 0.15 | 0.1491 | -0.0009 |
| 1003 | 357 | 7,879 | 0 | 0.0006 | 0.00 | 0.803 | 0.7726 | -0.0304 | 0.15 | 0.1712 | 0.0212 |
| 1004 | 3,324 | 30,161 | 0 | 0.0005 | 0.00 | 1.543 | 1.3853 | -0.1577 | 0.243 | 0.2169 | -0.0261 |
| 1005 | 96 | 1,786 | 0.001 | 0.0049 | 0.00 | 0.877 | 0.7468 | -0.1302 | 0.159 | 0.1737 | 0.0147 |
| 1006 | 284 | 3,713 | 0.001 | 0.002 | 0.00 | 0.871 | 0.8226 | -0.0484 | 0.188 | 0.1871 | -0.0009 |
| 1007 | 10 | 305 | 0.087 | 0 | -0.09 | 0.306 | 0.3012 | -0.0048 | 0.188 | 0.1498 | -0.0382 |
| 2001 | 8,072 | 98488 | 0.001 | 0.0005 | 0.00 | 2 | 1.9948 | -0.0052 | 0.178 | 0.1632 | -0.0148 |
| 2002 | 2,480 | 27,761 | 0 | 0.0006 | 0.00 | 1.536 | 1.4541 | -0.0819 | 0.187 | 0.1852 | -0.0018 |
| 2003 | 119 | 8,235 | 0.036 | 0.036 | - | 0.326 | 0.3124 | -0.0136 | 0.135 | 0.1295 | -0.0055 |
| 2004 | 4,624 | 40,553 | 0.001 | 0.0011 | 0.00 | 2 | 1.986 | -0.014 | 0.328 | 0.314 | -0.014 |
| 2005 | 263 | 2,746 | 0.001 | 0.0284 | 0.03 | 1.485 | 1.3903 | -0.0947 | 0.236 | 0.224 | -0.012 |
| 2006 | 166 | 1,948 | 0.001 | 0.0051 | 0.00 | 0.906 | 0.7277 | -0.1783 | 0.183 | 0.1721 | -0.0109 |
| 2007 | 612 | 10,827 | 0.001 | 0.0006 | - 0.00 | 1.106 | 1.0989 | -0.0071 | 0.158 | 0.1626 | 0.0046 |
| 2008 | 588 | 5,701 | 0 | 0.0007 | 0.00 | 1.978 | 1.9589 | -0.0191 | 0.159 | 0.1719 | 0.0129 |
| 3001 | 323 | 4,851 | 0.001 | 0.0012 | 0.00 | 1.821 | 1.7862 | -0.0348 | 0.278 | 0.299 | 0.021 |
| 3002 | 123 | 3,226 | 0.035 | 0.0384 | 0.00 | 0.545 | 0.5373 | -0.0077 | 0.162 | 0.1511 | -0.0109 |
| 3003 | 1,941 | 17,577 | 0.001 | 0.002 | 0.00 | 2 | 1.9963 | -0.0037 | 0.217 | 0.2349 | 0.0179 |
| 3004 | 326 | 6,779 | 0.001 | 0.0015 | 0.00 | 2 | 1.8365 | -0.1635 | 0.25 | 0.2585 | 0.0085 |
| 3005 | 8,655 | 77,102 | 0.001 | 0.0006 | 0.00 | 2 | 1.9085 | -0.0915 | 0.176 | 0.1711 | -0.0049 |
| 3006 | 81 | 1394 | 0.001 | 0.001 | - | 0.778 | 0.7536 | -0.0244 | 0.18 | 0.2065 | 0.0265 |
| 4001 | 5,438 | 135,396 | 0.001 | 0.0005 | 0.00 | 2 | 1.7475 | -0.2525 | 0.166 | 0.1649 | -0.0011 |
| 4002 | 3,222 | 52,439 | 0.001 | 0.0012 | 0.00 | 2 | 1.6338 | -0.3662 | 0.145 | 0.1334 | -0.0116 |
| 4003 | 298 | 16,809 | 0.001 | 0.0006 | 0.00 | 1.028 | 0.9166 | -0.1114 | 0.12 | 0.1183 | -0.0017 |
| 4004 | 63 | 3,676 | 0.03 | 0.0424 | 0.01 | 0.311 | 0.2509 | -0.0601 | 0.115 | 0.1163 | 0.0013 |
| 4005 | 349 | 8,835 | 0.001 | 0.0019 | 0.00 | 0.79 | 0.7612 | -0.0288 | 0.173 | 0.146 | -0.027 |
| 4006 | 28 | 552 | 0.033 | 0.0423 | 0.01 | 0.482 | 0.4652 | -0.0168 | 0.175 | 0.16 | -0.015 |
| 4007 | 370 | 7,753 | 0.001 | 0.0006 | 0.00 | 1.34 | 1.279 | -0.061 | 0.129 | 0.1397 | 0.0107 |
| 4008 | 203 | 4,692 | 0.001 | 0.0045 | 0.00 | 0.314 | 0.3069 | -0.0071 | 0.122 | 0.1245 | 0.0025 |
| 4009 | 16,716 | 212,155 | 0 | 0.0006 | 0.00 | 2 | 1.9986 | -0.0014 | 0.146 | 0.1543 | 0.0083 |
| 7001 | 198 | 12,234 | 0.019 | 0.0219 | 0.00 | 1.05 | 0.7476 | -0.3024 | 0.162 | 0.1647 | 0.0027 |
| 7003 | 554 | 10,496 | 0.001 | 0.0017 | 0.00 | 1.509 | 1.4475 | -0.0615 | 0.183 | 0.1908 | 0.0078 |
| 7004 | 218 | 5,682 | 0.001 | 0.0021 | 0.00 | 0.685 | 0.6369 | -0.0481 | 0.187 | 0.1857 | -0.0013 |
| 7005 | 47 | 1,882 | 0.033 | 0.0468 | 0.01 | 0.52 | 0.5197 | -0.0003 | 0.181 | 0.1803 | -0.0007 |
| 7007 | 495 | 8,365 | 0.001 | 0.003 | 0.00 | 2 | 1.8712 | -0.1288 | 0.202 | 0.2254 | 0.0234 |
| 7008 | 342 | 2,890 | 0.001 | 0.0128 | 0.01 | 2 | 1.8548 | -0.1452 | 0.223 | 0.2575 | 0.0345 |
| 7009 | 91 | 2,715 | 0.003 | 0.0158 | 0.01 | 0.633 | 0.6207 | -0.0123 | 0.142 | 0.125 | -0.017 |

**TABLE 14.16**
**COMPARISONS BETWEEN COMPOSITE AND BLOCK MODEL FOR SMITH**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Wireframe Codes | Count Comp | Count BM | Min Comp | Min BM | Min – Variance | Max Comp | Max BM | Max – Variance | Mean Comp | Mean BM | Mean – Variance |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8001 | 4,186 | 65,858 | 0.001 | 0.0006 | 0.00 | 2 | 1.9958 | -0.0042 | 0.174 | 0.1777 | 0.0037 |
| 8002 | 549 | 71,149 | 0.001 | 0 | 0.00 | 0.975 | 0.9358 | -0.0392 | 0.168 | 0.1059 | -0.0621 |
| 8003 | 292 | 4,721 | 0.001 | 0.0017 | 0.00 | 1.21 | 0.9957 | -0.2143 | 0.181 | 0.1935 | 0.0125 |
| 8004 | 1,902 | 46,950 | 0.001 | 0.0005 | 0.00 | 2 | 1.9945 | -0.0055 | 0.188 | 0.207 | 0.019 |
| 8005 | 25 | 2,231 | 0.016 | 0.0166 | 0.00 | 0.23 | 0.2236 | -0.0064 | 0.103 | 0.1023 | -0.0007 |
| 8006 | 1,283 | 18,411 | 0.001 | 0.0005 | 0.00 | 2 | 1.9129 | -0.0871 | 0.2 | 0.1808 | -0.0192 |
| 8007 | 621 | 9,691 | 0 | 0.0007 | 0.00 | 1.25 | 1.169 | -0.081 | 0.177 | 0.1811 | 0.0041 |
| 8008 | 70 | 1,739 | 0.001 | 0.0017 | 0.00 | 0.905 | 0.8486 | -0.0564 | 0.143 | 0.1437 | 0.0007 |
| 9001 | 134 | 18,489 | 0.004 | 0.0051 | 0.00 | 1.365 | 1.3292 | -0.0358 | 0.235 | 0.2496 | 0.0146 |
| 9002 | 155 | 57,408 | 0.005 | 0.006 | 0.00 | 2 | 1.9454 | -0.0546 | 0.345 | 0.326 | -0.019 |
| 9003 | 43 | 722 | 0.003 | 0.0975 | 0.09 | 1.559 | 1.3868 | -0.1722 | 0.494 | 0.5698 | 0.0758 |
| 9004 | 936 | 122,203 | 0.001 | 0.0009 | 0.00 | 2 | 1.974 | -0.026 | 0.289 | 0.2922 | 0.0032 |
| 9005 | 222 | 27,955 | 0.001 | 0.0069 | 0.01 | 1.254 | 1.2425 | -0.0115 | 0.25 | 0.2421 | -0.0079 |
| | | 9,303,06 | | | | | | | | | |
| 1099a | 13 | 4 | 0.091 | 0 | -0.09 | 0.61 | 1.9986 | 1.3886 | 0.185 | 0.04 | -0.145 |

## 14.13 VISUAL COMPARISONS

In order to confirm the accuracy of the local gold grade estimates, visual comparisons were carried out. One example from the visual checks that were carried out for is presented in Figure 14.15, Figure 14.16, and Figure 14.17, which show the block and composite grades on three consecutive sections. Thorough visual comparisons were carried out in section and plan view, and a very close relation was found between block model and composite gold grades.

