

**TECHNICAL REPORT AND MINERAL RESOURCE ESTIMATE  
FOR THE LEWIS PROJECT, LANDER COUNTY,  
NEVADA, USA**



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## 1 Summary

### 1.1 Overview

Gold Standard Ventures Corp.'s ("Gold Standard" or "Gold Standard Ventures" or "GSV" or the "Company") Lewis Property (the "Property" or the "Property" or the "Lewis Project" or the "Lewis Property") is located in the Battle Mountain Mining District, Lander County, Nevada, USA. The Property comprises 378 unpatented, 7 patented active Bureau of Land Management ("BLM") mining claims and two fee land parcels comprising approximately 5,369 acres (2,173 hectares) that adjoin and lie immediately north of Nevada Gold Mines' ("NGM") Phoenix Mine, a large open pit copper-gold-silver producer.

Gold Standard commissioned APEX Geoscience Ltd. ("APEX") of Edmonton, Alberta, Canada to complete an initial National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") Mineral Resource Estimate (MRE) for the Virgin gold and silver deposit ("the Virgin Deposit" or the "Virgin Resource") and to summarize recent exploration completed on the Property by Gold Standard from 2016 to 2018. The authors of this Technical Report include Mr. Michael Dufresne, Mr. Steven Nicholls and Mr. Warren Black of APEX. All authors are independent of Gold Standard and are Qualified Persons ("QP"s) as defined by NI 43-101.

This Technical Report has been prepared in accordance with NI 43-101 guidelines for technical reporting and the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) "Best Practices and Reporting Guidelines" for disclosing mineral exploration. The effective date of this Technical Report is May 1, 2020.

### 1.2 Property Description and Ownership

Gold Standard currently holds 100% interest in the Lewis Property, subject to an annual advance minimum royalty payment of US\$60,000 and a net smelter returns royalty ("NSR") on production equal to 3.5% for gold and silver and 4% for all other minerals. Gold Standard initially acquired a 19.9% interest in Battle Mountain Gold Inc. ("Battle Mountain") on May 6, 2016. Subsequently, on June 14, 2017, GSV acquired all of the issued and outstanding common shares of Battle Mountain. Battle Mountain was delisted from the TSX Venture Exchange and became a wholly-owned subsidiary of Gold Standard. In December 2017, Battle Mountain Gold (USA) Inc. and Madison Enterprises (Nevada) Inc. were merged into Madison Enterprises (Nevada) Inc., to simplify the ownership of the Lewis Gold Project. Recorded title to the Lewis Property is vested in Madison Enterprises (Nevada) Inc., a Nevada Corporation which is a wholly owned subsidiary of Battle Mountain, which in turn is a wholly owned subsidiary of GSV.

### 1.3 Geology and Mineralization

The Lewis Property has been historically mined for high-grade silver, gold, and base metals. Mineralization on the Property consists of intrusion related, sediment-hosted,

precious metal skarn and silicified fault/vein type mineralization. Several major mining companies have explored the Property since 1980, completing geological mapping, geochemical sampling, geophysical surveying, remote sensing and drilling, with the majority of historical work completed at the Virgin Resource area. Historical drilling has outlined a similar geological environment to that underlying the adjacent Phoenix Mine area, including direct on-strike extensions of the Antler Sequence stratigraphy, the Virgin Fault and mineralization styles. The Lewis Property covers approximately 3 miles (4.8 km) of highly prospective ground northward along this structural-stratigraphic corridor.

## **1.4 Recent Exploration**

### **1.4.1 *Madison Minerals and Phoenix Joint Venture (JV) Exploration 2002-2008***

Between 2002 and 2008, Madison Minerals and Battle Mountain completed 176 drillholes totalling 118,228 ft (36,036 m) from 147 RC holes, 27 core holes and 2 core tail holes (RC top and core bottom) as part of the Phoenix Joint Venture (JV). This drilling focused on the Virgin Structural Zone utilizing both core and RC drilling, along with targets at the Buena Vista Zone near the southeast edge of the Property, and the Phoenix Mine dump material found at the Property. The 2002-2008 drilling extended the mineralization along strike at both the Virgin Resource area and Buena Vista target. Additionally, Madison and the Phoenix JV completed several geophysical surveys, geological mapping, and soil sampling programs.

### **1.4.2 *Gold Standard Ventures Exploration 2016-2018***

Exploration work completed by Gold Standard at the Lewis Property from 2016 to 2018 consists of geological mapping, geochemical sampling, geophysical surveying and drilling.

In 2016, a helicopter-borne magnetic and radiometric survey was flown over the Project and a ground gravity survey was completed. The results from the airborne magnetics indicate zones of high magnetic intensity over known intrusions. In addition, the results delineate two major east-northeasterly-trending lineaments that coincide locally with the distribution of variably clay-pyrite-altered, Tertiary dikes and fracture zones. These dikes and fracture zones are associated with gold-silver mineralization in the southern part of the Lewis Property and in the northern portion of the Fortitude Deposit. The radiometric results show a good spatial coincidence between gold-silver bearing fault zones and radiometric gradients. The results of the ground gravity survey indicate that some of the major gold-silver-bearing fault zones coincide with high gravity gradients. Many of the gravity gradients coincide with gradients observed in the magnetic- and radiometric-results and mapped faults.

Recent work has focused on the eastern portion of the claim block at the Lewis Property, along a northerly-trending, gold-silver-arsenic-bearing structural corridor that extends from the inactive Iron Canyon gold-silver mine in the south through the

historical Apex antimony mine to the Antimony King mine in the north. This style of mineralization is associated with northerly-trending, clay-altered Tertiary dikes of similar composition to those that occur in the Fortitude - Phoenix Mine area.

The grid-soil sampling was completed over portions of the southwestern part of the Property in 2016. Previous work by GSV indicates that gold-silver-bearing target zones, contained within reactive, Antler Sequence host-rocks beneath the Golconda Thrust, are typically expressed by multi-element anomalies in the Havallah/Pumpnickle formations at surface. These surface anomalies are characterized by elevated arsenic, bismuth, low-level gold and silver, and other pathfinder elements.

Gold Standard conducted drilling between 2016 to 2018 at the Lewis Property. The drill programs focused on exploration, as well as resource delineation/expansion drilling at the Virgin Resource area. Gold Standard completed 15 drillholes: 7 core, 3 RC holes with core tails, and 5 RC holes totaling 23,735 ft (7,234 m) on the Lewis Property during the period. The drilling tested the Buena Vista South, Southwest Peak, Virgin Central and Virgin Resource areas. In addition to significant intersections at the Virgin Resource area, anomalous results were also obtained outside the resource area at Virgin Central with 0.45 grams per tonne (g/t) gold (Au) and 47.04 g/t silver (Ag) over 20 ft (6.1 m) core length, at Buena Vista South with 0.78 g/t Au over 35 ft (10.7 m) core length and Southwest Peak with 0.631 g/t Au and 3.62 g/t Ag over 25 ft (7.6 m) core length.

## 1.5 QA/QC and Data Verification

The Lewis drillhole database was exported and provided to APEX by GSV in May 2019 and again in August, 2019. The final August, 2019 export for collars, assays, down hole surveys, lithologies and density data was reviewed for completeness, with the Virgin Resource area drillholes identified and separated out as a subset. The database contained 949 drillholes. A total of 490 of the 949 holes were identified as being on the Lewis Property, with 230 of the holes completed in the Virgin Resource area.

APEX conducted a comprehensive database validation for the Virgin Resource area drillholes utilizing work and property visits conducted in 2013 – 2014 (Atkinson, 2014) and more recent work by APEX personnel during the latter half of 2019 and a property visit conducted by the lead author of the current Technical Report on August 17, 2019.

Of the 230 Lewis Virgin Resource area drillholes, a total of 193 holes were reverse circulation (RC) drillholes, 33 were core holes, and 4 holes were of unknown hole type and are presumed to have been historical RC holes. The entire 230 holes in the Virgin Resource area total 148,716 ft (45,328 m) of drilling with 123,235 ft (37,562 m) in 197 RC holes (4 unknown type and assumed to be RC) completed between 1980 and 2018, and 25,481 ft (7,767 m) in 33 core holes completed between 2003 and 2018.

The drillhole assay database consists of gold and silver analyses from 226 of the 230 drillholes within the Virgin Resource area drillhole database. From these 230 drillholes, there are 29,512 sample/interval entries, of which 599 intervals (3,454 m or

11,313 ft) contain no assays and were not sampled and/or not analyzed. These blank intervals are commonly found at the top of the drillholes before mineralization is first encountered or in-between mineralized zones, or they belong to the pre-2000 historical drillholes (224 intervals) that come from logs with only handwritten assays in the logs. It is quite possible these holes and assays represent selective sampling.

The vast majority of the 2002 to 2018 drillholes were collar surveyed and contain downhole surveys. Most if not all the 53 historical drillholes that were completed between 1980 and 1997 do not have downhole surveys. However, the vast majority of these holes were either vertical, or of short length or both, therefore hole deviation was likely not a significant issue for these holes. The collar locations of the 53 historical drillholes was verified by direct surface surveys or by orthorectification of detailed CAD maps with the grid space and collars oriented in UTM space. Elevations for the historical drillholes were obtained through snapping them to the Lewis Property DTM.

## 1.6 Initial Mineral Resource Estimate – Virgin Resource Area

This Technical Report details an initial Mineral Resource Estimate (MRE) for the Virgin Resource area on the Lewis Property based on recent and historical drilling and exploration work.

The Virgin area MRE is reported at a range of gold cut-off grades in Table 1.1 and is classified as Inferred only. The Lewis Project Virgin Resource area Inferred MRE is reported undiluted and uses a cut-off grade of 0.20 g/t Au (0.006 opt), which was constrained within an optimized pit shell constructed using a diluted resource. The Inferred MRE is comprised of 7.74 million tonnes at 0.83 g/t (0.024 opt) gold for 205,800 ounces of gold, an average of 14.22 g/t (0.42 opt) silver for 3,537,300 ounces of silver, and an average of 1.00 g/t (0.029 opt) gold equivalent (AuEq uses an 80:1 silver to gold ratio) for 248,300 oz AuEq. The base case lower cut-off of 0.2 g/t Au is highlighted in Table 1.1 below. Other cut-off grades are presented for review ranging from 0 g/t Au to 0.5 g/t (0.015 oz/t) Au.

**Table 1.1 Sensitivity analysis of the undiluted Lewis Project Inferred Resource Estimate constrained within a US\$1,500 pit shell with a varying Au cut-offs.**

Au Cut-off (g/t)	Au Cut-off (opt)	Tonnes (million tonnes)	Tons (million tons)	Au Grade (g/t)	Au Grade (opt)	Contained Au (troy oz)***	Ag Grade (g/t)	Ag Grade (opt)	Contained Ag (troy oz)***	AuEq Grade (g/t)	AuEq Grade (opt)	Contained AuEq (troy oz)***
<b>*Inferred Mineral Resource (MRE)</b>												
0	0.000	9.01	9.94	0.73	0.021	211,200	13.49	0.393	3,909,700	0.89	0.026	258,100
0.1	0.003	8.67	9.56	0.76	0.022	210,600	13.82	0.403	3,850,500	0.92	0.027	256,800
0.14	0.004	8.43	9.29	0.77	0.023	209,600	13.92	0.406	3,773,100	0.94	0.027	254,900
<b>0.2**</b>	<b>0.006</b>	<b>7.74</b>	<b>8.53</b>	<b>0.83</b>	<b>0.024</b>	<b>205,800</b>	<b>14.22</b>	<b>0.415</b>	<b>3,537,300</b>	<b>1.00</b>	<b>0.029</b>	<b>248,300</b>
0.3	0.009	6.43	7.08	0.95	0.028	195,300	14.85	0.433	3,068,900	1.12	0.033	232,100
0.4	0.012	5.14	5.66	1.09	0.032	180,800	15.58	0.454	2,574,100	1.28	0.037	211,700
0.5	0.015	4.14	4.57	1.25	0.036	166,400	16.29	0.475	2,171,300	1.44	0.042	192,500

*\* Inferred Mineral Resources are not Mineral Reserves. Mineral resources which are not mineral reserves do not have demonstrated economic viability. There has been insufficient exploration to define the inferred resources tabulated above as an indicated or measured mineral resource, however, it is reasonably expected that the majority of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. There is no guarantee that any part of the mineral resources discussed herein will be converted into a mineral reserve in the future. The estimate of mineral resources may be materially affected by metallurgical, commercial, environmental, permitting, legal, marketing or other relevant issues. The mineral resources have been classified according to the Canadian Institute of Mining Definition Standards for mineral resources and mineral reserves (May, 2014).*

*\*\*The recommended reported resources are highlighted in bold and have been constrained within a \$US1,500/ounce of gold optimized pit shell.*

*\*\*\*Contained ounces may not add due to rounding.*

The 2019 Lewis Project MRE has been classified as comprising Inferred resources utilizing recent CIM definition standards. The classification of the Lewis Resource was based on geological confidence, data quality and grade continuity. All reported Mineral Resources occur within a pit shell optimized using values of \$US1,500 per ounce for gold. Mineral resources are not mineral reserves and do not have demonstrated economic viability.

The Lewis Property MRE and statistics were completed in 2020 by Mr. Black, M.Sc., P.Geo. under the direct supervision and direction of Mr. Nicholls, BA.Sc., MAIG and Mr. Dufresne, M.Sc., P. Geol., P.Geo. all QPs as defined by NI 43-101. The Lewis Virgin area drillhole database utilized by APEX for resource estimation, including the recently completed GSV 2016 - 2018 drillholes, consists of 148,716 ft (45,328 m) in 230 holes, including 53 historic drillholes (pre-2000) and 177 post-2000 modern and fairly complete holes in terms of information. The database includes 123,235 ft (37,562 m) in 197 RC holes and 25,481 ft (7,767 m) in 33 core holes completed between 2003 and 2018. The core holes represent 14.3% of the drillhole population by number of holes and 17.1% by footage. This is deemed an acceptable number of core holes for the verification of geology and assays in the drillhole database and completion of the MRE. The historic drillholes were completed between the early 1980's and 1997 with no core drilling.

The exported assay database provided to APEX by GSV contained 45,967 sample/assay interval entries. The assay database was trimmed down to the Lewis Virgin Resource area drillholes. The Virgin Resource area database consists of 29,512 sample intervals, with 4,217 intervals for the historic drillholes and 25,295 intervals for the GSV and related company drilling for the 2002 to 2018 drillholes. The sample database contains 599 entries of NS and/or blanks, approximately 2% of the database. Most of these entries are attributed to unsampled intervals, especially most of the >5 ft intervals (70 samples), and the collar/overburden top of hole intervals. The remaining dominantly 5 ft sample intervals without samples are attributed mostly to poor recovery, a few lost samples or missing data.

The Virgin Resource area MRE was estimated within three-dimensional (3D) solids that were created from the cross-sectional lode interpretation of geology and alteration. The upper contact has been cut by the topographic surface. There is only minor overburden present at the Lewis Property. Grade was estimated into a block model with a block size of 3 m (9.84 ft) (X) by 3 m (9.84 ft) (Y) by 3 m (9.84 ft) (Z). A total of 506 bulk density measurements were available in the drillhole database to assess the mineralized zones and waste rock. A total of 49 bulk density samples were situated

within the mineralized wireframes. The bulk density samples situated within the mineralized zones were examined on a lode by lode basis. All blocks within the Virgin block model were assigned a density of 2.68 g/cm<sup>3</sup>. Grade estimation of gold and silver was performed using Ordinary Kriging (OK) and locally varying anisotropy to ensure grade continuity in various directions is reproduced in the block model for each individual domain. For the purposes of pit optimization review, the blocks that contain waste were diluted by estimating a waste value using composites within a transition zone along the outer boundary of the estimation domains. The final gold and silver grade assigned to each block for the pit optimization is a volume-weighted average of the estimated gold and silver grade for the mineralized domain and waste domain grade values. The reported undiluted MRE only reports the volume of the blocks within the hard boundary mineralized domains. The Inferred MRE is constrained within a drilled area that extends approximately 5.4 km (3.4 miles) along strike to the north-northwest, 800 m (2,625 ft) across strike to the east and 550 m (1,805 ft) down dip.

### 1.7 Other Exploration Targets

The authors of this Technical Report and the Virgin MRE have reviewed the drillhole information for not only the Virgin Resource area but also for a number of the surrounding target areas. The area on strike and north of the Virgin Resource area following the Virgin Structural Zone, i.e. the Virgin to the Hider, White & Shiloh areas, is considered not well drilled and is prospective for additional discoveries. A number of drillholes have yielded significant intersections in the area.

In addition to the initial MRE at the Virgin Deposit and its possible extension to the north, high-value exploration targets on the Lewis Project include: 1) the Southwest skarn target where Barrick Gold Corporation (“Barrick”) drillhole FWL-30 intersected 17 m of 5.7 g Au/t – an intercept that remains open in multiple directions; and 2) the Buena Vista - Meagher corridor immediately north of Nevada Gold Mines’ (“NGM”) Phoenix Mine. The strong gravity gradient and historic shallow intercepts in upper plate Havallah Sequence rocks (including 27.4m of 2.20 g Au/t in drill hole BVD-9A) indicate that the structure and alteration system may also be present in the favorable Antler host rocks at depth. Recent drilling by GSV yielded an intercept of 1.22 g/t over 20 ft (6.1 m) at Buena Vista South and 0.63 g/t Au over 25 ft (7.6 m) at the Southwest Peak target area.

### 1.8 Risks and Uncertainties

The Virgin Resource area drilling is considered fairly extensive, however, the geological complexity of the Virgin Deposit is considered high. Most of the gold and silver mineralization is considered to be in zones that are structurally controlled and sub-vertical, dipping to the west, combined with some zones considered shallow dipping stratabound mineralization also dipping to the west. The detailed domain interpretation of these zones in the core area is complex and difficult and therefore presents some risk in the accuracy of this interpretation.

Little work has been conducted on the interpretation of mineralization that is oxidized and is potentially easily heap leachable versus sulphide based material, that still may be heap leachable, but may be better suited to other metallurgical processes such as gravity, flotation and/or tank leach. In general, there is little metallurgical data and the authors have relied upon information from the adjacent NGM Phoenix Pit and operations for assumptions related to reasonable prospects of future economic extraction. In addition, the size of the current resource dictates that there may be a strong dependence on eventually processing any material through the Phoenix operation rather than constructing any significant stand alone operation and processing plant. Therefore, in that kind of a scenario, there will be risk in being able to come to commercial terms with NGM in order to utilize the Phoenix operation processing facility as a 3<sup>rd</sup> Party facility.

Potential future mining of the Virgin Resource would likely necessitate a cut back of the current north wall of NGM's Phoenix Pit. There could be geotechnical risk and certain liabilities incurred in what would be effectively a cut back of NGM's Phoenix Pit that would likely have to be discussed, negotiated and permitted with NGM at minimum.

The authors of this report are not aware of any other unusual risks or uncertainties, other than those that are inherent with all mineral exploration and development projects, with respect to the MRE discussed in this report for the Virgin Deposit.

## 1.9 Conclusions and Recommendations

The newly identified MRE for the Virgin Resource area highlights the potential of the Lewis Property to identify new discoveries and mineral resources. Additional work, including a significant amount of drilling is warranted at the Lewis Property in order to expand upon the existing initial Virgin Deposit MRE, as well as at a number of additional exploration targets that could yield new discoveries and /or additional resources.

In the opinion of the authors of this Technical Report, the exploration techniques and the analytical and sampling procedures employed by Gold Standard at the Lewis Project are consistent with industry standards and are appropriate both with respect to the type of mineral deposit(s) being explored and with respect to ensuring overall data quality and integrity. Based upon the lead author's site visit, the currently identified MRE present at the Lewis Property, and the results of the exploration work discussed in this report, it is the opinion of the authors of this Technical Report that the Lewis Project warrants continued exploration work.

Additional in-fill and step-out drilling is recommended for the currently defined MRE at the Virgin Resource area. New drilling should be conducted in order to obtain metallurgical samples and tighten drillhole spacing to provide information to update the complex geological model with priority given to areas that consist of predominately historical data points. With respect to potential expansion of the current Virgin Resource area MRE, continued drill testing of the respective stratigraphic and structural strike extensions, particularly to the north of the current Virgin Resource area (up to and

including the Hider, White & Shilo areas) and at depth is recommended. Furthermore, additional drilling for metallurgical sampling and testing is recommended in order to provide the data necessary for a more thorough metallurgical characterization of the Virgin Deposit.

Regarding regional exploration, continued fieldwork comprising geological mapping, as well as geochemical sampling is recommended to refine the geological model for the Lewis Property and assist in drill target delineation. Soil geochemical sampling is recommended over and along strike of all defined target areas in order to prioritize targets for further detailed work and drilling. The fieldwork should be followed-up with exploration drilling at portions of the Buena Vista – Meagher Trend, the Southwest Peak area, the Antler North Target area and along the Trinity Trend.

The estimated cost of the recommended work programs for the Lewis Property is itemized below and totals US\$3.36 million (Table 1.2). In the opinion of the authors of this report, all of the recommended work is warranted at this time and none of the different work programs are dependent upon the results of any of the others.

**Table 1.2. Summary of Estimated Costs for the Recommended Work Programs at the Lewis Project.**

Activity Type					Cost US\$
Continued Database Validation & Management					50,000
Geological Mapping, Prospecting & Sampling					50,000
Geochemical Soil Sampling					50,000
Metallurgical Testwork					100,000
Geological Modelling & Interpretation					50,000
Update & New Resource Modelling					50,000
Earthworks, Bonding & Environmental					100,000
				<b>Other Activities Subtotal</b>	<b>\$450,000</b>
<b>Drilling</b>					
Target	Cost/ft (All-in)	Cost/m (approx.)	Quantity (ft)	Quantity (m)	Cost US\$
Virgin Resource Expansion (RC)	\$57/ft	\$187/m	13,125	4,000	750,000
Virgin Infill PQ Core Met Work	\$150/ft	\$492/m	5,905	1,800	878,000
Exploration Targets (RC)	\$57/ft	\$187/m	19,685	6,000	1,122,000
<b>Drilling Subtotal</b>					<b>\$2,750,000</b>
					<b>Activities Subtotal</b>
					<b>\$3,200,000</b>
					<b>Contingency (~5%)</b>
					<b>\$160,000</b>
<b>Grand Total</b>					<b>\$3,360,000</b>



## 2 Introduction

### 2.1 General

Gold Standard Ventures Corp. (“Gold Standard” or “Gold Standard Ventures” or “GSV” or the “Company”) is a Vancouver-based mineral exploration Company, listed on the Toronto Stock Exchange (TSX: GSV) and on the NYSE American LLC exchange (NYSE:GSV). The Lewis Property comprises 378 unpatented, 7 patented active Bureau of Land Management (“BLM”) mining claims and two fee land parcels comprising approximately 5,369 acres (2,173 ha) in Lander County, Nevada (“NV”) (Figure 2.1). The Lewis Project is located in the Battle Mountain Mining District and adjoins Nevada Gold Mines’ (“NGM”) Phoenix Mine, a large open pit copper-gold-silver producer.

Gold Standard commissioned APEX Geoscience Ltd. (“APEX”) to provide an initial Mineral Resource Estimate (“MRE”) for the Virgin Deposit and to summarize recent exploration completed on the Property by Gold Standard from 2016 to 2018.