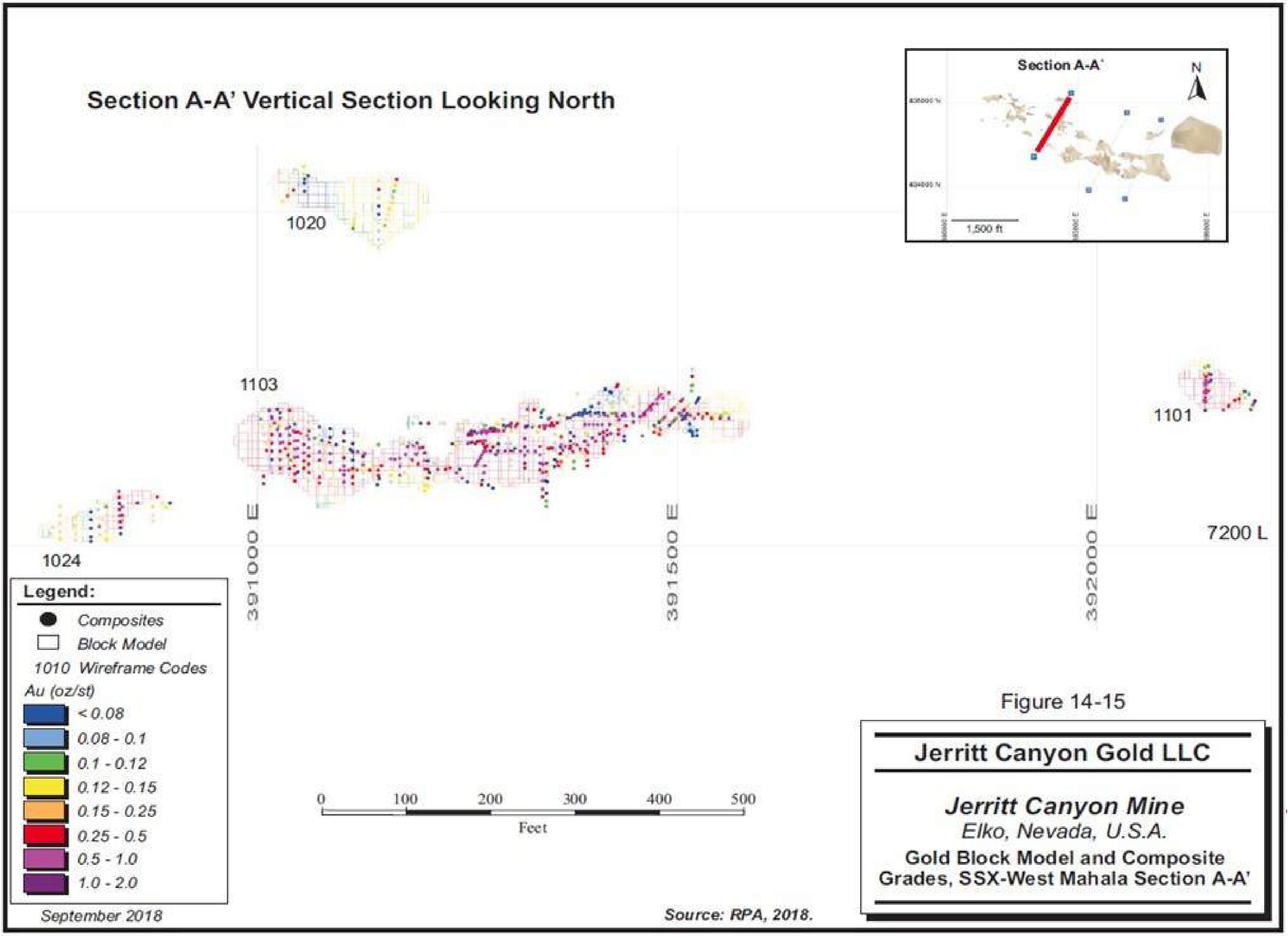


**Figure 14.15. Gold block model and composite grades, SSX-West Mahala Section A-A'**
**Source: RPA, 2018**

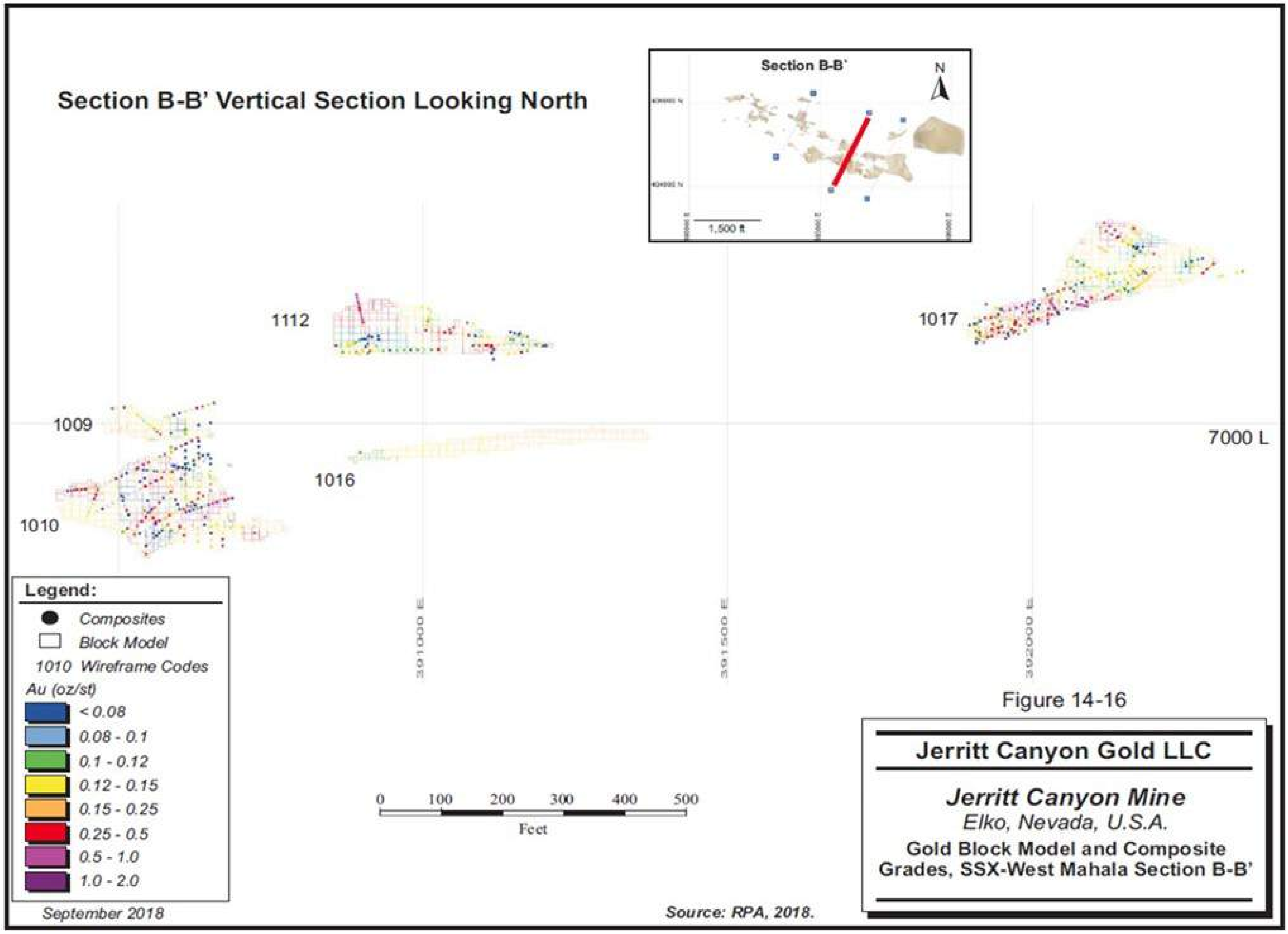


**Figure 14.16. Gold block model and composite grades, SSX-West Mahala Section B-B'**
**Source: RPA, 2018**

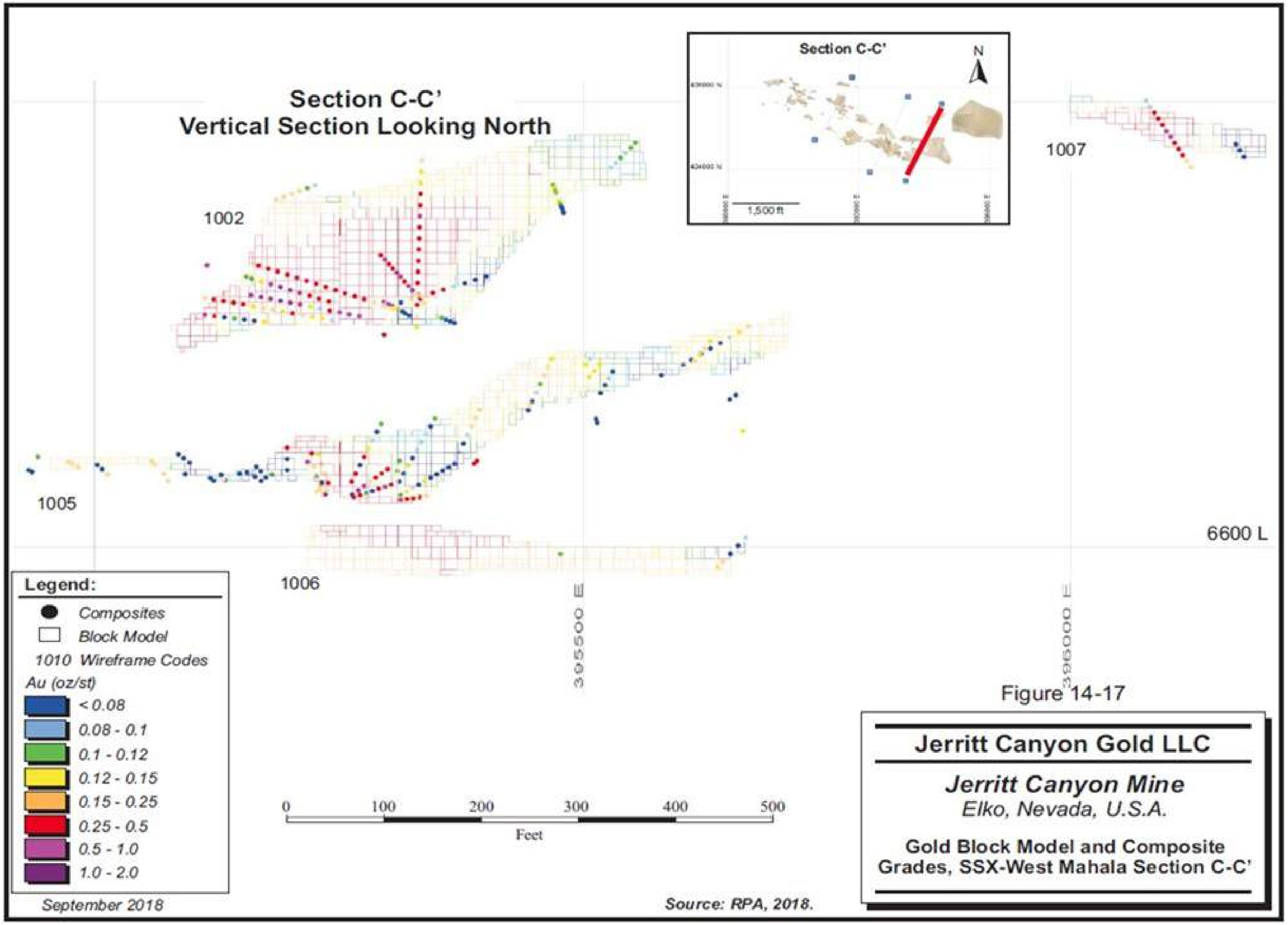


**Figure 14.17. Gold block model and composite grades, SSX-West Mahala Section C-C'**
**Source: RPA, 2018**

## 14.14 RECONCILIATION TO PRODUCTION STATISTICS

Reconciliation activities were conducted that compared the monthly production grades with RPA's resource block model reported in the month-end excavation shapes. An additional 5% dilution was applied to the resource block model gold grade. The reconciliation results for SSX-West Mahala are summarized on a monthly and quarterly basis in Table 14.17. RPA notes that a few months have higher grade variances that may be due to finding and mining lower grade development ore that is not in the resource model or to assuming a fixed 5% dilution everywhere. Overall the reconciliation results look reasonable.