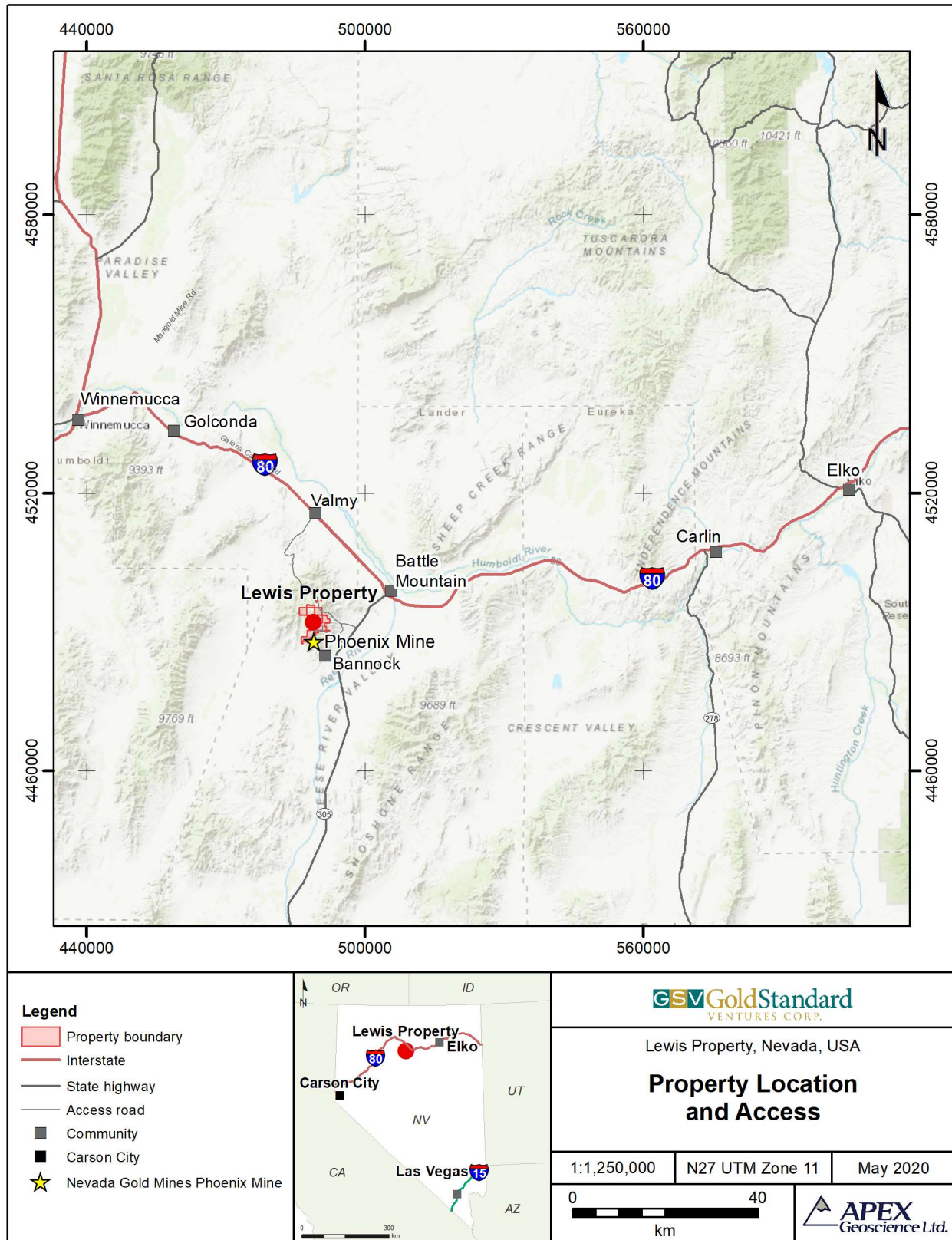
This Technical Report has been prepared in accordance with National Instrument 43-101 (NI 43-101) Standards of Disclosure for Mineral Projects and guidelines for technical reporting, Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) “CIM Best Practices and Reporting Guidelines” for disclosing mineral exploration. The mineral resource has been estimated using the CIM “Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines” dated November 29, 2019 and the CIM “Definition Standards for Mineral Resources and Mineral Reserves” amended and adopted May 10th, 2014. The effective date of this Technical Report is May 1, 2020. The MRE, interpretations and conclusions reported herein are based on technical data available prior to the effective date of this Technical Report.

### 2.2 Project Scope and Terms of Reference

This Technical Report details an initial MRE for the Virgin Deposit on the Lewis Property and provides an update of recent exploration completed by GSV. Gold Standard has been actively exploring the Lewis Property, primarily for precious metals, since they acquired an interest in Battle Mountain Gold Inc. (“BMG” or “Battle Mountain”) in 2016. Recent exploration conducted by GSV on the Property includes geophysical surveying, geological mapping, sampling and three drill programs between 2016 to 2018.

The authors of this Technical Report include Mr. Michael Dufresne, Mr. Steven Nicholls and Mr. Warren Black of APEX. All authors are independent of Gold Standard and are Qualified Persons (“QP”s) as defined by NI 43-101. The CIM defines a QP as “an individual who is a geoscientist with at least five years of experience in mineral exploration, mine development or operation or mineral project assessment, or any combination of these; has experience relevant to the subject matter of the mineral project and the technical report; and is a member or licensee in good standing of a professional association.”

Figure 2.1. General location of Gold Standard’s Lewis Property.



The primary author of this report, Mr. Dufresne of APEX, supervised the preparation of, and is responsible for the publication of this entire Technical Report. Mr. Dufresne is a Professional Geologist with the Association of Professional Engineers and Geoscientists of Alberta (APEGA), a Professional Geologist with the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) and has worked as a geologist for more than 30 years since his graduation from University. Mr. Dufresne is a QP and has been involved in all aspects and stages of mineral exploration in North America, including skarn, intrusion related, carlin and epithermal-type precious metal exploration and resource estimations in Nevada, USA. Mr. Dufresne visited the Lewis Property on August 17, 2019.

Mr. Black and Mr. Nicholls are responsible for Section 14 of this Technical Report, and contributed to Sections 1 and 25. Mr. Black completed the three-dimensional modelling, block modelling and resource estimations under the direct supervision of Mr. Nicholls and Mr. Dufresne. Mr. Black is a Resource Geologist with APEX and is a Professional Geologist with the Association of Professional Engineers and Geoscientists of Alberta (APEGA). Mr. Black has worked as a geologist for more than 8 years since his graduation from University. Mr. Nicholls is a Senior Consulting Resource Geologist with APEX and is a Member of the Australian Institute of Geoscientists of Australia (AIG). Mr. Nicholls has worked as a geologist for more than 19 years since his graduation from University. Neither Mr. Nicholls or Mr. Black visited the Lewis Property as Mr. Dufresne's property visit was deemed sufficient by the QPs.

### 2.3 Sources of Information

This Technical Report is a compilation of proprietary and publicly available information, as well as information obtained from the recent exploration programs conducted on the Property by Gold Standard from 2016 to 2018. All sources of information are cited in Section 19: References of this report.

References used in this Technical Report comprise publicly available reports, including government publications and journal manuscripts, available through the United States Geological Survey (USGS) and scientific publishing houses, respectively. Information on the regional geological setting in north-central Nevada was sourced from various government reports and journal articles (e.g., Breit et al., 2015; Cline et al., 2005; Fithian, 2015; Leonardson, 2015; Price, 2010; Wallace et al., 2007). A large portion of the background information for prior exploration and local geology comes from work completed on the Property prior to Gold Standard's ownership and detailed in historical and recent reports on the Property by Atkinson (2014), McArthur and Turnbull (2002), McArthur (2003), McArthur and Turnbull (2004) and McArthur (2007).

The authors have reviewed all publicly available information, proprietary material and geochemical data and found no significant issues or inconsistencies. Based upon the lead author's property visit and review of all available information, the authors take responsibility for all the information herein, and deem the data of sufficient quality to proceed with a MRE for the Virgin Resource area.

## 2.4 Units of Measure

With respect to units of measure, unless otherwise stated, this Technical Report uses:

- Abbreviated shorthand consistent with the International System of Units (International Bureau of Weights and Measures, 2006);
- 'Bulk' weight is presented in both United States short tons (tons; 2,000 lbs or 907.2 kg) or metric tonnes (tonnes; 1,000 kg or 2,204.6 lbs.);
- Geographic coordinates are projected in the Universal Transverse Mercator (UTM) system relative to Zone 11 of the North American Datum (NAD) 1927;
- Currency in United States dollars (US\$), unless otherwise specified (e.g., Canadian dollars, CDN\$; Euro dollars, €);
- Assay and analytical results for precious metals are quoted in parts-per-million (ppm), parts-per-billion (ppb), ounces per short ton (opt or oz/st), where "ounces" refers to "troy ounces" and "ton" means "short ton", which is equivalent to 2,000 lbs. Where ppm (also commonly referred to as grams per metric tonne [g/t]) have been converted to opt (or oz/st), a conversion factor of 0.029166 (or 34.2857) was used;
- Temperature readings are reported in degrees Fahrenheit (°F) and/or Celsius (°C) and;
- Lengths are quoted in feet (ft), kilometres (km), metres (m) or millimetres (mm).

All abbreviations used throughout this report are provided in Appendix 1.

## 3 Reliance of Other Experts

This Technical Report incorporates and relies on contributions with respect to the details of the surface and subsurface mineral ownership as well as permitting and environmental status from other experts including staff or subcontractors in the employ of Gold Standard. Gold Standard provided the land position with a title opinion dated June 8<sup>th</sup>, 2017 (Harris, 2017), for which Faillers (Pers Comm., June 15, 2020) has confirmed the details remain accurate and in effect as of June 15, 2020. The authors of this Technical Report have not attempted to verify the legal status of the Property. However, the lead author, Mr. Dufresne checked the status of 101 (27%) of the BLM lode mineral claims and confirmed they are active and in good standing as of the date of this Technical Report according to the BLM's LR2000 mineral claims registration system.

Gold Standard has assisted with and has provided the background information for Section 4.4 “Environmental Liabilities and Permits”. The authors of this Technical Report have not attempted to verify status of any permits or any potential environmental liabilities that may or may not exist for the Property.

## 4 Property Description and Location

### 4.1 Description and Location

The Lewis Property is located in north-central Nevada in Lander County within the Battle Mountain Mining District. The Property is located in Township 31 N, Range 43 E within Sections 2 to 5, 8 to 11, 14 to 17, 20 to 21 and Township 32 N, Range 43 E within Sections 22, 27 to 29, 31 to 34. The location of the Property is found on the USGS Antler Peak and Galena Canyon 1:24,000 scale, 7.5-minute series quadrangle maps. The approximate center of the Lewis Property is located at Universal Transverse Mercator (“UTM”) 488,932 m Easting and 4,492,094 m Northing, Zone 11, North American Datum 27 (“NAD27”).

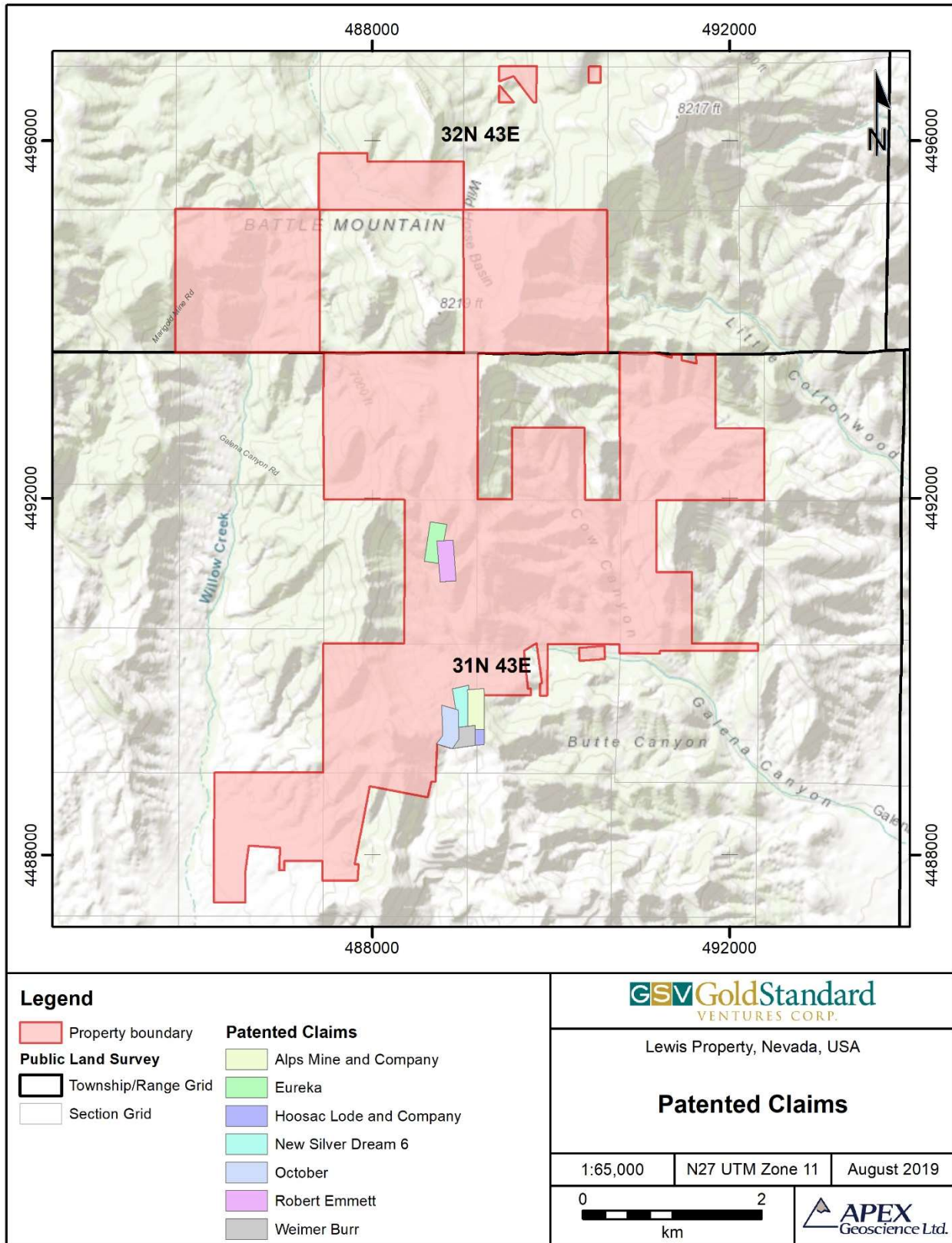
The Project consists of a contiguous land position totalling 378 unpatented and 7 patented active Bureau of Land Management (“BLM”) mining claims and two fee land parcels comprising approximately 5,369 acres (2,173 ha). The Lewis Property boundary and patented active BLM mining claims are shown on Figure 4.1.

Unpatented lode mining claims grant the mineral rights and access to the surface for exploration activities which cause insignificant surface disturbance. The mineral rights are maintained by paying a maintenance fee of \$165 per claim to the Department of Interior, Bureau of Land Management (“BLM”) prior to the end of the business day on August 31 every year. A notice of intent to hold must also be filed with the Lander County Recorder on or before November 1 annually along with a filing fee of \$12 per claim plus a \$4 fee document charge. The claims are valid as long as the annual filings and assessment payments are made. The federal BLM maintenance fees and the filing fees and taxes for the Lewis Property have been paid in full for 2019-2020. A complete listing of all claims on file with the BLM and Lander County is presented in Appendix 2.

### 4.2 Ownership Agreements

The most recent Title Opinion on the Lewis Property by Harris (2017) detailed the ownership of the Property as follows: recorded title to the 360 unpatented lode claims, 7 patented lode mining claims and 1 fee parcel as vested in the Phoenix Joint Venture, a joint venture between Madison Enterprises (Nevada) Inc. (Madison) (60%) and Battle Mountain Gold (USA) Inc. (BMG) (40%). Battle Mountain located an additional 18 unpatented lode claims from August to October, 2016 and added a new fee land parcel to the Property in March, 2017. Mr. Jeff Faillers (Pers Comm., June 15, 2020) has confirmed the details provided by Harris (2017), remain accurate and in effect as of June 15, 2020.

Figure 4.1. Lewis Project patented active BLM mining claims.



Since the date of the previous Title Opinion for the Property by Harris (2017), Battle Mountain has become a wholly-owned subsidiary of Gold Standard Ventures. Gold Standard initially acquired a total of 10,481,435 common shares of Battle Mountain, representing 19.9% Battle Mountain's issued and outstanding common shares at the time at a total subscription price of US\$3,668,502.25 on May 6, 2016 (Gold Standard, 2016). Gold Standard also acquired 5,240,717 Battle Mountain share purchase warrants at that time (Gold Standard, 2016). Subsequently, a plan of arrangement known as the "Arrangement Agreement" was completed on June 14, 2017, under the Business Corporations Act of British Columbia, whereby Gold Standard acquired all of the issued and outstanding common shares of Battle Mountain for 0.1891 of a common share of Gold Standard plus \$0.08 in cash for each Battle Mountain share. Battle Mountain was delisted from the TSX Venture Exchange and became a wholly-owned subsidiary of Gold Standard.

In December, 2017, Gold Standard completed a series of transactions to simplify the holding and funding structure of GSV and its subsidiaries. Battle Mountain Gold (USA) Inc. and Madison Enterprises (Nevada) Inc. (Madison) were merged into Madison Enterprises (Nevada) Inc., to simplify the ownership of the Lewis Gold Project. Recorded title to the Lewis Property is vested in Madison Enterprises (Nevada) Inc., a Nevada Corporation which is a wholly owned subsidiary of Battle Mountain, which in turn is a wholly owned subsidiary of Gold Standard Ventures (Gold Standard, 2019).

### 4.3 Royalties

There is only one royalty on the Lewis Property, which is currently owed to Victory Exploration Inc. (Victory), formerly F.W. Lewis Inc. A "Quitclaim Deed with Reserved Royalty on Mineral Production" was executed by Victory in December 2007 to the Phoenix Joint Venture, a JV consisting of Madison Enterprises (Nevada) Inc. (formerly Madison Enterprises Corp.) and Great American Minerals Inc. (formerly Great American Minerals Exploration (Nevada) LLC. The quitclaim was subject to the reservation of an annual advance minimum royalty of US\$60,000, subject to an annual escalation based upon a cost-of-living formula and a royalty on production equal to *"5% of the value of gold and silver produced and delivered to a refiner, free and clear of all costs"*, as well as a 4% net smelter returns royalty (NSR) for all other minerals (Harris, 2017).

Gold Standard entered into an agreement with Victory to reduce the royalty to 3.5% on gold and silver in consideration of Gold Standard's payment of US\$925,000 or 532,864 Gold Standard common shares with an effective date of June 10, 2016. The number of shares is based on US\$925,000 divided by the Applicable Closing Price on the effective date.

The agreement describes a potential Further Reduction of Royalty Rate to 2.5% by satisfying a number of other payments and conditions with Victory. The conditions and payments were not met and the NSR for gold and silver currently stands at 3.5%.

#### **4.4 Environmental Liabilities, Permitting and Significant Factors**

Nevada State Water Right Certificates of Appropriation are secured for Galena Spring and the Shiloh Shaft. Additional environmental liabilities are limited to the need to fence numerous historical workings.

Up to five (5) acres of exploration activities may be conducted on unpatented claims on BLM administered public land under a Notice. A Nevada Reclamation Permit (NRP) with the Nevada Division of Environmental Protection (NDEP) Bureau of Mining Regulation and Reclamation (BMRR) is required for more than five acres of surface disturbance conducted on private land/patented claims. An NRP is also required for surface disturbance located on public and private land within one mile of each other if the cumulative total is equal to or greater than five acres. All stakeholders are consulted prior to the granting of permits.

There are no issues regarding access to the mineral claims, however all historical and/or cultural sites must be avoided during GSV exploration activities. There are no plants or facilities located on the Property, only several abandoned buildings at Galena.

Surface rights for the original 360 unpatented mineral claims are held as part of the Copper Canyon Grazing Allotment. Exploration permits are obtained from the BLM and NDEP BMRR and all stakeholders are consulted prior to the granting of permits.

There are no other significant factors or risks that the authors are aware of that would affect access, title or the ability to perform work on the Lewis Property.

### **5 Accessibility, Climate, Local Resources, Infrastructure and Physiography**

#### **5.1 Accessibility**

The Lewis Project is located in north-central Nevada approximately 14.5 road miles (23 km) west-southwest of Battle Mountain, NV (population 3,635). The Property can be accessed by travelling south from Battle Mountain approximately 9.5 miles (15 km) on State Highway 305, then west along the Galena Canyon unimproved dirt road for approximately 5 miles (8 km). The Property can be accessed using four-wheel drive vehicle. Local access to most areas of the Property is via historical drill roads.

#### **5.2 Site Topography, Elevation and Vegetation**

Northern Nevada lies within the Basin and Range physiographic province, an area characterized by varied topography of north-south trending mountain ranges separated by broad valleys filled with lacustrine-gravel-volcaniclastic deposits. The Lewis Property is situated in the high desert portion of the Great Basin region with elevations in the Battle Range averaging from 3,000 ft (1,000 m) to 5,000 ft (1,500 m), up to a maximum elevation of 8,000 ft (2,450 m) at Antler Peak.



Vegetation on the Property consists of sparse sagebrush and bunchgrass with juniper and cottonwood trees found sporadically throughout the area.

### 5.3 Climate

The climate is semi-arid, with hot summers and cold winters. Weather records from Battle Mountain, NV, indicate average July maximum and minimum temperatures of 94.1°F (34.5°C) and 51.6°F (10.9°C), respectively. Average January maximum and minimum temperatures are 41.4°F (5.2°C) and 16.1°F (-8.8°C), respectively (Western Regional Climate Center, 2019). Average annual precipitation records from the Battle Mountain weather station from 1944 to 2016 indicate average annual snowfall and precipitation of 0 inches (0 cm) and 22 inches (56 cm), respectively.

### 5.4 Local Resources and Infrastructure

The town of Battle Mountain, NV, is located approximately 14.5 miles (23 km) by road to the northeast of the Lewis Property. It has a population of 3,635 according to 2010 United States Census data. The town of Winnemucca, NV, is located approximately 70 miles (113 km) northwest by road from the Lewis Property and hosts a population of 7,396. The nearest city to the Property is Elko, NV (population 18,297), located approximately 85 miles (137 km) to the east.

Battle Mountain is a full-service community, available services include housing, hotels, food and restaurants, hospital and an airport. Precious metal exploration and mining in the Battle Mountain area commenced in the late 1860s with the discovery of copper ore, followed by the discovery of placer gold in 1912. The Battle Mountain economy continues to be driven by mineral exploration and mining with several operational mines and exploration projects located in close proximity to the town. In addition, the town of Winnemucca has served as a center for exploration since the 1860s. Trained field and mining personnel are available locally from the towns of Battle Mountain, Winnemucca, or Elko, as well as from outlying areas in Lander County.

A three-phase powerline parallels State Highway 305 to the east of the Property and a second powerline is located at Nevada Gold Mines' Phoenix mine approximately 1.25 miles (2 km) south of the Property. Water for drilling and mining operations can be obtained on site from shallow wells.

The physiography of the Property area provides sufficient area for tailings disposal, waste disposal, leach pad sites and processing facilities.