**TABLE 14.17**
**SUMMARY OF RECONCILIATION – JANUARY 2016 TO JUNE 2018**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Timeline | Au_Mined | Au_RPA BMDil | Variance in Percentage |
|---|---|---|---|
| Jan-16 | 0.156 | 0.163 | 104% |
| Feb-16 | 0.215 | 0.189 | 88% |
| Mar-16 | 0.192 | 0.175 | 91% |
| Apr-16 | 0.183 | 0.178 | 97% |
| May-16 | 0.188 | 0.173 | 92% |
| Jun-16 | 0.186 | 0.173 | 93% |
| Jul-16 | 0.133 | 0.145 | 109% |
| Aug-16 | 0.171 | 0.184 | 108% |
| Sep-16 | 0.175 | 0.177 | 101% |
| Oct-16 | 0.181 | 0.196 | 108% |
| Nov-16 | 0.178 | 0.173 | 97% |
| Dec-16 | 0.181 | 0.175 | 97% |
| Jan-17 | 0.174 | 0.193 | 111% |
| Feb-17 | 0.184 | 0.196 | 107% |
| Mar-17 | 0.162 | 0.17 | 105% |
| Apr-17 | 0.194 | 0.189 | 97% |
| May-17 | 0.167 | 0.174 | 104% |
| Jun-17 | 0.153 | 0.156 | 102% |
| Jul-17 | 0.155 | 0.198 | 128% |
| Aug-17 | 0.198 | 0.232 | 117% |
| Sep-17 | 0.187 | 0.185 | 99% |
| Oct-17 | 0.183 | 0.182 | 99% |
| Nov-17 | 0.181 | 0.179 | 99% |
| Dec-17 | 0.194 | 0.208 | 107% |
| Jan-18 | 0.201 | 0.189 | 94% |
| Feb-18 | 0.193 | 0.198 | 103% |
| Mar-18 | 0.198 | 0.193 | 98% |
| Apr-18 | 0.214 | 0.202 | 95% |
| May-18 | 0.199 | 0.230 | 116% |
| Jun-18 | 0.216 | 0.290 | 134% |

| TABLE 14.17<br>SUMMARY OF RECONCILIATION – JANUARY 2016 TO JUNE 2018<br>JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE | | | |
|---|---|---|---|
| **Timeline** | **Au_Mined** | **Au_RPA BMDil** | **Variance in Percentage** |
| Q1-2016 | 0.188 | 0.176 | 94% |
| Q2-2016 | 0.186 | 0.174 | 94% |
| Q3-2016 | 0.157 | 0.168 | 107% |
| Q4-2016 | 0.180 | 0.180 | 100% |
| Q1-2017 | 0.172 | 0.184 | 107% |
| Q2-2017 | 0.173 | 0.172 | 99% |
| Q3-2017 | 0.176 | 0.202 | 115% |
| Q4-2017 | 0.193 | 0.187 | 97% |
| Q1-2018 | 0.197 | 0.194 | 98% |
| Q2-2018 | 0.244 | 0.240 | 98% |

## 14.15 MINERAL RESOURCE CLASSIFICATION CRITERIA

The definitions for resource categories used in this report are consistent with those defined by CIM (2014) and adopted by NI 43-101. In the CIM classification, a Mineral Resource is defined as "a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction." Mineral Resources are classified into Measured, Indicated, and Inferred categories. A Mineral Reserve is defined as the "economically mineable part of a Measured and/or Indicated Mineral Resource" demonstrated by studies at Pre-Feasibility or Feasibility level as appropriate. Mineral Reserves are classified into Proven and Probable categories.

In respect of the block model, all blocks estimated in the first estimation pass were assigned a preliminary classification of Measured Mineral Resources. Those blocks estimated in the second estimation pass were assigned a preliminary classification of Indicated Mineral Resources. Those blocks estimated in the third estimation pass were assigned a preliminary classification of Inferred Mineral Resources. Those blocks estimated in the fourth estimation pass are considered to be exploration potential, which needs more in-fill drilling to be upgraded to Mineral Resource.

The definition of categories in the Mineral Resource estimate is based primarily on the search passes, however, visual and geological interpretation have also been used. The classification methodology is based on the following:

- **Measured:** Based on well drilled areas with drill hole spacing up to 50 ft. Most areas supported by drill holes spaced at approximately 10 ft or 20 ft.
- **Indicated:** Based on drill hole spacing up to approximately 75 ft.
- **Inferred:** Based on drill hole spacing up to approximately 100 ft.

Exploration potential blocks, based on drill hole spacings up to approximately 200 ft, were assigned "4" codes.

Each resource wireframe was manually classified visually. Classification polygons were used for wireframes with multiple classification categories.

### 14.15.1 Responsibility for the Resource Estimate

Mr. Luke Evans, M.Sc., P.Eng. and Mr. Praveen Mishra, M.Sc., MBA, MAusIMM CP (Geo) take responsibility for the Mineral Resource estimates for the Jerritt Canyon properties presented in this report. Messrs. Evans and Mishra are Qualified Persons, as defined in NI 43-101 and are independent of JCG.

### 14.15.2 Cut-off Grade

RPA applied a breakeven cut-off grade (COG) of 0.10 oz/st Au to estimate the Mineral Resource. The economic parameters used to calculate the COG are provided below:

- **Au price:** US$1,500/oz
- **Mining, processing, and general and administrative cost:** US$130 per ton
- **Metal recovery:** 86%

## 14.16 MINERAL RESOURCE

A Mineral Resource was estimated for all the deposits using a cut-off grade of 0.10 oz/st Au. The resources were estimated under and above the water table and it was found that 78% of the total Measured and Indicated Mineral Resources and 36% of the Inferred Mineral Resources were above the water table. Total resources are tabulated in Table 14.1. Resources located under the water table are tabulated in Table 14.18, and resources located above the water table are tabulated in Table 14.19.

**TABLE 14.18**
**MINERAL RESOURCES AT THE JERRITT CANYON AS AT JUNE 30, 2018 ABOVE WATER TABLE**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Mine/Deposit | Measured | | | Indicated | | | Measured and Indicated | | | Inferred | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (tons) | Au (oz/st) | Contained Gold (oz) | (tons) | Au (oz/st) | Contained Gold (oz) | (tons) | Au (oz/st) | Contained Gold (oz) | (tons) | Au (oz/st) | Contained Gold (oz) |
| Smith | 1,440,336 | 0.176 | 253,499 | 139,483 | 0.174 | 24,270 | 1,579,819 | 0.065 | 277,769 | 29,751 | 0.148 | 4,403 |
| SSX | 2,541,159 | 0.210 | 533,643 | 81,819 | 0.202 | 16,527 | 2,622,978 | 0.210 | 550,171 | 1,248,733 | 0.204 | 254,742 |
| West Mahala | | | | | | | | | | 118,366 | 0.077 | 9,114 |
| Saval 4 | 179,081 | 0.209 | 37,428 | 37,261 | 0.221 | 8,235 | 216,342 | 0.211 | 45,663 | 62,350 | 0.167 | 10,412 |
| | | | | | | | | | | | | |
| **Total** | **4,160,576** | **0.198** | **824,571** | **258,563** | **0.190** | **49,032** | **4,419,139** | **0.158** | **873,603** | **1,459,200** | **0.191** | **278,671** |

**TABLE 14.19**
**MINERAL RESOURCES AT THE JERRITT CANYON AS AT JUNE 30, 2018 BELOW WATER TABLE**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Mine/Deposit | Measured | | | Indicated | | | Measured and Indicated | | | Inferred | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (tons) | Au (oz/st) | Contained Gold (oz) | (tons) | Au (oz/st) | Contained Gold (oz) | (tons) | Au (oz/st) | Contained Gold (oz) | (tons) | Au (oz/st) | Contained Gold (oz) |
| Smith | 615,397 | 0.263 | 161,850 | 408,159 | 0.275 | 112,244 | 1,023,556 | 0.268 | 274,093 | 126,242 | 0.299 | 37,746 |
| SSX | | | | 282,216 | 0.191 | 53,903 | 282,216 | 0.191 | 53,903 | 565,043 | 0.165 | 93,232 |
| West Mahala | | | | | | | | | | 1,719,764 | 0.206 | 354,271 |
| Saval 4 | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| **Total** | **615,397** | **0.263** | **161,850** | **690,374** | **0.241** | **166,147** | **1,305,772** | **0.251** | **327,996** | **2,411,049** | **0.201** | **485,250** |

## 15.0 MINERAL RESERVE ESTIMATES

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

There is no current Mineral Reserve estimate for the mine.

# 16.0 MINING METHODS

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

*Underground operations began in 1993 at the West Generator and Murray Mine. Underground operations at Steer Saval Extension (SSX) started in 1997. Underground development at the Lee Smith Mine (Smith Mine) was accessed through the Dash open pit* [*Behre Dolbear, 2020*]. The Smith and SSX underground mines are currently operational using mining contractors. The Saval 4 mine and the West Mahala zone contained within the SSX mine are owner operated.

The Mine is challenged with high dilution caused by current mining method design parameters and project economics, as well as mineralization zones with inadequate mass or thickness to be economically recovered at current gold prices.

## 16.1 STOPING METHODS

The cut-and-fill stoping method is used for production from the Smith and SSX mines, including the West Mahala zone. Minimum mining openings are 15 ft × 15 ft and widths of up to 25 ft where justified by the ore width. Stopes are mined using an underhand method in a top down sequence.

The Saval 4 mine uses the sublevel longhole mining method, with primary stope mine openings of 20 ft wide × 15 ft high and typical stope dimensions of 20 ft wide × 75 ft high and 80 ft long. Stopes are mined bottom up using primary-secondary sequencing.

Ore is hauled to surface stockpiles using mine haul trucks for grade control and contractor haulage to the mill feed stockpile.

These methods have been employed successfully at Jerritt Canyon since underground operations began. Based on the site visit, RPA considers the mining methods to be adequately applied.

## 16.2 MINE DEVELOPMENT

The Smith, SSX, West Mahala, and Saval 4 underground mines are all accessed by way of surface portals and 15 ft × 15 ft declines typically grading 12% to 15%. Underground lateral development including level accesses and stope accesses is generally designed to be 15 ft × 15 ft. Cut-and-fill stope are mined in up to 5 lifts with access drift gradients varying from +15% to -15%. All aspects of the mining cycle are fully mechanized with excavations created using conventional drill, blast, muck, and support techniques.

## 16.3 GEOMECHANICS AND GROUND SUPPORT

Gold mineralization at Jerritt Canyon is hosted by Hanson Creek Formation units I to III and the lower part of the Roberts Mountains Formation. The Hanson Creek host rock at Jerritt Canyon has a fair to poor classification with Rock Mass Rating (RMR) values typically in the 30 to 40 range.

Golder Associates, Inc. (Golder) completed a preliminary geotechnical assessment of the Starvation Canyon underground area of the Jerritt Canyon Mine in 2012 (Golder, 2012). Gold mineralization at Starvation Canyon occurs at the Hanson Creek II-III contact. Geotechnical data was collected from 12 bore holes included logging for geotechnical parameters and bore hole televiewer surveys to collect structural orientations. The assessment concluded that a rock mass quality distribution in both mineralization and host rock consisted of 75% Good to Very Good (RMR'76>61), 15% Fair (RMR'76 of 41 to 61), and the remaining 10% Poor to Very Poor (RMR'76 <41).

Mine openings at all mines are primarily supported with 6 ft split sets on a 3 ft × 3 ft pattern with 6-gauge wire mesh and supplemented with shotcrete in areas of poor rock mass quality.

## 16.4 BACKFILL

Backfilling of production voids is completed using a cement consolidated rock fill, which is produced by crushing and screening mine waste. Cement content varies from 5% to 7% for adjacent and undercut mining, with the majority of fill placed with 7% cement content. Cemented rock fill is mixed at batch plants located near the portal of each mine and hauled underground by mine haul trucks. In cut and fill mines, cemented rock fill is loaded into cut and fill stopes using loaders and pushed tight to the back using a dozer or loader. At Saval 4 mine, the haul truck dumps cemented rock fill directly into the stope and loaders push the fill into the stope after the fill reaches the level.

## 16.5 HYDROGEOLOGY

A portion of the Mineral Resources are located below the ground water table (approximately 6600 ft elevation) and will require dewatering. Dewatering infrastructure, including pumps, dewatering wells and water treatment facility, is partially completed.

## 16.6 MINING EQUIPMENT

The mining cycle is completed with trackless equipment, including drill jumbos, bolters, production drills, loaders, and haul trucks. The owner and contractor fleets are summarized in Table 16.1 and Table 16.2.

**TABLE 16.1**
**OWNER'S PRIMARY MINING FLEET**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Equipment Type/Size | Quantity |
|---|---|
| Jumbo Drill | 2 |
| Bolter | 3 |
| LHD Loader (6 cu. yd.) | 4 |
| Haul Truck (30T) | 6 |
| Longhole Drill | 3 |
| ANFO Loader | 1 |
| Cement Truck | 3 |
| Shotcreter | 1 |
| Scissor Truck | 1 |
| Jammers | 1 |

| TABLE 16.2<br>CONTRACTOR'S PRIMARY MINING FLEET<br>JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE | |
|---|---|
| **Equipment Type/Size** | **Quantity** |
| Jumbo Drill | 5 |
| Bolter | 7 |
| LHD Loader (6 cu. yd.) | 11 |
| Haul Truck (30T) | 13 |
| Longhole Drill | 4 |
| ANFO Loader | 4 |
| Cement Truck | 2 |
| Shotcreter | 2 |
| Scissor Truck | 1 |
| Jammers | 6 |

## 16.7 PRODUCTION RATE

A long term operating plan has not been prepared to convert Mineral Resources to Mineral Reserves although JCG forecasts production from the four mines through 2018. The four mines are planning to produce, on average, 2,500 stpd at an average grade of 0.17 oz/st Au for the remainder of 2018.

## 17.0 RECOVERY METHODS

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

## 17.1 PROCESSING PLANT

The processing facilities at Jerritt Canyon are designed to operate at a rate of 4,500 stpd with an operating availability of 90% and are permitted to operate at 6,000 stpd. The facilities include:

- Primary crushing;
- Ore drying;
- Secondary crushing;
- Tertiary crushing;
- Dry grinding;
- Roasting;
- Thickening;
- Carbon-in-leach (CIL);
- Carbon stripping;
- Carbon reactivation;
- Electrowinning;
- Electrowinning sludge refining;
- Oxygen plant;
- Cooling pond;
- Water evaporation pond; and
- Tailings impoundment.

Ore is delivered to the ROM area from the mines. The process flow sheet is shown on Figure 17.1.

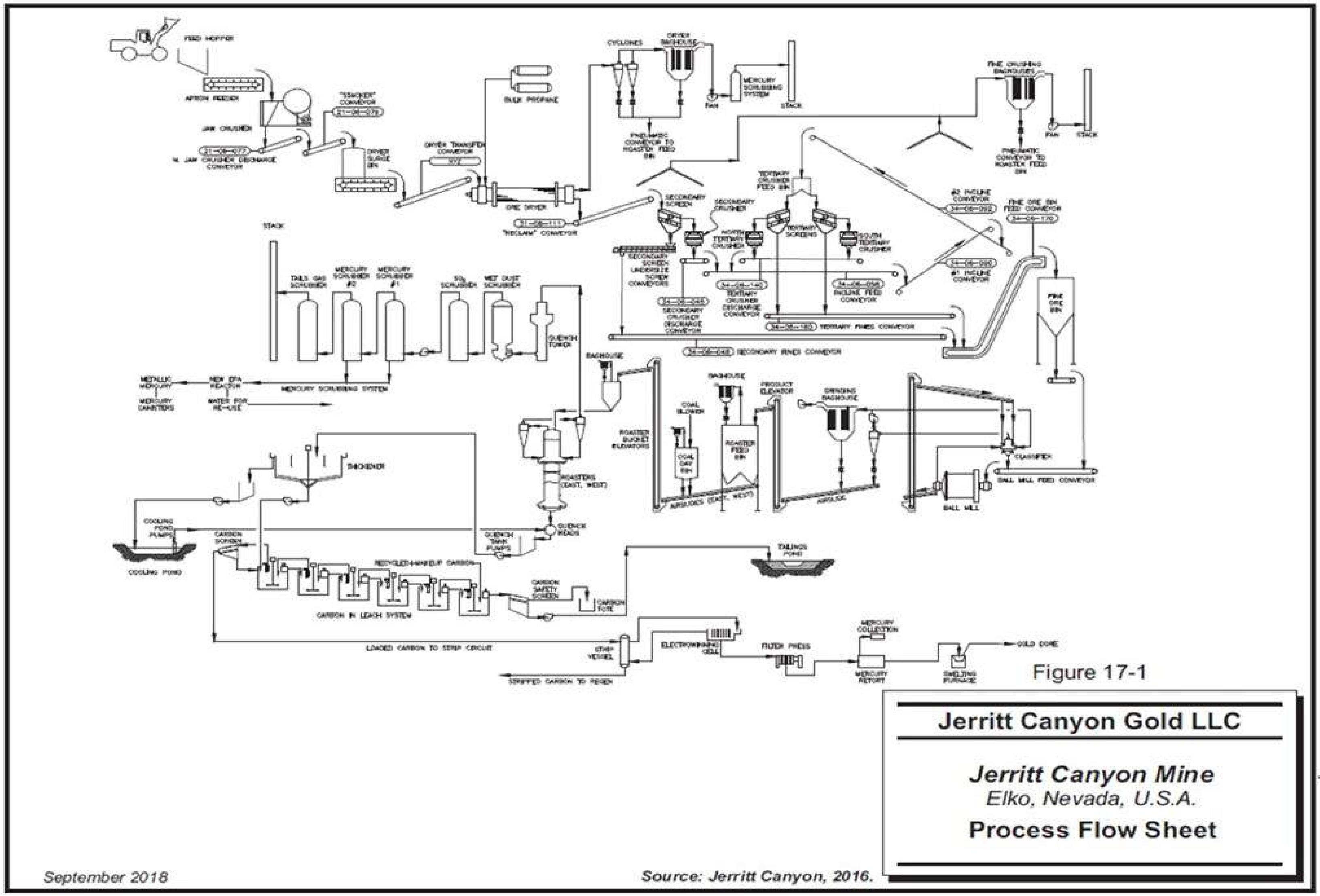


**Figure 17.1. Process flow sheet**
**Source: RPA, 2018**

### 17.1.1 Primary Crushing

ROM ore is crushed to minus six inches with a 36 in. × 42 in., 200 hp jaw crusher.

### 17.1.2 Dryer

Crushed ore from the primary crushing circuit is fed to the propane-fired dryer via 100 st surge bin and a 48 in. by 20 in. apron feeder. The Heyl and Patterson dryer is 14 ft × 60 ft, driven by a 350 hp variable speed motor. Rotation speed is two to four revolutions per minute. The dryer shell contains 300 lifters (*i.e.*, flights). The feed end of the dryer is equipped with a Hauck special open fired Starjet Sj750 Ratiomatic burner. Feed rate to the dryer is controlled to maintain ore discharge moisture less than one percent. The discharge air from the dryer goes through two pulse-jet type bag houses, each containing 810 bags. Gas discharge from the bag houses is fed to a 56 ft, dual bed wet scrubber to remove remaining particles and mercury. Each bed contains 15 ft of Tri-Mer packing.

Material from the baghouse is moved with an FL Smidth Fuller-Kinyon pump directly to the roaster feed bin.

### 17.1.3 Fine Crushing

Dried ore from the dryer is conveyed to the secondary crushing vibrating screen, this is a 5 ft × 12 ft double-deck screen with 20 mm top deck screen panels and 7 millimeter bottom deck screen panels. The screen oversize is fed to the 4.25 ft standard Omnicone crusher. The -7 millimeter screen undersize by-passes the secondary crusher and is transported by screw conveyor and a standard conveyor belt to the high angle conveyor belt that joins the material on the fines conveyor belt from the crushing circuit. The fine material is transported to the fine ore bin (FOB). Approximately 30% of the material discharging from the dryer discharge is -7 millimeter.

Ore from the secondary crusher is conveyed to the 100 st tertiary crusher feed bin. The bin has two discharge points that each feed a 6 ft × 16 ft double-deck vibrating screen. The top deck of the screens has ¾ in. openings and the bottom decks have ¼ in. openings. Oversize from each screen is fed to a 4.25 ft short head Omnicone crusher. The -¼ in. material by-passes the tertiary crushers and reports to fines conveyor that transports the material to a high angle conveyor that discharges to the FOB. The FOB is 2,000 st. The material stored in the FOB feeds the grinding circuit.

The fine crushing circuit is served by a north and a south baghouse. The fine material collected in the north baghouse is pneumatically conveyed to the roaster feed bin (RFB) by a puker system. The south baghouse has a FL Smidth Fuller-Kinyon pump to move fine material collected in the baghouse to the RFB.

### 17.1.4 Grinding

Ore from the FOB is conveyed to the 14.5 ft × 18.5 ft ball mill. The grinding circuit was designed to reduce the ore from 100% passing (P100) one quarter inch ore to P100 35 mesh (*i.e.*, 500 μm). The ball mill is driven by a 2,750 hp synchronous motor. The mixed ball charge is approximately 40% by volume. The makeup ball sizes are 2.5 in., 2.0 in., and 1.5 in. Ore passes through the discharge grates to an air slide and then to a bucket product elevator that transfers the ground material to an Osepa air classifier. The classifier oversize reports back to the ball mill for further size reduction. The circulating load is approximately 300%.

The fines from the classifier oversize go to separator cyclones. They remove approximately 88% of the fines from the air stream. The collected fines are deposited into the product bucket elevator feed air slide. The air stream, with the remaining 12% entrained fines, reports to the 700 hp, 131,000 actual cubic feet per minute (acfm) separator fan. The majority of this stream is fed back into the air classifier through the separator fan, while 25% to 33% of the stream is bled into the classifier baghouse.

The classifier baghouse uses the 125 hp classifier baghouse fan to pull 44,800 acfm air through the bag filters. The captured dust is transported via an air slide and the 60 hp product bucket elevator to the RFB.

### 17.1.5 Roaster

The roaster feed bucket elevator lifts the mixture of ore and pulverized coal approximately 135 ft and discharges into the roaster feed air slide. A disengaging bin receives the air slide discharge and funnels this material into the fluidized feed distributor. The roaster system is comprised of two identical, side by side roaster trains, each train is permitted for 125 dry tons per hour (stph); however, normal operating conditions process 90 dry stph to 100 dry stph. The roasters are two-stage, countercurrent, fluid bed type which utilize relatively pure oxygen to both fluidize the bed and oxidize the refractory ore. The ore itself does not contain enough fuel value to sustain combustion so pulverized coal is added to control and maintain proper roasting temperatures in the stages. The temperature in the first stage is 1,030°F to 1,050°F. Retention time in each stage is one minute for every 4 in. water column (WC) (for example, 24 minutes at 95 in. WC in the first stage and 16 minutes in the second stage at 65 in. WC). The second stage discharge temperature is approximately 900°F.

Calcine from the roasters discharges into quench tanks for cooling.

### 17.1.6 Gas Handling

The gas handling circuit pulls the off-gas from the roaster first stage secondary cyclone and processes it to remove particulate material, sulphur dioxide gas, and mercury vapor before releasing clean gas to the atmosphere through the roaster stack. A vacuum, or negative differential pressure with respect to atmosphere, is maintained inside the roaster to prevent dust and toxic gases from escaping the vessel. This differential pressure is controlled by the operation of the gas handling circuit.