## 6 History

### 6.1 History of the Battle Mountain Mining District

The Battle Mountain Mining District has a robust history of exploration and mining, dating back to the early 1860's with the discovery of silver in Galena Canyon. The Battle Mountain Mining District was established in 1866 following the discoveries of copper and silver near Copper Canyon (the current Phoenix Mine) in 1864. Several small mining operations were located within the boundaries of the present Lewis Property, including:

- The old Meagher Mine has 450 ft (137 m) of workings that were developed along a portion of a 2,000 ft (610 m) long, steep west-dipping, north-trending structure.
- The Hider Mine, with 300 ft (100 m) of workings, was primarily mined for lead-zinc-silver ores found in zones of oxidation and enrichment along a small portion of the 4,920 ft (1,500 m) long western splay of the Hider fault.
- Three mines: White, Shiloh and Battle Mountain, have 3,300 ft (1,006 m) of combined workings that were developed along a 5,000 ft (1,524 m) long, 55° to 85° west-dipping splay of the Virgin fault zone. Mining intersected silver-lead-zinc mineralization along the fault and in the adjacent Battle and Harmony Formations.
- The Blossom Mine, located 1,400 ft (426 m) south of Galena, was developed in the 1870's along a shear zone. Mine development consisted of 1,350 ft (411 m) of workings and production is estimated at 1,000 tons grading 0.088 opt (3.0 g/t) gold, 14.3 opt (490 g/t) silver and 11% lead. Mineralization consisted of pyrite, galena, and sphalerite veins and replacements in the Edna Mountain Formation and adjacent Virgin Fault. The fault acted as a conduit for hydrothermal mineralizing fluids.
- Workings at the Trinity Mine totalled 700 ft (213 m). A total of 18,000 tons of lead-zinc-silver ore was produced from the ore body that measured 130 x 35 x 12 ft (45 x 10.5 x 4 m).

Mining operations of the early high-grade deposits ceased by 1885. The discovery of gold at Bannock near the Copper Canyon access revamped the Battle Mountain Mining District in 1909 (Roberts and Arnold, 1965). Underground mining of copper deposits at Copper Canyon and Copper Basin occurred during both World Wars. Large scale open-pit operations at Copper Canyon and Copper Basin commenced in 1967, following acquisition by Duval Corporation from ASARCO LLC in 1961 (McArthur and Turnbull, 2004). It is thought that at this time, F.W. Lewis began acquiring claims in the area that ultimately became the Lewis Property.

The historical Bannock, Copper Canyon and Copper Basin discoveries of the Battle Mountain Mining District are located outside of the Lewis Property boundary. The reader is cautioned that the author has not verified the information regarding these historical deposits and the information provided above is not necessarily indicative of the mineralization on the Property that is the subject of this Technical Report.

## 6.2 Historical Work by Previous Companies at the Lewis Property

Historical exploration of the Lewis Property remains mostly unchanged from previous Technical Reports on the Property by McArthur and Turnbull (2002), McArthur (2003), McArthur and Turnbull (2004), McArthur (2007) and Atkinson (2014), thus much of the information in the following sub-sections has been summarized or reproduced from these reports.

Exploration of the Lewis Property from 1980 to 2001 has consisted of geological mapping, geochemical sampling, geophysical surveys and remote sensing. In addition, several drill programs have been completed at the Lewis Project by numerous companies, comprising a total of 129,072 ft (39,341 m). A summary of the historical drilling on the Property by company and year is shown in Table 6.1 and a breakdown of historical drilling by target area is shown in Table 6.2. Known historical drillhole locations and mineralized zones for the entire Lewis Property and the Virgin Deposit area are shown in Figures 6.1 and 6.2, respectively.

**Table 6.1. Historical drilling at the Lewis Property.**

Company	Years	Total ft (m)	Type of Drilling
Hart River Mines	1980 - 1985	30,556 ft (9,313 m)	Hammer, Air-track, Core
American Barrick Resource Corp.	1986 - 1989	59,793 ft (18,225 m)	RC, Core
Santa Fe Pacific Gold Corp.	1994 - 1995	18,470 ft (5,630 m)	RC
United Tex-Sol Mines Ltd.	1996-1997	12,315 ft (3,754 m)	RC
Golden Phoenix Mines	1998-1999	1,825 ft (556 m)	RC
Newmont Mining Corp.	2000-2001	6,113 ft (1,863 m)	RC

**Figure 6.1. Historical drill collar locations and historical mineralized zones at the Lewis Property.**

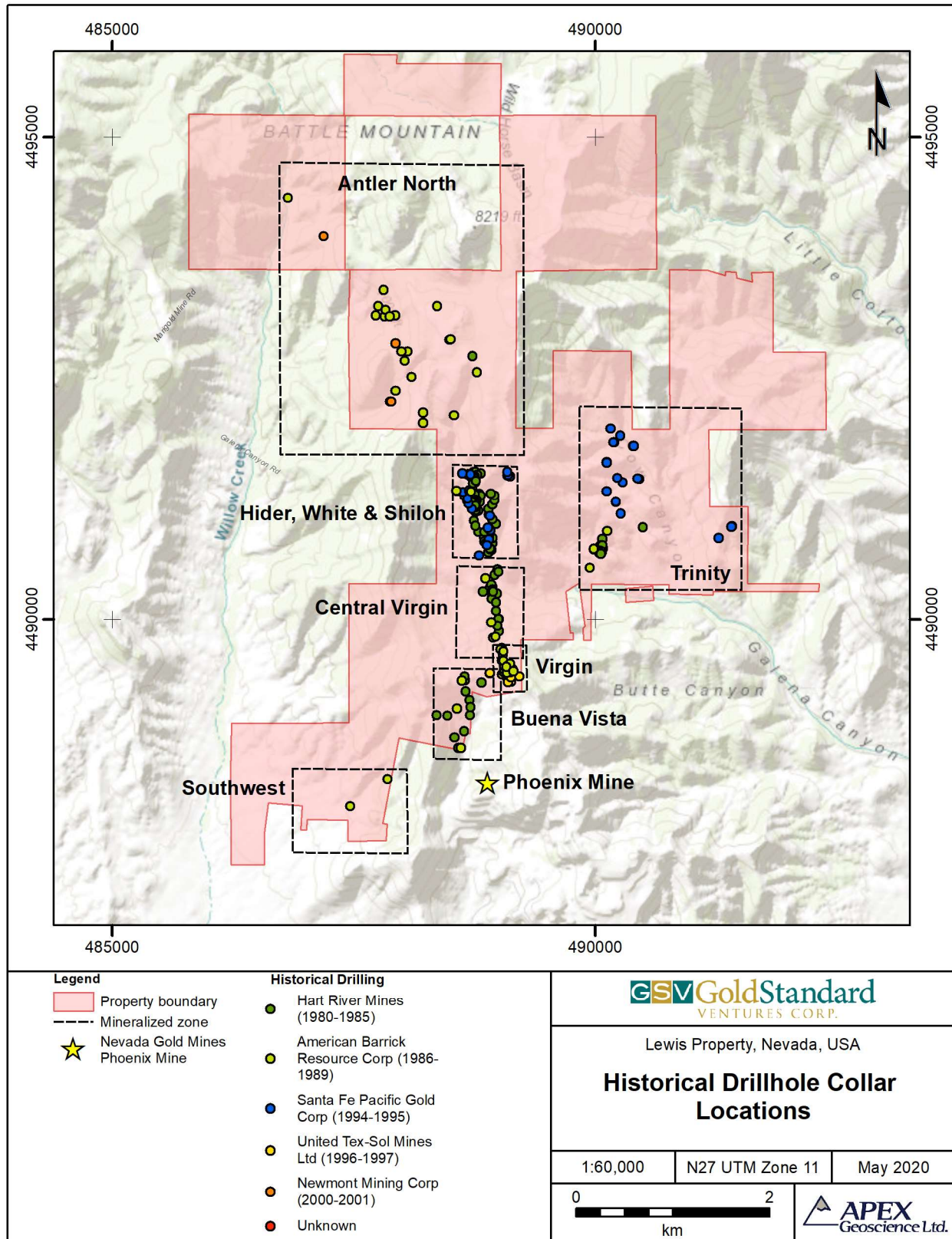
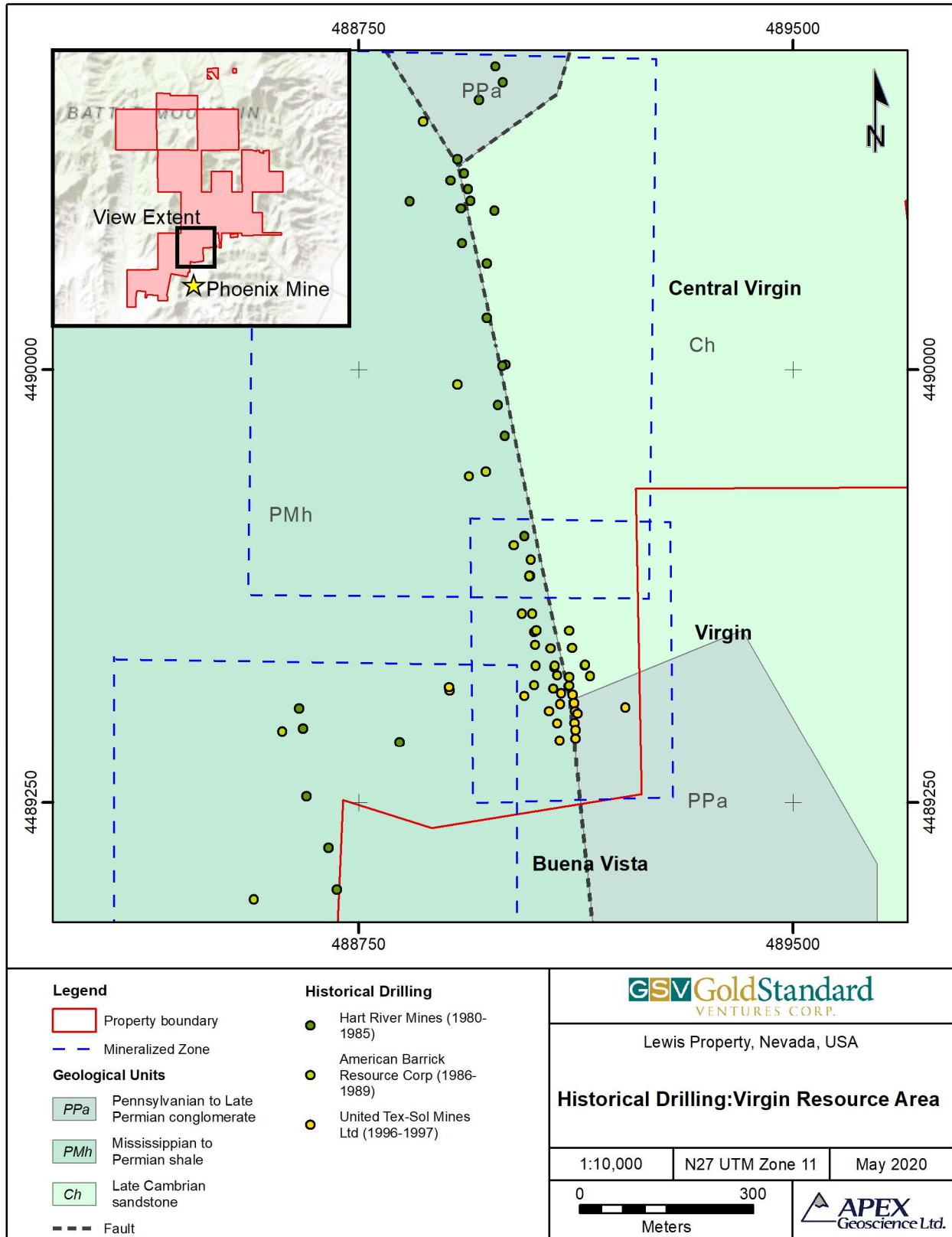


Figure 6.2. Historical drill collar locations at the Virgin deposit.