### 17.1.7 Carbon-in-Leach (CIL)

Cooled slurry from the roaster quench system is pumped to a 100 ft diameter thickener. Thickener overflow is pumped to the cooling pond where it is recycled back to the roasters after cooling. Slurry from the thickener underflow is pumped across a vibrating trash screen to remove oversize ore particles. The particles are recycled back to the primary crusher. Trash screen undersize, which is approximately P80 200 mesh, discharges directly to the first of six CIL tanks. Milk of lime is added to the slurry and liquid sodium cyanide is added to the top of the slurry in the first CIL tank. Cyanide can also be added in subsequent stages as needed. Each CIL tank holds 20 g/L of coconut shell 6 mesh by 12 mesh activated carbon. Carbon is held in the tanks by screens with 18 mesh openings. The slurry in the CIL circuit flows by gravity from tank 1 to tank 2 to tank 3, and so on until the slurry discharges from the circuit. As carbon is loading with gold, it is advanced countercurrent to the slurry flow using carbon advance pumps. That is, the carbon is advanced from CIL tank 6 to tank 5 to tank 4 and so on until it is removed from CIL tank 1 and advanced to the carbon strip circuit. The slurry discharging from CIL tank 6 reports to the 30 mesh safety screen to collect any carbon that may have passed through the tank screens. The tailings are sampled by an inline Heath & Sherwood sample cutter before flowing to the TSF.

### 17.1.8 Carbon Strip Circuit

The activated carbon is stripped in five ton to six ton batches, using heat and pressure. The solution temperature is 280°F at a pressure of 50 psi to 60 psi. The flow rate is approximately 40 gpm and the average strip time is 12 hours to 14 hours.

The pregnant solution from the carbon strip solution reports to the electrowinning (EW) cells where the gold is recovered from the solution. Two EW cells operate in series. The cells are 150 $ft^3$ and 50 $ft^3$, respectively.

### 17.1.9 Refinery

The EW cells are cleaned on a batch basis. The resulting sludge is pumped through a filter press to remove moisture from the sludge. The sludge is dried in a mercury retort for 24 hours. The temperature reaches 1,150°F in order to remove mercury from the sludge prior to smelting. The dried sludge from the retort furnace is mixed with flux (*e.g.*, borax, niter, soda ash, and silica). The flux helps to create a stable slag to allow the oxidized impurities to separate from the precious metal doré as it is being smelted in the induction furnace. Doré bars weighing 500 oz that contain approximately 90% gold are poured and shipped off site for additional refining.

Since taking ownership of the property on June 24, 2015, JCG has purchased new capital equipment and completed a number of projects in order to complete maintenance on the processing facilities that had been neglected under the previous ownership and to improve plant operations, reliability, and safety and environmental conditions, including control of fugitive dust, which has been a major issue.

The projects include:

- Discharge end of the dryer was worn and it was replaced.
- Ball mill bull gear was replaced.
- The carbon strip procedure was changed to regular standard basic method.
- Carbon wash was reinstated and the procedure and method was changed to standard method.
- Crushing circuit conveyor system arrangement was modified, including a new incline feed belt, new double-deck screen, new secondary screw conveyor, and new secondary fines conveyor. The modifications remove 30% of the material that meets the target particle size distribution before the fine crush and directs it to the FOB without crushing.
- Vent duct system is heated to help condensation of steam in the vent system in the winter.
- New Osepa, cross over slides, and cyclones were installed in the fine grinding circuit.
- The current cooling tower was refurbished and a new cooling tower was added to the cooling pond.
- Modifications were made to the east–west baghouse, including a new Fuller-Kinyon dust pump system. In 2018, the cyclones for the baghouses will be removed and proper sized ducting will be put in to replace it.
- Fine carbon system was constructed and commissioned.
- The company refurbished heap leach carbon columns, feeding them a partial cut of the thickener overflow and is presently working on increasing their flow rate.
- Assay laboratory renovations were completed in 2017.
- Major oxygen plant maintenance was completed by the company that is contracted to operate the plant.

JCG conducted major two week shutdowns in August 2015, November 2016, and October 2017. Both roasters were completely cleaned, repaired, and inspected during the November and October shutdowns. The west roaster was cleaned and repaired in the October shutdown.

All major equipment has now been maintained properly.

The wet milling facilities remaining from pervious operations but the two grinding lines are currently not in use or permitted for use. Each line consists of one 800 hp semi-autogenous grinding (SAG) mill and a 700 hp ball mill with capacities of approximately 1,450 stpd for a total capacity of approximately 3,000 stpd.

# 18.0 PROJECT INFRASTRUCTURE

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

Jerritt Canyon has been in production for many years and has well established infrastructure including:

- Office buildings;
- Warehouse facilities;
- Maintenance shops;
- Laboratory facilities;
- Communication networks;
- Onsite security;
- TSFs; and
- Water management systems.

## 18.1 ROAD ACCESS

The main access road is approximately seven miles long and is a 22 ft wide paved road between Nevada Highway 225 and the mill site. A 100 ft wide haul road provides access between the major ore-producing mines and the mill site. This road network is approximately 17 miles long.

## 18.2 WATER SOURCES

Water for the mill site comes from two sources: deep underground water wells and a connected series of seepage recovery wells and pumps. All pumping wells are permitted through the Nevada Division of Water Resources water rights. Three potable water systems exist on the property and are permitted as public water supplies.

## 18.3 POWER

Power to the mine site is supplied by NV Energy through a 125 kV, three-phase transmission line. Monthly power consumption is approximately 8.0 MWh.

## 18.4 SEWAGE AND WASTE DISPOSAL

Domestic wastewater (sewage) at the mill site is treated in a packaged wastewater treatment plant. Treatment includes primary settling, air-enhanced digestion, and chlorine disinfection. Treated effluent is disposed of in the TSF. Each of the underground mines has an individual sewage disposal system consisting of a collection system, septic tank, and leach field.

## 18.5 ORE STOCKPILES

There are a number of ore stockpiles present at the mine site. The remote stockpiles are located distal to the mill facilities and are spread throughout the property mostly in the areas of the Smith, SSX, Saval 4, and West Mahala mines. There are also several ore stockpiles located in the ROM area adjacent to the mill.

## 18.6 TAILINGS AND WATER MANAGEMENT FACILITIES

The original TSF-1 was designed by Sergent Hauskins & Beckwith (SHB) and was commissioned in 1981. Knight Piésold designed the five subsequent raises, including the final raise (Phase VII) that was constructed in 1998. The primary retention structure of the TSF-1, the East Embankment, is a zoned earthen dam with an upstream low-permeability barrier zone, interior chimney drain, and mass random fill shell. Subsequent raise construction incorporated extension of the barrier and drainage zones. The TSF-1 is currently operated as a managed sub-aerial deposition system. Excess supernatant water is transferred to the Evaporation Pond and the Water Storage Reservoirs (WSR). The solution is actively evaporated.

Phase 1 of TSF-2 was completed in December 2012. The State granted approval to operate in January 2013. The Phase 1 construction included a 73 acre TSF and a 62 acre WSR that has an East Basin (WSR-E) and a West Basin (WSR-W).

TSF-2 is a double-lined facility. An 80 mil single-sided micro-spike high density polyethylene (HDPE) primary liner was installed over a 60 mil HDPE drain liner. This phase was designed to provide 4.5 million tons of storage space for tailings deposited at 85 $lb/ft^3$. Recent measurements determined that the settled density is approximately 75 $lb/ft^3$, which reduces the capacity to approximately 3.75 million tons.

Phase 2 of TSF-2 consists of one 12 ft lift to provide storage for approximately 1.6 million tons. Phase 3 is another 21 ft lift to provide storage for an additional approximately 3.0 million tons. A bid to construct a 10 ft lift that was received in September 2017 estimated the cost to be approximately $4.9 million.

## 18.7 WATER TREATMENT PLANTS

### 18.7.1 Tailings Water Treatment

An Engineering Design Change (EDC) for the installation of a water treatment plant (WTP) consisting of chemical pre-treatment, pH adjustment, coagulation, oxidation, an inclined plate settler, ultrafiltration system, sea water reverse osmosis, and ion exchange vessels to treat antimony, arsenic, cadmium, chloride, manganese, mercury, nitrogen, selenium, sulfate, thallium, and total dissolved solids (TDS) was approved by Nevada Division of Environmental Protection-Bureau of Bureau of Mining Regulation and Reclamation (NDEP-BMRR) in December 2016. Anticipated commissioning of the plant was the first quarter of 2017. Water contained in the WSR-E, WSR-W, TSF-1, TSF-2, and the Evaporation Pond needs to be treated so the ponds can be drained in order to remove excess water from the site and facilitate future tailings storage.

The plant is designed to process 800 gpm with a maximum flow of 1,000 gpm. Raw water from Dash and the W-WSR will be pumped through separate double contained pipelines to a polyethylene reaction tank. Upstream from the reaction tank, sodium dimethyldithiocarbamate (NaDTC), sodium hydroxide (NaOH), ferric chloride ($FeCl_3$), and sodium hypochlorite (NaOCl) will be added to the raw water through an inline mixer for chemical pre-treatment, pH adjustment, coagulation, and oxidation respectively. The process water will then be pumped to an inclined plate settler (IPS) for solids separation. The solids laden underflow from the IPS will be pumped back to TSF-2. The clarified effluent from the IPS will be gravity fed to the ultrafiltration (UF) feed tank.

The clarified process water will then be pumped by Variable Frequency Drive (VFD) controlled feed pumps through pre-strainers, and then through an ultrafiltration (UF) system for suspended solids removal. Antiscalant (Vitec 3000) and $FeCl_3$ will be dosed into the UF feed tank for scale control and coagulation of fugitive suspended solids. Sulphuric acid will also be added for pH adjustment. Hydrochloric acid may be substituted as the acid depending on cleaning characteristics observed during operation. After filtration, the UF filtrate will flow to another polyethylene tank for sea water reverse osmosis (SWRO) feed. The process water will then be pumped through three parallel SWRO units for removal of dissolved solids. Bisulphite and antiscalant (Vitec 3000) will be added to the SWRO feed for chlorine removal and scaling control. These chemicals are added through an inline mixer into the SWRO feed pipe.

UF and SWRO cleaning waste and SWRO concentrate will be sent to one of two sump chambers inside of the plant that will gravity drain to the Evaporation Pond. JCG can maintain the option to divert SWRO concentrate to TSF-2, but revised drawings will be required prior to this disposal. Water from periodic UF flushes will contain particulate solids and be sent to the other sump chamber which will be recirculated to the reaction tank. SWRO permeate will be sent to ion exchange (IX) vessels for final polishing. Backwash water from the IX vessels will be sent to the same sump chamber as the SWRO and UF cleaning waste. The treated water from the IX will then be sent to a 60,000 gallon existing tank located next to the Smith WTP. This water will comingle with the treated effluent from the Smith WTP, and will be pumped through HDPE pipelines to injection wells.

At the time of the site visit, the major equipment to construct the Tailings WTP was on site. The estimated cost to complete construction of the plant is estimated to be approximately $6 million.

### 18.7.2 Smith Mine Water Treatment Plant

Raw water from Smith dewatering wells will be pumped to a newly constructed 282,000 gallon tank that will serve as dewatering equalization, fire water pressure and reserve volume, and Smith WTP feed. Raw water will flow by gravity from the 282,000 gallon tank to the WTP via a 12 in. HDPE pipeline. Upon entering the WTP, a pressure reducing valve will step the pipeline pressure down to a level appropriate for the plant process.