**Table 6.2. Lewis Property historical drill summary by target area.**

Target	No. Holes	Series	Total m	Total ft
<b>Southwest Deep</b>	<b>9</b>	<b>FWL</b>	<b>5,619</b>	<b>18,435</b>
<b>Meagher</b>	5	BVD	748	2,454
<b>Buena Vista</b>	15	BVD	1,695	5,562
	1	FWL	183	600
<b>South</b>	8	FWL	1,729	5,673
<b>Total</b>	<b>36</b>		<b>4,355</b>	<b>14,289</b>
<b>Virgin</b>	29	BVD	1,510	4,955
	31	FWL	5,308	17,414
	16	UTX	3,753	12,315
	3	GPX	556	1,825
<b>Total</b>	<b>248</b>		<b>11,127</b>	<b>36,509</b>
<b>Hider</b>	87	BVD	3,011	9,880
	2	FWL	276	905
	17	DAN	2,308	7,570
<b>White and Shiloh</b>	26	BVD	1,465	4,808
<b>Total</b>	<b>132</b>		<b>7,060</b>	<b>23,163</b>
<b>Antler Peak</b>	20	FWL	4,417	14,491
	4	AWE	1,863	6,113
<b>Total</b>	<b>24</b>		<b>6,280</b>	<b>20,604</b>
<b>Willow</b>	<b>2</b>	<b>BVD/FWL</b>	<b>171</b>	<b>560</b>
<b>Trinity</b>	16	BVD	766	2,512
	5	FWL	640	2,100
	20	DAN	3,322	10,900
<b>Total</b>	<b>41</b>		<b>4,728</b>	<b>15,512</b>
<b>Grand total</b>	<b>492</b>		<b>39,341</b>	<b>129,072</b>

### 6.2.1 Hart River Mines 1980 to 1985

Modern exploration on the Lewis Property began in 1980, when Hart River Mines optioned the Property from F.W. Lewis Inc. Exploration was managed by L. J. Maki and Associates, a Utah consulting firm, managed exploration. The company evaluated

shallow portions of the major north-trending mineralized fault zones including the Meagher, Buena Vista, Virgin, Hider, White and Shiloh and Trinity targets. Exploration drilling conducted from 1980 to 1985 totalled 30,556 ft (9,313.5 m) in 178 drillholes. This included 23,524 ft (7,170 m) of downhole hammer drilling in 100 holes, 4,800 ft (1,463 m) of air-track drilling in 65 holes and 2,232 ft (680 m) of core drilling (Mako, 1988). Select intercepts from the Hart River Mines drilling programs are listed in Table 6.3.

**Table 6.3. Select historical drill intercepts from Hart River Mines drill programs at the Lewis Property.**

Drillhole Number	Target Area	Length	Gold	Silver
BVD-9	Buena Vista	40 ft (12 m)	0.063 opt (2.1 g/t)	1.2 opt (41 g/t)
DDH-6	Buena Vista	40 ft (12 m)	0.037 opt (1.2 g/t)	0.5 opt (17 g/t)
BVD-2B	Buena Vista	35 ft (10.5 m)	0.026 opt (0.9 g/t)	0.4 opt (13 g/t)
BVD-10	Buena Vista	20 ft (6 m)	0.016 opt (0.5 g/t)	1.1 opt (37 g/t)
BVD-12	Meagher	35 ft (10.5 m)	0.025 opt (0.8 g/t)	0.4 opt (13 g/t)
BVD-27	Hider	20 ft (6 m)	0.047 opt (1.6 g/t)	11.3 opt (387 g/t)
BVD-30	Hider	35 ft (10.5 m)	0.042 opt (1.4 g/t)	7.8 opt (267 g/t)
BVD-74	White and Shiloh	10 ft (3 m)	0.05 opt (1.7 g/t)	0.1 opt (3.4 g/t)
BVD-34	Virgin	30 ft (9 m)	0.025 opt (0.85 g/t)	10.7 opt (366 g/t)
BVD-3B	Virgin	95 ft (29 m)	0.021 opt (0.7 g/t)	2.2 opt (75 g/t)

### 6.2.2 American Barrick Resource Corp. 1986 to 1989

American Barrick Resource Corp. (Barrick) optioned the Lewis Property from F.W. Lewis Inc. from 1986 to 1989. The field program covered the previously explored Virgin, Buena Vista, South, Hider and Trinity targets as well as the newly defined Antler Peak and Southwest targets (Mako, 1988). Barrick conducted geological mapping, soil and rock geochemistry, geophysics (magnetics and Induced Polarization [IP]) and photogrammetry on portions of the Property. Geochemistry outlined various north-trending mineralized structures and resulted in the discovery of the Antler Peak area. Barrick, along with joint venture partner Homestake Mines, used magnetic surveys to define a magnetic pyrrhotite-mineralized skarn zone around the Copper Canyon intrusion and aid in targeting deep drilling to test the buried skarn model. Induced Polarization surveys were used to target mineralized portions of various fault structures.

Barrick completed 59,793 ft (18,225 m) of drilling in 78 holes at the Lewis Property from 1986 to 1987. In 1986, Barrick completed (28,038 ft) 8,546 m of drilling in 49 drillholes, 32 of which were drilled on the Virgin Fault. The Virgin Fault was primarily drill tested within the small 800 ft x 250 ft (244 m x 76 m) rectangular Silver Dream claim

area at the south Property boundary. Selected drill intercepts from the historical Barrick drill programs at the Virgin target area are shown in Table 6.4.

**Table 6.4. Selected historical drill intercepts from the Barrick drill program at the Virgin target area (modified from Atkinson, 2014).**

Drillhole Number	Section	Interval m (ft)	Length m (ft)	Gold g/t (opt)
FWL-36	29800N	99.1 – 102.1 (325 – 335)	3.0 (10)	4.6 (0.13)
FWL-37	29400N	15.2 – 27.4 (50 – 90)	12.2 (40)	6.6 (0.19)
FWL-45	29350N	41.2 – 48.8 (135 – 160)	7.6 (25)	4.6 (0.13)
FWL-31	29275N	67.1 – 77.7 (220 – 255)	10.6 (35)	3.5 (0.10)
		132.6 – 141.8 (435 – 465)	9.2 (30)	1.9 (0.055)
FWL-34	29275N	70.1 – 76.2 (230 – 250)	6.1 (20)	7.8 (0.22)
		99.1 – 122.0 (325 – 400)	22.9 (75)	3.6 (0.10)
FWL-39	29275N	15.2 – 27.4 (50 – 90)	12.2 (40)	6.6 (0.19)
FWL-44	29250N	187.5 – 193.6 (615 – 635)	6.1 (20)	10.0 (0.29)
FWL-11	29250N incl.	61.0 – 128.1 (200 – 420)	67.1 (220)	7.9 (0.23)
		83.8 – 100.6 (275 – 330)	16.8 (55)	16.5 (0.47)
FWL-49	29250N	42.7 – 45.7 (140 – 150)	3.0 (10)	9.0 (0.26)
FWL-47	29150N	88.4 – 103.7 (290 – 340)	15.3 (50)	6.5 (0.19)
		201.2 – 205.8 (660 – 675)	4.6(15)	7.1 (0.20)
FWL-43	29150N incl.	111.3 – 149.4 (365 – 490)	41.1 (135)	8.9 (0.25)
		143.3 – 149.4 (470 – 490)	6.1 (20)	46.4 (1.34)

Barrick also completed drilling at Buena Vista South and Trinity prospect areas. At the Buena Vista South area, located west across the valley from the Virgin Fault, FWL-12 intersected 1.4 opt (48 g/t) gold, across 5 ft (1.5 m) and 0.04 opt (1.4 g/t) gold, across 85 ft (26 m). Hole FWL-14 intersected 0.026 opt (0.9 g/t) gold, across 15 ft (4.5 m) and 0.022 opt (0.75 g/t) gold, across 20 ft (6 m). Barrick drilled five holes at the Trinity target, FWL-3 intersected 10 ft (3 m) of 0.036 opt (1.2 g/t) gold, hole FWL-4 intersected 20 ft (6 m) of 0.032 opt (1.1 g/t) gold, and FWL-17 intersected 15 ft (4.5 m) of 0.048 opt (1.6 g/t) gold.

In 1987, Barrick's exploration focus changed to the newly discovered Antler Peak geophysical and geochemical target and the deep skarn potential of the Southwest area. The Southwest target deep skarn drilling was successful in intersecting mineralization at greater than 2,500 ft (800 m), including 0.173 opt (5.9 g/t) gold across 55 ft (16.5 m) in FWL-30, 0.129 opt (4.4 g/t) gold across 20 ft (6 m) in FWL-30B and 0.110 opt (3.8 g/t) gold across 25 ft (7.6 m) in FWL-30C. FWL-16 intersected 10 ft (3 m) of 0.052 opt (1.8 g/t) gold while testing an IP anomaly. The drilling intersected anomalous precious metal values in the Pumpnickel Formation however did not completely explain the extensive geophysical-geochemical anomaly and associated



jasperoids. Pyritic shales intersected in several of the drillholes are interpreted to be responsible for the geophysical IP anomalies.

Homestake Mining Company (Homestake) formed a joint venture with Barrick in 1988. Work completed in 1988 to 1989 included geological mapping and a data review. The studies by Homestake concluded that the Virgin area mineralization was a fault-related skarn replacement type rather than a vein and that the mineralization increased in intensity to the south and with depth. They also concluded that drilling had not tested all three splays of the Virgin fault zone and that the northern extension of the fault zone remained to be tested in many areas.

Homestake and Barrick were unsuccessful in negotiating a joint venture with BMG to expand the area. The Property was subsequently returned to F.W. Lewis Inc. who rehabilitated the underground workings at the Buena Vista and Blossom mines from 1990 to 1993.

It should be noted that Barrick has subsequently become part of the ownership (along with Newmont Corporation) of the Phoenix Mine in 2019, through its 61.5% interest in the Nevada Gold Mines Corporation, who presently own 100% of the mine.

### **6.2.3 Santa Fe Pacific Gold Corp. 1994 to 1995**

Santa Fe Pacific Gold Corp. (Santa Fe) optioned the Lewis Property from F.W. Lewis Inc. in 1994 to 1995. They completed geological mapping, soil sampling and drilled 37 holes totaling 18,470 ft (5,630 m). The geochemical survey outlined several structural trends including the Virgin and Trinity fault systems.

In 1994, 17 (DAN-21 to DAN-37) reverse circulation (RC) drillholes totaling 7,570 ft (2,308 m) were completed on the Virgin Fault near the old White and Shiloh, and Hider adits. Five areas were tested, and drill intercepts included 5 ft (1.5 m) of 0.118 opt (4.0 g/t) gold in DAN-24 and 5 ft (1.5 m) of 0.057 opt (1.9 g/t) gold in DAN-28.

In 1995, 20 RC holes (DAN-38 to DAN-57) totaling 10,900 ft (3,322 m) tested the Trinity Fault area (Green, 1994; Green and Hill, 1995). Several of the drillholes intersected anomalous gold-silver values: DAN-46 intersected 0.101 opt (3.5 g/t) gold across 20 ft (6 m) and DAN-57 intersected 0.07 opt (2.4 g/t) gold across 45 ft (13.7 m). Santa Fe dropped the option.

During 1996, F. W. Lewis Inc. successfully negotiated a new boundary agreement with BMG extending the Property boundary 700 ft (213 m) to the south toward the Fortitude Pit.

### **6.2.4 Nighthawk North Exploration Inc. and United Tex-Sol Mines Ltd. 1996 to 1997**

Nighthawk North Exploration Inc. and United Tex-Sol Mines Ltd. (United Tex-Sol) optioned the Lewis Property from F.W. Lewis Inc. from 1996 to 1997. They completed

mapping and surface sampling as well as 12,315 ft (3,753 m) of RC drilling in 16 holes. The drilling tested approximately 330 ft (100 m) of new strike length within the extension of the Virgin exploration target to a depth of 800 ft (244 m). Mineralization was intersected in 12 of the 16 drillholes. Selected drill results are shown in Table 6.5. Nighthawk North Exploration Inc. and United Tex-Sol Mines Ltd. did not renew their option.