Treatment begins with addition of $FeCl_3$ for coagulation and iron adsorption, sulphuric acid ($H_2SO_4$) to lower pH, and sodium hypochlorite (NaOCl) for oxidation. The chemically pre- treated water will flow through a reaction vessel, then to coagulation/filtration vessels, and finally through adsorption vessels into an existing 60,000 gallon finished water tank. A bypass/blend line will be installed to allow controlled blending of filtrate from the coagulation/filtration vessels with water that has undergone the entire treatment process. Sodium hydroxide (NaOH) will be added post treatment in order to raise the pH to within permissible levels. All plant vessels will be connected by polyvinylchloride (PVC) piping and automatic valves for process control.

The coagulation/filtration and adsorption vessels will be backwashed regularly into cone bottom backwash (BW) tanks. Process water will be transported inside the building via single-wall PVC pipe, and inside pipe-in-pipe configuration between the building and tank farm area. Supernatant from the BW tanks will be transported via pipe-in-pipe from the tanks and pumped to the WTP intake, upstream from chemical addition. Solids-laden process water will be pumped from the BW tanks to the TSF for disposal.

The effluent from the WTP will be sent to the existing 60,000 gallon existing tank where it will be comingled with the treated effluent from the Tailings WTP. Treated water will be pumped using a dedicated pipeline to injection wells. The disposal pipeline will be a combination of double containment methods using buried pipe-in-pipe, single wall pipe in lined trench, and above-grade pipe-in-pipe. The various methods are required to ensure the process pipe can be drained if service is necessary.

## 19.0 MARKET STUDIES AND CONTRACTS

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

This section is not applicable.

# 20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

## 20.1 ENVIRONMENTAL STUDIES AND CONCERNS

JCG has been in operation since 1981. The mine is primarily located on private land that is controlled by the company and on public land that is administered by the United States Forest Service (USFS) as well as public land that is administered by the BLM. The majority of the public land is administered by the USFS with only a small portion administered by BLM. The land area consists of surface mines, underground mines, rock disposal areas (RDAs), haul roads, maintenance facilities, ancillary and support facilities, processing facilities, and TSFs.

Prior to and during operation, numerous environmental studies and evaluations have been conducted to support permit applications and operations. An Environmental Impact Statement (EIS) was completed and the Record of Decision (ROD) was issued in 1980.

Previous owners of Jerritt Canyon were historically known to operate inefficiently and created environmental problems and concerns that linger today. JCG inherited this legacy and has been working diligently to mitigate the concerns since it took over the operation. Currently, RPA has identified five environmental issues that have the potential to materially impact JCG's ability to extract the Mineral Reserves or affect the cost of doing so. They are:

- High concentrations of sulphate and TDS in surface water seepage from four of the eighteen RDAs.
- Seepage from TSF-1.
- Limited tailings storage capacity.
- Water management constraints and the lack of water treatment facilities.
- Numerous and nearly constant requests for modifications to permits and historical failure to follow through the timelines associated with commitments made to the regulators.

## 20.2 SEEPAGE FROM ROCK DISPOSAL AREA

The EIS ROD selected a valley fill option as the preferred RDA design (USFS and BLM, 1980). Design criteria rely on structuring the RDAs by draining storm water run-off and snowmelt towards the interior of the RDAs. The design resulted in seepage from the toes of four RDAs, which does not meet Nevada water quality standards. The four RDAs that do not meet the required standards are:

- Marlboro Canyon;
- Gracie;
- Snow Canyon East; and
- Dash East.

JCG staff have worked with NDEP-BMRR to develop mitigation actions and monitoring plans for the seepages since the late 1990s.

In 1999, a biological treatment method that used a surface sedimentation pond was unsuccessfully tested. In 2003, a passive treatment method that utilized a biological sulphate reducing trench (SRT) was tested for the Marlboro Canyon RDA. Monitoring of the water from the SRT continues to this day, however, applicable water standards have not been met since late 2004. Various tests were completed between 2012 and 2014. During 2012, JCG evaluated the Marlborough Canyon SRT and determined that the passive treatment method was treating the seepage but the capacity was not sufficient to meet the applicable standards. Also in 2012, the company began testing remedial actions to diminish the capture and infiltration of precipitation in the RDAs that exhibit seepage and to correspondingly reduce the seepage. The measures were completed for Gracie and partially completed for Snow Canyon East and Marlboro Canyon. In 2011 and 2012, a pilot treatment plant was constructed at the Dash East RDA to test an active chemical treatment method. In 2012, testing of the addition of chemicals to the inflow of the Marlboro Canyon trench that was constructed in the early 2000s was initiated. Based on the evaluation at Marlboro Canyon plans were submitted to the State for testing biological treatment methods for the Dash East RDA seepage. During 2013-2014, the active treatment system at Dash East proved successful at removing sulphate and TDS but the resulting sludge did not meet the Toxicity Characteristic Leaching Procedure (TCLP) requirements for barium. An NDEP Consent Decree (CD) that was issued to Veris in 2009 required that treatment of the Dash seepage be completed and utilization of the proposed WTP to complete the treatment was approved.

## 20.3 SEEPAGE FROM TSF-1

The first phase of TSF-1 was designed in 1979-1980 and the first phase of construction was completed in October 1981. The design incorporated an earthen embankment and compacted soil liner but did not include a synthetic liner. Seepage from TSF-1 was first observed in March 1982 and efforts to control and manage the seepage have continued since that time. Initial discharge to TSF-1 was terminated in November 2013 and, as part of the reclamation, approximately one third of the surface area for TSF-1 has been covered with synthetic liner to reduce precipitation infiltration into the TSF and to reduce the seepage, however, NDEP issued approval for an Engineering Design Change (EDC) in 2016 that allowed for a temporary change to operating status for TSF-1. The change was requested in order to fill a depression in TSF-1 that allowed accumulation of storm water after precipitation events and to provide additional storage capacity for tailings that were generated prior to the 2017 construction season. The EDC (SRK, 2017) stated that the "emergency storage of tailings within TSF 1 to allow continued operation of the Jerritt Canyon mill through the 2016- 2017 winter (or through the 2017 construction season after additional tailings storage is available via TSF 2 Phase 2 or the WSR)". As of the date of this report, September 2018, tailings are still being discharged into TSF-1. It is anticipated that it will be permanently closed in 2019.

## 20.4 LIMITED TAILINGS STORAGE CAPACITY

The tailings storage and water storage facilities at Jerritt Canyon are inter-related. They include: TSF-1, TSF-2, an evaporation pond, and two water storage reservoirs (WSR) (*i.e.*, WSR East and WSR West).

The Final As-Built Report for the Water Storage East Basin and Pipeline Corridor #4 (SRK, 2011) reported that during preparation of the Existing TSF Final Permanent Closure Plan (FPCP), it was concluded that an additional WSR was required to store surplus water during the winter and maximize summer evaporation losses. Storage and evaporation were both required in order to meet the water management requirements for closure of TSF-1.

As indicated in the previous section, the 2017 EDC stated that additional tailings storage capacity would be constructed during the 2017 construction period, however, this was not done.

JCG has several options for increasing the tailings storage capacity that are already permitted and approved by NDEP. Two options are available for increasing the capacity of TSF-2. One is addition of a 12 ft lift that will provide additional storage for approximately 1.6 million tons of tailings followed by a second lift. The second is construction of a 34 ft lift that provides storage for approximately 4.6 million tons of tailings. Also, the WSRs are double lined facilities that were designed and permitted to be converted from water storage to tailings storage. The WSRs are currently full of water that must be treated in order to be discharged. The WTP is permitted and the equipment is on site and injection wells to receive the treated water are also permitted and partially installed. So, after the WTP is constructed, the water can be treated so the WSRs can be emptied. The primary liner on the WSRs are also leaking so after the liners are repaired, they would also be available for tailings storage. JCG decided to pursue the 12 ft lift on TSF-2. It is currently under construction. The expansion provides storage for approximately one year of production.

## 20.5 WATER MANAGEMENT AND TREATMENT

The water management system at Jerritt Canyon relies on pumping water from TSF-1 and TSF-2 to the Evaporation Pond, WSR-E, and WSR-W. Analyses of water samples taken from the various ponds indicate that the blended water quality from all ponds exceeds Nevada Profile I standards for antimony, arsenic, cadmium, chloride, manganese, mercury, nitrogen, selenium, sulphate, thallium, and TDS (Linkan, 2017). Bench and pilot testing was conducted to develop a process that will remove the contaminants in order to meet the standards required for discharge. The plant is designed to be located adjacent to the existing Dash RDA WTP. Construction is scheduled to be completed in November 2018.

The Dash RDA WTP is to be converted to treat water from dewatering of the Smith mine. The conversion is scheduled for approximately one month after completion of the main WTP. Water from the Dash RDA is to be re-routed and combined with the tailings supernatant for treatment. The two plants share chemical storage tanks and a concrete containment area. Effluent from both plants are to be combined in a 60,000 gallon temporary storage tank and subsequently pumped to two separate injection fields. The primary injection point for the tailings WTP is located north of the evaporation pond. The injection point for the Smith mine WTP is located on USFS land. The injection wells and water disposal are covered under the existing UIC Permit UNEV93214.

## 20.6 PERMITTING PRACTICES AND PLANS

RPA's review of the various documents that have been provided by JCG indicate that numerous requests for permit modifications and operating changes have been made by the company and that the conditions of the approvals have not been met within the time frame granted by NDEP. Three examples of this are:

- Additional tailings storage was to be constructed during the 2017 construction period (SRK, 2016);
- Deposition of tailings was to revert back to TSF-2 by the end of October 2017 (SRK, 2017); and
- JCG has failed to meet many of the deadlines outlined in the *Agreement for Adequate Reclamation Bond and Rock Disposal Area Seepage Treatment* (NDEP, 2015).

The fact that Jerritt Canyon is still operating and that NDEP has granted the numerous requests made by JCG demonstrates that the Environmental Manager and environmental staff have good working relationships with the regulators. In RPA's experience, other operating mines in Nevada carefully and strategically plan permitting requests, often years in advance, in order to enhance working relationships with regulators and not impose on their busy schedules any more than required. Making frequent requests, particularly when the approved requests are not implemented in a timely fashion, has the potential to cause a break down in future collaboration with the state.

## 20.7 PROJECT PERMITTING

Operating permits are in place and current, as shown in Table 20.1. At the time JCG assumed ownership from Veris on June 24, 2015, Veris was operating under the 2013 Second Modified Consent Decree. The decree was replaced by the *Agreement for Adequate Reclamation Bond and Rock Disposal Area Seepage Treatment* (NDEP, 2015) between JCG and NDEP.