**Table 6.5. Selected historical drill intercepts from the Nighthawk North Exploration Inc. and United Tex-Sol Mines Ltd. drill program at the Virgin target area (modified from Atkinson, 2014).**

Drillhole Number	Section	Interval m (ft)	Length m (ft)	Gold g/t (opt)
UTX-16	29100N	147.9 – 163.2 (485 – 535)	15.3 (50)	4.6 (0.13)
UTX-1	29100N incl.	125.0 – 243.9 (410 – 800)	118.9 (390)	2.8 (0.08)
		150.9 – 178.4 (495 – 585)	27.5 (90)	8.6 (0.25)
UTX-2	29050N incl.	132.6 – 199.7 (435 – 655)	67.1 (220)	1.6 (0.04)
		149.4 – 175.3 (490 – 575)	25.9 (85)	2.7 (0.078)
UTX-3	29000N	150.9 – 158.5 (495 – 520)	7.6 (25)	2.5 (0.07)
		196.6 – 211.9 (645 – 695)	15.3 (50)	2.5 (0.07)
UTX-14	29000N	61.0 – 73.2 (200 – 240)	12.2 (40)	1.7 (0.049)
UTX-6	28850N	99.1 – 115.9 (325 – 380)	16.8 (55)	3.2 (0.09)

### 6.2.5 Golden Phoenix Mines 1998 to 1999

Golden Phoenix Mines (Golden Phoenix) optioned the Lewis Property in 1998 to 1999 and drilled 1,825 ft (556 m) in three holes that twinned previous Barrick holes (FWL-39, 43, 47) within the Virgin exploration target. One hole intersected the same grade and thickness, one intersected low-grade mineralization, and one intersected higher-grade mineralization. Additionally, Golden Phoenix helped patent the Silver Dream #6 claim.

### 6.2.6 Newmont Mining Corp. 2000 to 2001

Newmont Mining Corp. (Newmont), the largest landholder and gold producer in the district, optioned the northern Antler Peak portion of the property in 2000 to 2001 and completed deep RC drilling totaling 6,113 ft (1,863 m) in four holes. Two targets were drilled: (1) Antler stratigraphy and bounding fault, and (2) Howard’s Pass fault zone. Newmont dropped the option in 2001 about the same time Newmont acquired the Battle Mountain Gold Company, which included the ownership of the Phoenix Project, which was in permitting moving towards construction and production in 2004-2005.

## 7 Geological Setting and Mineralization

### 7.1 Regional Geology

The Lewis Property is in the Battle Mountain district, situated in the northern part of the Battle Mountain-Eureka Trend, a northwest trending belt of precious metal deposits with current reserves and past production exceeding 50 million oz Au (Holley et al., 2015).

The regional geologic setting and geologic history of north-central Nevada, including the Battle Mountain-Eureka Trend, has been well documented by several authors. The following section on the geologic and tectonic history of north-central Nevada has been summarized from reports by Breit et al. (2015), Cline et al. (2005), Fithian (2015), Leonardson (2015), Price (2010) and Wallace et al. (2004).

### 7.2 Geologic and Tectonic History of North-Central Nevada

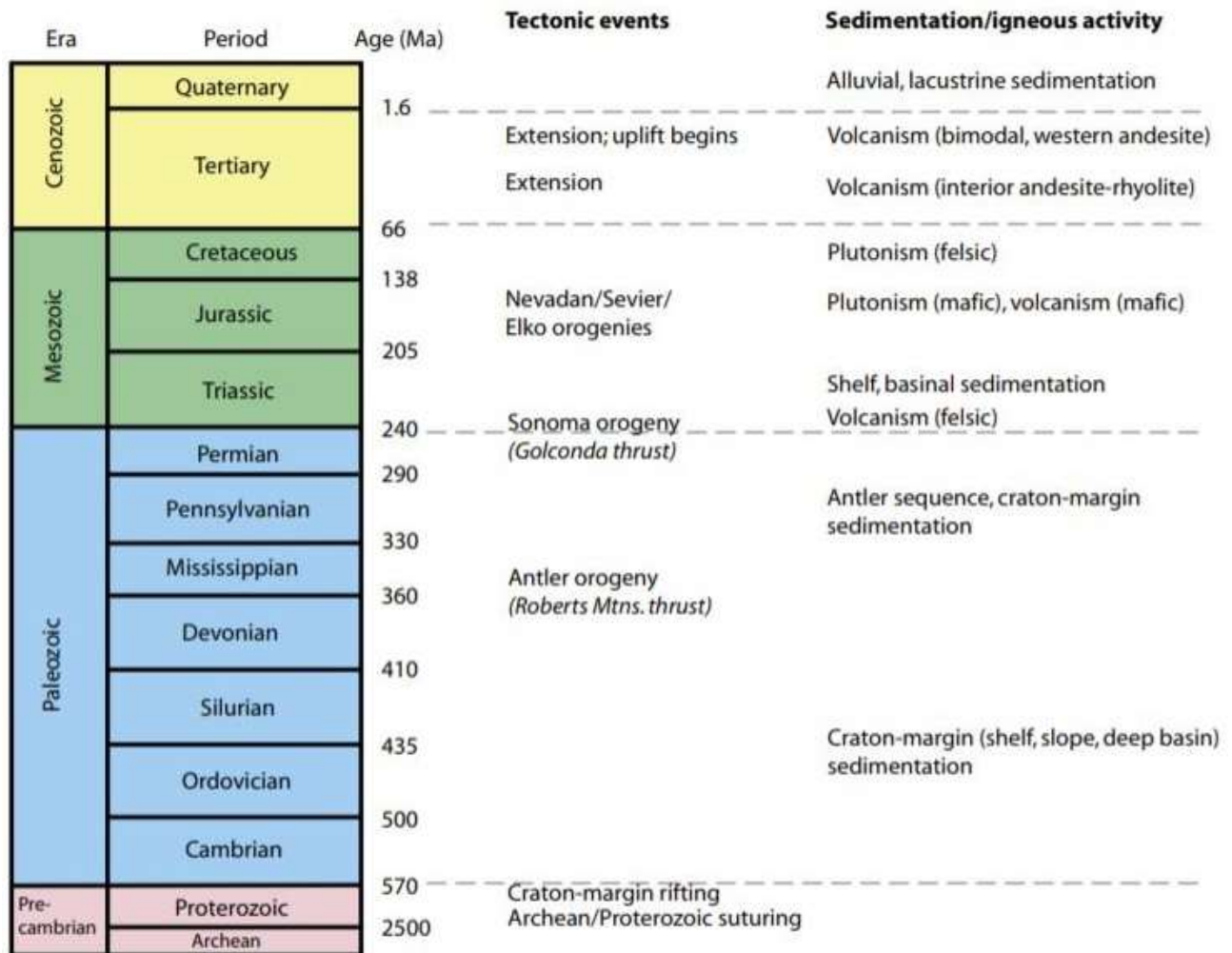
Paleoproterozoic terranes were accreted to the Wyoming craton during the assembly of Laurentia (Cline et al., 2005) forming several northwest and north-striking faults. The Wyoming craton became the future Cheyenne Lineament, the most significant structural suture zone and mobile belt in Nevada (Leonardson, 2015) and host to all of the most significant Carlin-type deposits. Rifting in the Meso- and Neoproterozoic resulted in a westward thinning margin of continental crust as Laurentia separated from an adjoining crustal block (Cline et al., 2005). A westward-thickening sedimentary sequence was deposited in the early Paleozoic along the edge of the North American craton as indicated by Stewart, 1972 and Poole et al. 1992 (cited in Cline et al., 2005; Wallace et al., 2004).

The Roberts Mountain Thrust Formed during the Devonian to early Mississippian Antler orogeny with marine rocks thrust over the miogeoclinal shelf sequence (as indicated by Roberts et al. 1958 and cited in Leonardson, 2015; Cline et al., 2005; Wallace et al., 2004). The Antler orogeny continued into the Permian. Silberling and Roberts (1962) indicate that the Golconda allochthon was emplaced during the Sonoma orogeny in the late Permian to early Triassic with deep Paleozoic sediments thrust eastward over rocks of the Roberts Mountains thrust (as cited in Wallace et al., 2004). During the Antler and Sonoma orogenies, deformation regressed to the west as major thrust plates were emplaced in the region of prior thrusting (Price, 2010). An east-dipping subduction zone formed along the western margin of North America by the Middle Triassic (Cline et al., 2005).

Regarding magmatism, north-central Nevada magmatism commenced in the Middle Jurassic with back-arc volcanic-plutonic complexes and lamprophyre dikes. Lipman et al. (1972) and Hickey et al. (2003a and b) indicate that the magmatism shifted into Colorado at approximately 65 Ma and did not resume in Nevada until approximately 42 Ma (Cline et al., 2005).

A timeline of the major geologic and stratigraphic events in northern Nevada is shown in Figure 7.1 and Figure 7.2.

**Figure 7.1. Timeline of geologic events of northern Nevada (modified from Wallace et al., 2004).**



### 7.3 Regional Geology of Battle Mountain Mining District

The regional geology of the Battle Mountain Mining District comprises three Paleozoic rock assemblages, summarized from Yennamani (2010), as follows:

- 1) Ordovician, Silurian and Devonian aged siliceous sequence of the Roberts Mountains allochthons.
- 2) Mississippian, Pennsylvanian and Permian Havallah sequence of the Golconda allochthon.
- 3) Penn-Permian Antler sequence of the Antler orogeny.

These assemblages have been intruded by Cretaceous and Triassic intrusive rocks and are overlain by Cenozoic aged volcanics and alluvial deposits. The regional geology of the Property area is shown in Figure 7.3 and the regional stratigraphy is shown in Figure 7.4.

**Figure 7.2. Tectonostratigraphic events of northern Nevada during the: A) Devonian, B) Devonian to Mississippian, C) Mississippian to Permian, and D) Permian to Triassic (from Fithian, 2015).**

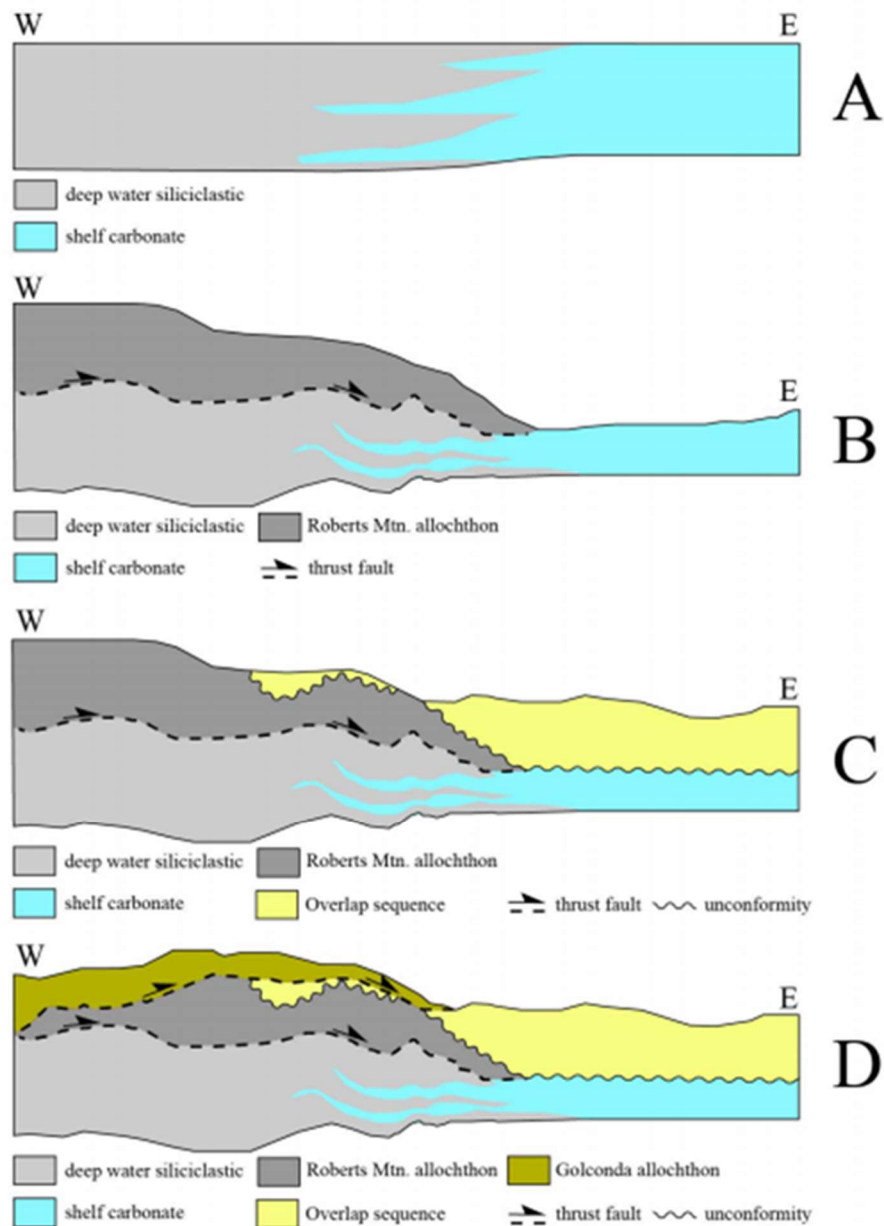


Figure 7.3. Regional geology of the Lewis Property.