**TABLE 20.1**
**OPERATING PERMITS**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Entity | Name of Governmental Authority | Licence or Permit # | Name and Date of Licence, Permit, Approval or Consent | Description and Expiry |
|---|---|---|---|---|
| Jerritt Canyon Gold LLC | Nevada Department of Wildlife | S-464035 | Industrial Artificial Pond Permit | Mining Operation – Mill Facility, period August 31, 2016 to August 30, 2019 |
| Jerritt Canyon Gold LLC | Nevada Department of Wildlife | 464039 | Industrial Artificial Pond Permit | Tailings Storage Facility 2, period August 31, 2016 to August 30, 2019 |
| Jerritt Canyon Gold LLC | Nevada Department of Wildlife | 464038 | Industrial Artificial Pond Permit | Water Storage Reservoir, period August 31, 2016 to August 30, 2019 |
| Jerritt Canyon Gold LLC | Nevada Board for the Regulation of Liquefied Petroleum Gas | 5-5333-02 | Class 5 Licence | Lower Truck Shop Propane Tank, expires last day of July 2019 |
| Jerritt Canyon Gold LLC | Nevada Board for the Regulation of Liquefied Petroleum Gas | 5-5333-03 | Class 5 Licence | Roaster Propane Tank, expires last day of July 2019 |
| Jerritt Canyon Gold LLC | Nevada Board for the Regulation of Liquefied Petroleum Gas | 5-5333-01 | Class 5 Licence | Lee Smith Mine Propane Tank, expires last day of July 2019 |
| Jerritt Canyon Gold LLC | Nevada Board for the Regulation of Liquefied Petroleum Gas | 5-5333-04 | Class 5 Licence | SSX Mine Propane Tank, expires last day of July 2019 |
| Jerritt Canyon Gold LLC | Nevada Board for the Regulation of Liquefied Petroleum Gas | 5-5333-06 | Class 5 Licence | Steer Portal Propane Tank, expires last day of July 2019 |
| Jerritt Canyon Gold LLC | United States Fish and Wildlife Service | MB78444B-0 | Application for Migratory Bird Special Purpose Utility Permit, dated 11/2014 | Effective February 6, 2016; expires February 3, 2019 |

**Table 20.1**
**Operating Permits**
**Jerritt Canyon Gold LLC – Jerritt Canyon Gold Mine**

| Entity | Name of Governmental Authority | Licence or Permit # | Name and Date of Licence, Permit, Approval or Consent | Description and Expiry |
|---|---|---|---|---|
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Air Pollution Control | AP1041-2217 | Mercury Operating Permit to Construct: Phase II for Facility ID No. A0004 | Signed August 25, 2015<br>This permit does not expire |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Water Pollution Control | NS2009504 | Groundwater Discharge Permit – Septic System Permit | Effective November 4, 2014; expires November 3, 2019 |
| Jerritt Canyon Gold LLC | Nevada State Fire Marshal's Division | 73644 | Fire Marshal Hazardous Materials Permit for the [Mine]-FDID 05001 | Expires February 28, 2018 |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Air Pollution Control | 1041-3422 | Class I Air Quality Operating Permit for Facility ID No. A0004 | Will expire and be subject to renewal five years from March 31, 2014; expires on March 31, 2019 |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Water Pollution Control | NEV0000020 | Water Pollution Control Permit | Effective September 29, 2015 until September 17, 2019 |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Water Pollution Control | UNEV93214 | Underground Injection Control Permit | Date: April 26, 2017; must be renewed by April 26, 2022 |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Waste Management | SW381 | Jerritt Canyon Mine Mill Area Class III Landfill Waiver | Date: September 29, 2015; must be reviewed and renewed by September 29, 2020 |

**TABLE 20.1**
**OPERATING PERMITS**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Entity | Name of Governmental Authority | Licence or Permit # | Name and Date of Licence, Permit, Approval or Consent | Description and Expiry |
|---|---|---|---|---|
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Waste Management | SW384 | Jerritt Canyon Burns Basin Area Class III Landfill Waiver | Date: September 29, 2015; must be reviewed and renewed by September 29, 2020 |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Waste Management | SW385 | Jerritt Canyon Alchem Area Class III Landfill Waiver | Date: September 29, 2015; must be reviewed and renewed by September 29, 2020 |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Waste Management | SW1775 | Jerritt Canyon Mine New Mill Area Class III Landfill Waiver | Date: October 20, 2015; must be reviewed and renewed by October 20, 2020 |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Water Pollution Control | GNV980001-50004 | Oil Water Separator permits for the [Mine] | The original permit for the site was issued in 1998. The permit has never been formally renewed, but has been kept up. The NOI and BMP documents were submitted via e-mail on October 25, 2016 and a permit should be issued shortly. |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation | 0077 | Reclamation Permit | Effective date: June 30, 2016 |
| Jerritt Canyon Gold LLC | Nevada Division of Public and Behavioral Health, Radiation Control Program | 05-11-0133-01 | Radioactive Materials Licence | November 30, 2021 |

**Table 20.1**
**Operating Permits**
**Jerritt Canyon Gold LLC – Jerritt Canyon Gold Mine**

| Entity | Name of Governmental Authority | Licence or Permit # | Name and Date of Licence, Permit, Approval or Consent | Description and Expiry |
|---|---|---|---|---|
| Jerritt Canyon Gold LLC | United States Forest Service | Multiple | All authorizations or approvals in any form related to activities of the [Mine] on federal lands (including approximately 350 Plans of Operation) | Updated annually with Annual Work Plans. Initially approved June 26, 1984 |
| Jerritt Canyon Gold LLC | United States Bureau of Land Management | Various | All authorizations or approvals in any form related to activities of the [Mine] on federal lands | Updated annually as disturbance requests are submitted |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Water Pollution Control | NVR300000 | General storm water discharge permit and associated authorization | Effective March 1, 2013; expires February 28, 2018; administratively continued until re-issued by NDEP |
| Jerritt Canyon Gold LLC | Nevada Division of Water Resources | Multiple | Permit to appropriate waters | Current |
| Jerritt Canyon Gold LLC | Nevada Division of Water Resources, Office of the State Engineer | J-171, South Drainage Retention Dam<br>J-172, North Drainage Retention Dam<br>J-249, Overflow Catchment<br>J-313, Cooling Pond<br>J-490, TSF#1<br>J-578, Evaporation Pond<br>J-667, TSF2<br>J-668, WSRs | Permits, authorizations or approvals to construct impoundments/dam safety | Annual Fee each year by December 31. |

**TABLE 20.1**
**OPERATING PERMITS**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Entity | Name of Governmental Authority | Licence or Permit # | Name and Date of Licence, Permit, Approval or Consent | Description and Expiry |
|---|---|---|---|---|
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Safe Drinking Water | EL-3013-12NTNC | Mill Site Permit to Operate a Public Water System | Date: June 26, 208, Expiration date: June 30, 2019 |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Safe Drinking Water | EL-0313-TP03 | Permit to Operate a Treatment Plant – SSX Mine Arsenic Treatment plant | Date: June 26, 2018, Expiration date: June 30, 2019 |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Safe Drinking Water | EL-0313-12NTNC | Permit to Operate a Public Water System – SSX Mine | Date: June 26, 2018, Expiration date: June 30, 2019 |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Safe Drinking Water | EL-0313-TP02 | Permit to Operate a Treatment Plant – Steer Mine Arsenic Treatment plant | Date: June 26, 2018; Expiration date: June 30, 2019 |
| Jerritt Canyon Gold LLC | Nevada Division of Environmental Protection, Bureau of Waste Management | SW 1775 | Solid Waste Class III Waiver | Issued October 8, 2015; Expiration date: October 8, 2020 |

## 20.8 SOCIAL OR COMMUNITY REQUIREMENTS

Jerritt Canyon is located in Elko County, Nevada which is a mining-friendly jurisdiction. The employees of JCG are residents of Elko, Nevada and the local area and numerous other mining operations are located in the same area. Therefore, no particular social or community involvement is required.

## 20.9 MINE CLOSURE REQUIREMENTS

Approved closure and reclamation plans are in place for Jerritt Canyon. Concurrent reclamation is completed as possible. The company submits Annual Work Plans (AWP) every year, which include updates to the reclamation cost estimates. Nevada uses the "Standardized Cost Estimator" for estimating reclamation costs. Two separate estimates are completed for Jerritt Canyon. One is for the work to be done on Private Lands and the other is for work to be done on Public Lands (*i.e.*, USFS and BLM). The total reclamation costs, as updated in 2018, estimated from the 2017 AWP are approximately $84.5 million, as summarized in Table 20.2.

**TABLE 20.2**
**2017 AWP RECLAMATION COSTS**
**JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE**

| Items | Private Lands | Public Lands |
|---|---|---|
| Earthwork/Recontouring | $15,221,581 | $5,723,083 |
| Revegetation/Stabilization | $563,695 | $1,217,902 |
| Detoxification/Water Treatment/Disposal of Wastes | $29,379,083 | $24,870 |
| Structure, Equipment and Facility Removal, and Miscellaneous | $7,528,551 | $1,125,839 |
| Monitoring | $1,752,705 | $363,808 |
| Construction Management and Support | $1,645,869 | $535,390 |
| Subtotal | $56,091,484 | $8,990,892 |
| Indirect Costs | $16,273,278 | $3,146,812 |
| Indirect Costs – Percentage of Direct Costs | 29% | 35% |
| | | |
| **Total** | **$72,364,762** | **$12,137,704** |

The Agreement for Adequate Reclamation Bond and Rock Disposal Area Seepage Treatment (NDEP, 2015), required payment of $10 million in bonds that had not been paid by Veris. On May 4, 2018, NDEP approved a "good faith" bonding payment schedule to resolve the bonding deficiency associated with the 2015 RDA Agreement. The schedule consists of quarterly payments totaling $1,000,000 by February 15, 2019.

As of August 8, 2018, NDEP provided a letter summarizing the financial instruments that form the bond, as shown in Table 20.3 (NDEP, 2018.)

| TABLE 20.3<br>BONDS HELD AS OF DECEMBER 14, 2017<br>JERRITT CANYON GOLD LLC – JERRITT CANYON GOLD MINE | | | |
|---|---|---|---|
| **Financial Instruments Held by NDEP** | **Amount (US$)** | **Financial Instruments Held by USFS** | **Amount (US$)** |
| National Union Fire Insurance Co. of Pittsburg, PA Surety #919-063 | 41,277,523 | National Union Fire Insurance Co. of Pittsburg, PA Surety #919-065 | 10,949,287 |
| Cash Bond, Interest Earning | 19,432,640 | Insurance Co. of State of Pennsylvania Surety #919-064 | 273,389 |
| Interest Earned as of 9/30/17 | 61,972 | | |
| Cash Bond | 2,824,770 | | |
| RDA Seepage Treatment Fund | 4,200,000 | | |
| | | | |
| **Total Amount** | **67,846,905** | **USFS Total Amount** | **11,222,676** |
| | | | |
| **Total Obligated Amount (excludes interest)** | **79,007,609** | | |

## 20.10 SAFETY

During the site visit, it was reported that the operation was shut down by the Mine Safety and Health Administration (MSHA) for approximately four weeks in 2017 due to dust issues in the plant. No additional shutdowns have been incurred in 2018. JCG permitted and completed a reconfiguration of the baghouse that has helped alleviate the concerns, however, personnel working inside the roaster building are required to wear respirators, which is considered the last line of defense from a safety perspective.

## 21.0 CAPITAL AND OPERATING COSTS

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

Representative operating costs are US$84 per ton mined, US$37 per ton processed, and US$8 per ton processed for General and Administrative costs. Based on a gold price of US$1,200 per ounce, the operating gold COG is 0.13 oz/st.

## 22.0 ECONOMIC ANALYSIS

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

Under NI 43-101 rules, producing issuers may exclude the information required in Section 22.0 - Economic Analysis on properties currently in production, unless the Technical Report includes a material expansion of current production. RPA notes that JCG is a producing issuer, the Jerritt Canyon is currently in production, and a material expansion is not being planned.

## 23.0 ADJACENT PROPERTIES

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

There are no adjacent properties to report in this section.

## 24.0 OTHER RELEVANT DATA AND INFORMATION

***The following section is excerpted from the RPA Technical Report (September 28, 2018), unless otherwise specified. Changes to tables, figure numbers, section numbers, and standardization have been made to suit the format of this report. Updates to the text is made to reflect current tense, data, and/or information are annotated by the use of brackets, italicized, and labeled [Behre Dolbear, 2020].***

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

# 25.0 INTERPRETATION AND CONCLUSIONS

*Behre Dolbear is not aware of any issues that have not been otherwise disclosed in this report that would materially affect the current estimates of the mineral resources and operating parameters for the Project. Behre Dolbear used the analyses obtained from the public domain and they appear reasonable, given the current market conditions. Except for some historical inaccuracies in the RPA Report (corrected by Behre Dolbear) of some pre-2000 historic data, particularly concerning timing of the earliest underground operations, Behre Dolbear agrees with the interpretations and conclusions in the RPA report* [*Behre Dolbear, 2020*].

*In particular, Behre Dolbear agrees that the exploration potential for expanding mineral resources within and adjacent to the known mineralized areas is highly likely. Also, Behre Dolbear opines that there is potential for discovery of new mineralized areas considering many known favorable structural/stratigraphic intersections have not yet been drill tested. Furthermore, Behre Dolbear opines that potential exists, albeit below the water table, for discovery of new mineralization in deeper thrust sheets where through going structural feeders intersect the favorable stratigraphic package* [*Behre Dolbear, 2020*]*.*

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Based on the site visit and subsequent review, RPA offers the following conclusions.

## 25.1 GEOLOGY AND MINERAL RESOURCE

- Site geologists have a good understanding of the regional, local, and deposit geology and controls on mineralization.
- Exploration and development sampling and analysis programs involve standard practices, providing generally reasonable results. The resulting data can effectively be used for the estimation of Mineral Resources and Mineral Reserves.
- The methods and procedures utilized to gather geological, assaying, density, and other information are reasonable and meet generally accepted industry standards.
- Sampling and assaying have been carried out using industry standard QA/QC practices. These practices include, but are not limited to, sampling, assaying, chain of custody of the samples, secure sample storage, use of third-party laboratories, and use of standards, blanks, and duplicates.
- Since 2015, JCG has made considerable advances in the compilation and interpretation of historical geophysical and geochemical datasets resulting in the identification of four high priority target areas, which include Winters Creek, East Dash, Murray North, and Starvation. The property holds significant exploration potential, particularly in the southern portion.
- JCG has executed approximately one million feet of RC drilling and 81,000 ft of core drilling. This has enabled JCG to increase the size and confidence of the existing resources.
- Exploration protocols for drilling, sampling, analysis, security, and database management meet industry standard practices. The drill hole database was verified by RPA and is suitable for Mineral Resource estimation work.
- The geological wireframes are reasonable and plausible interpretations of the drill results.
- The resource model has been prepared using appropriate methodology and assumptions, including:
  - Treatment of high grade assays;
  - Compositing length;
  - Customized search parameters;

  - Bulk density;
  - Cut-off grade; and
  - Classification.
- As of June 30, 2018 and at a cut-off grade of 0.1 oz/st Au, the Measured and Indicated Mineral Resources at Jerritt Canyon total 5.7 million tons grading 0.210 oz/st Au containing 1.2 million ounces of gold. In addition, Inferred Mineral Resources are estimated at 3.9 million tons grading 0.197 oz/st Au containing 0.8 million ounces of gold.
- Mineral Resource estimates have been prepared utilizing acceptable estimation methodologies. The classification of Measured, Indicated, and Inferred Mineral Resources conforms to CIM (2014) definitions.
- No Mineral Reserves have been estimated.

## 25.2 MINING AND MINERAL RESERVES

- No Mineral Reserves have been estimated.
- Mining operations at Jerritt Canyon are well established and carried out by an experienced mining contractor at the Smith and SSX mines using the cut and fill mining method and by the owner's workforce at the Saval 4 mine using the sub-level longhole mining method.
- A long term operating plan has not been prepared to convert Mineral Resources to Mineral Reserves although JCG forecasts production from the four mines through 2018.
- The Mine is challenged with high dilution caused by current mining method design parameters and project economics, as well as mineralized zones with inadequate mass or thickness to be economically recovered at current gold prices.

## 25.3 MINERAL PROCESSING AND METALLURGICAL TESTING

- Since JCG took ownership of the property in 2015, a number of projects have been completed that were required to mitigate the lack of maintenance performed by the previous owners and to alleviate health, safety, and environmental concerns. The bulk of the work has been completed and operating conditions have improved.
- Although historical operating data indicates that there is a relationship between gold grade and recovery, the LOM plan assumes a flat gold recovery of 85%.

## 25.4 INFRASTRUCTURE

- The Mine is a mature operation that has been operating for more than 35 years, and as a result the infrastructure is in place, however, the tailings storage capacity is nearing the end of its life and new water treatment facilities are required to achieve a workable water balance and provide sufficient storage capacity on the property.

## 25.5 ENVIRONMENTAL CONSIDERATIONS

- All of the necessary permits and approvals are in place to operate the Mine, however, there are a number of deficiencies in the operation that have the potential to impact mining including:
  - High concentrations of sulphate and TDS in surface water seepage from four of the eighteen RDA
  - Seepage from TSF-1
  - Limited tailings storage capacity
  - Water management constraints and the lack of a WTP

- Numerous and nearly constant requests for modifications to permits and failure to follow through with commitments made to the regulators.

## 25.6 SAFETY

- There were a large number of MSHA citations and extended shutdowns imposed during 2017.
- *The mines continue to operate under MSHA regulations and enforcement* [*Behre Dolbear, 2020*].

# 26.0 RECOMMENDATIONS

*Behre Dolbear has reviewed the recommendations in the RPA report and agrees with all recommendations* [*Behre Dolbear, 2020*].

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## 26.1 GEOLOGY AND MINERAL RESOURCES

- Continue to explore the Winters Creek, East Dash, Murray North, and Starvation areas.
- Complete detailed domain and resource modelling for the above areas to estimate Mineral Resources associated with these areas.
- Continue drilling to expand Mineral Resources.
- Continue to convert Inferred Mineral Resources to Indicated Mineral Resources.
- Update the block models on a regular basis.
- Improve ore tracking and reconciliation procedures

## 26.2 MINING AND MINERAL RESERVES

- Adopt long-term planning and Mineral Reserve estimation processes, initiated by a mining method optimization trade-off study, and carry out multiple mining method planning exercises with the intention of reducing operating cut-off grades.
- Estimate Mineral Reserves.
- Adjust mobile mining fleet as necessary to achieve reduced mining heights and dilution.
- Review cut-off grades and modifying factors as part of the planning process and optimize them where appropriate.

## 26.3 MINERAL PROCESSING AND METALLURGICAL TESTING

- As the mechanical aspects of the plant are operational and functional, a strong emphasis should be placed on metallurgical aspects. JCG reports that the recovery is improving now that it is achieving better metallurgical control. Based on the data reviewed, it is RPA's opinion that there is potential to increase recovery by one or two percent.
- Since the mines are not able to supply sufficient mineralized material to keep the mill at full capacity, processing material in the low-grade stockpiles that has a value higher than the incremental processing and G&A operating costs has the potential to increase cash flow and reduce the cost per ton.

## 26.4 INFRASTRUCTURE

- Construction of the additional TSF capacity and a WTP are critical to operation of the Mine. These projects should be completed as soon as possible, as planned.

## 26.5 ENVIRONMENTAL CONSIDERATIONS

- In order to maintain the excellent working relationship with the regulators, Jerritt Canyon should actively develop a permitting strategy and plan that involves seeking permit approvals and modifications on a regular basis.

## 26.6 SAFETY

- Efforts to alleviate air quality concerns in the processing facilities and provide working areas that can be accessed without wearing respirators should be a top priority and pursued vigorously.

## 27.0 REFERENCES

NI 43-101 Technical Report on the Jerritt Canyon Mine, Elko County, Nevada, USA, RPA, 2018

Website for Ely Gold Resources, Inc., 2020

Website for Jerritt Canyon Gold LLC, 2020

## DATE AND SIGNATURE PAGE

Respectfully submitted, this 8th day of June 2020.

Joseph A. Kantor, MMSA (Geology) #1309QP

## DATE AND SIGNATURE PAGE

Respectfully submitted, this 8th day of June 2020.

Christopher J. Wyatt, QP (Mining) #1364QP

## CERTIFICATE OF AUTHOR

I, **Joseph A. Kantor**, 3792 Worthington Place, Southport, North Carolina, 28461, USA, certify that:

1) I am an independent consulting geologist providing exploration services to the mineral exploration community.
2) I graduated from Michigan Technological University with a B.S. degree in Geology in 1966 and an M.S. degree in 1968.
3) I am a member of SME and a Qualified Professional (QP) Member – Mining and Metallurgical Society of America, QP (Geology) Member Number 01309QP.
4) I have practiced my profession continuously since 1966 and have been involved in projects and evaluations exploring for precious and base metals in the United States, Canada, China, Mexico, Kazakhstan, Mongolia, and elsewhere. As a result of my experience and qualifications, I am a Qualified Professional, as defined by National Instrument 43-101 and am a Qualified Person (Professional) for this Instrument.
5) I have read the definition of "qualified person" as set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6) I am responsible for the general preparation of this technical report titled "Technical Report on the Jerritt Canyon Mine, Elko County, Nevada, dated June 8, 2020.
7) I was Exploration Manager at the Jerritt Canyon Mine from 1995 – 2000 for Independence Mining and AngloGold NA. I consulted at the Jerritt Canyon Mine for Queenstake in 2005.
8) To the best of my knowledge, information, and belief, my sections of the Technical Report contains all scientific and technical information that is required to be disclosed to make the report not misleading.
9) I am independent of Ely Gold Royalties, Inc., as set out in Section 1.4 of the Canadian National Instrument 43-101.
10) I have read the Canadian National Instrument 43-101 and the Technical Report has been prepared in compliance with the Canadian National Instrument 43-101 and Form 43-101F1.
11) I consent to the filing of this Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public.

Dated this 8th day of June 2020.

"Signed and Sealed"

Joseph A. Kantor, MMSA (Geology) #1309QP

## CERTIFICATE OF AUTHOR

I, **Christopher J. Wyatt**, 514 Americas Way, #9694, Box Elder, South Dakota, 57719, USA, certify that:

1) I am an independent consulting geoscientist providing services to the minerals industry.
2) I graduated from the University of California, Berkeley with a B.S. in Mineral Engineering in 1990 and from the Colorado School of Mines with an M.S. Degree in Mineral Economics in 2008.
3) I am a Registered Member of SME (3574500) and a Qualified Professional (QP) Member of the Mining and Metallurgical Society of America, QP (Mining) Member Number 1364QP.
4) I have practiced my profession continuously since 1990 and have been involved in projects and evaluations for involving precious and base metals in the United States, Canada, Australia, and elsewhere. As a result of my experience and qualifications, I am a Qualified Professional, as defined by National Instrument 43-101 and am a Qualified Person (Professional) for this Instrument.
5) I have read the definition of "qualified person" as set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6) I am responsible for the general review and preparation of this technical report titled "Technical Report on the Jerritt Canyon Mine, Elko County, Nevada, dated June 8, 2020.
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Dated this 8th day of June 2020.

"Signed and Sealed"

Christopher J. Wyatt, QP (Mining) #1364QP