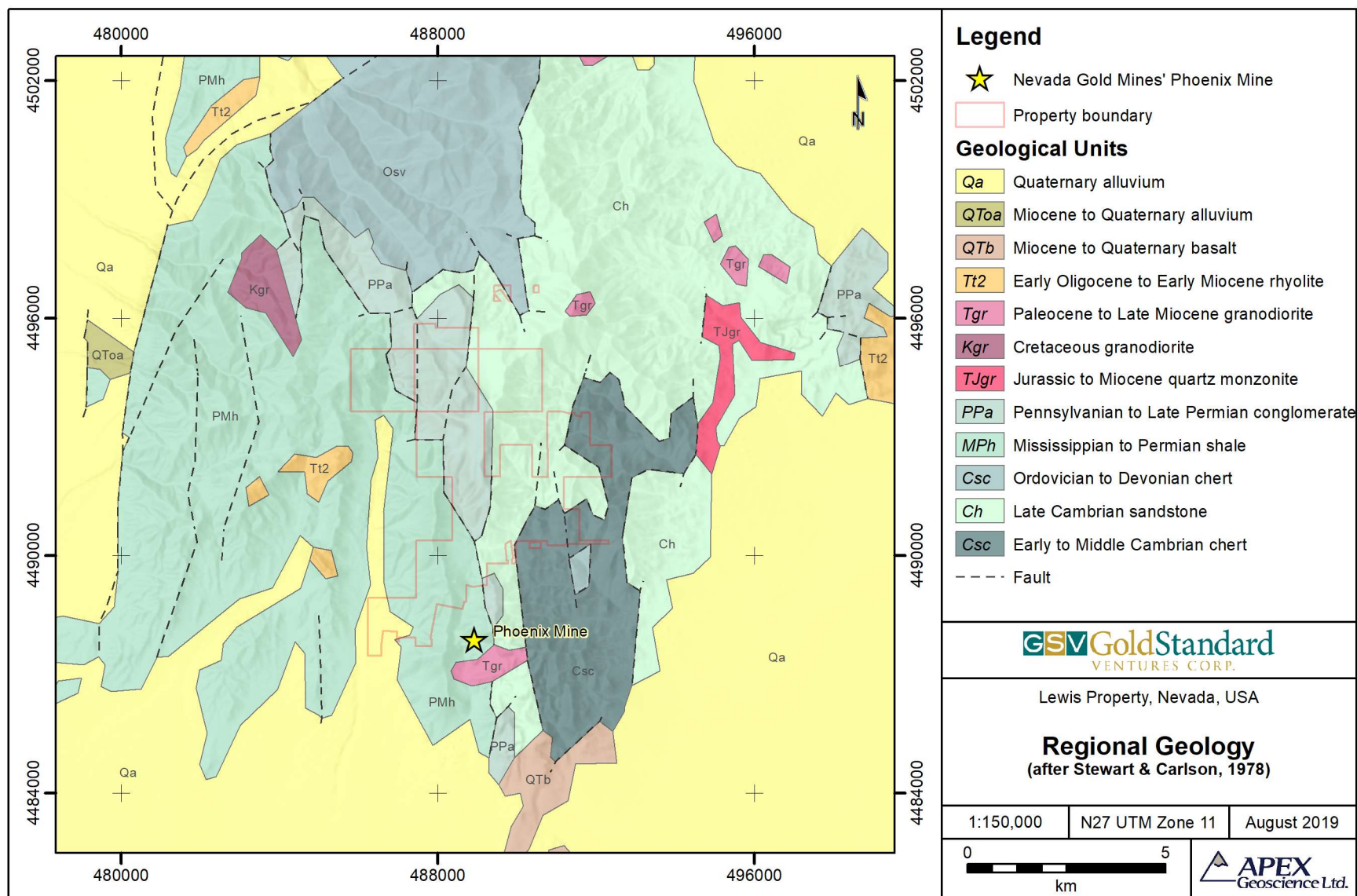
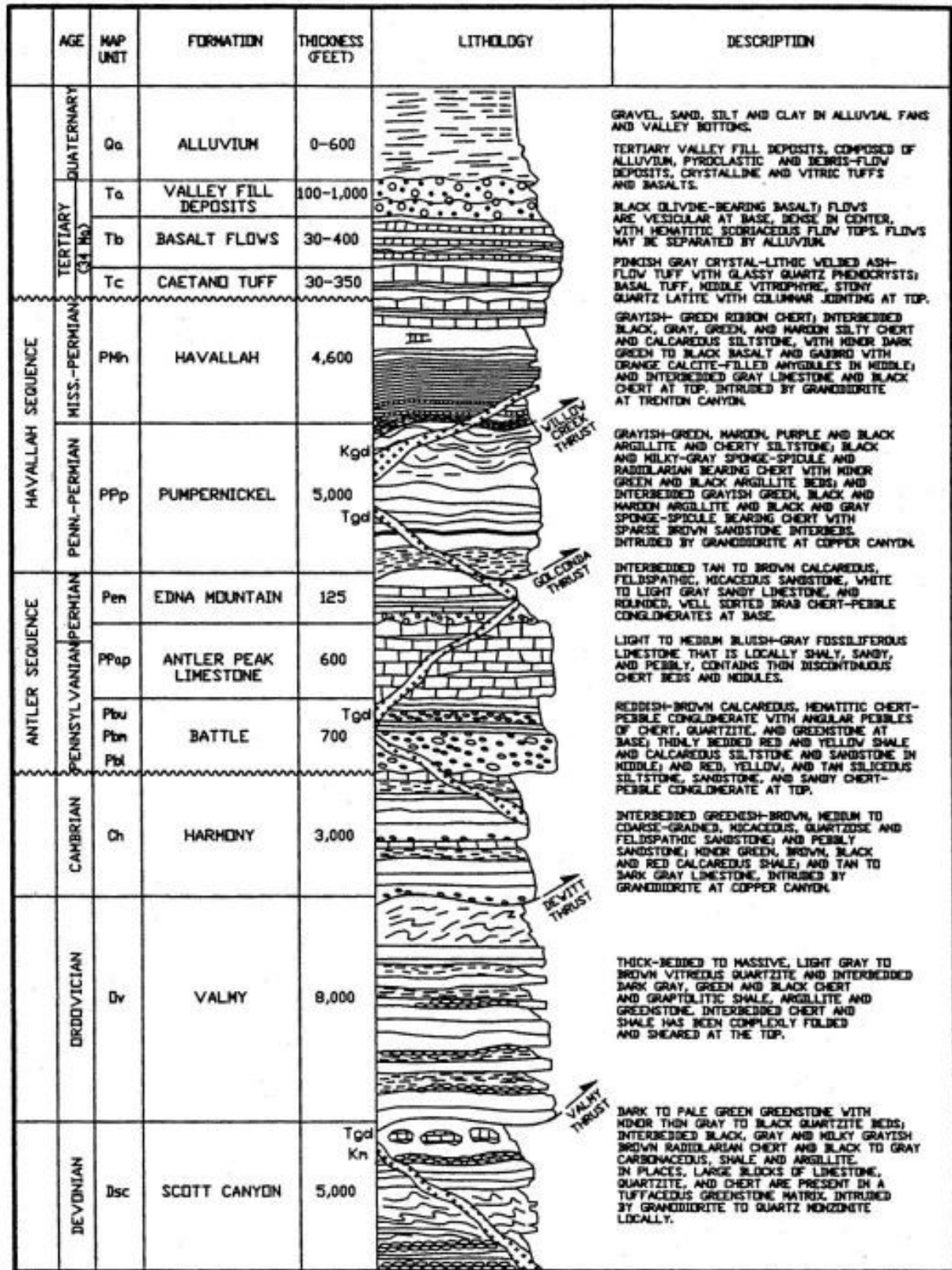


Figure 7.4. Regional stratigraphy of the Lewis Property area (from Atkinson, 2014).



## 7.4 Local Geology

The following discussion on the local geology, Property geology and mineralization of the Lewis Project has been summarized or adapted from previous Technical Reports written by McArthur and Turnbull (2002), McArthur (2003), McArthur and Turnbull (2004), McArthur (2007) and Atkinson (2014).

The Devonian aged Scott Canyon Formation and Early to Middle Ordovician aged Valmy Formation form the base of the stratigraphic column in the Property area (Figure 7.4). Both units are exposed in the eastern portion of the Lewis claim block below the Dewitt Thrust, a major imbricate thrust or splay fault of the Roberts Mountain sole thrust (Figure 7.5). The Scott Canyon Formation predominately consists of greenstone with minor thin quartzite beds, interbedded with chert and carbonaceous shale and argillite with an estimated thickness of 5,000 ft (1,524 m). The Scott Canyon Formation is intruded locally by granodiorite to quartz monzonite. The Valmy Formation is characterized by thick to massive quartzite and interbedded chert and graptolitic shale, argillite and greenstone with an estimated thickness of 8,000 ft (2,438 m). The Scott Canyon and Valmy Formations are separated by the Valmy Thrust and are interpreted to have been deposited in deep water adjacent to the Cordilleran platform.

The Late Cambrian aged Harmony Formation overlies the Valmy Formation, separated by the Dewitt Thrust. This is the oldest unit on the Property comprising interbedded medium to coarse grained sandstone with minor calcareous shale and limestone. The Harmony Formation is approximately 3,000 ft (914 m) thick and outcrops in the central portion of the Lewis Property.

The Harmony Formation is unconformably overlain by the Pennsylvanian-Permian aged Antler Sequence. The Antler Sequence outcrops along the Virgin Fault and Golconda Thrust in the central portion of the Property and includes three formations: the basal Battle Formation, the middle Antler Peak Formation and the upper Edna Mountain Formation. The Battle Formation comprises a sequence of hematitic chert-pebble conglomerate and thinly bedded shale, siltstone and sandstone with an estimated thickness of 730 ft (222 m). The Antler Peak Formation comprises predominately fossiliferous limestone with thin interbeds of chert and subordinate sandy and shale layers, with an estimated thickness of 200 to 1700 ft (60 to 518 m). The Permian aged Edna Mountain Formation forms the top of the sequence and comprises sandstone and sandy limestone with a base of conglomerate. The thickness of the Edna Mountain Formation is estimated to be 100 to 200 ft (30 to 60 m).

The Pennsylvanian to Permian aged Havallah Sequence overlies the Antler Sequence. The Golconda sole thrust transported the Havallah Sequence from the west. The Havallah Sequence is the basal equivalent of the Antler Sequence and includes two formations: the Pumpnickel Formation and the Havallah Formation. The Pennsylvanian to Permian aged Pumpnickel Formation comprises siltstone, chert and argillite with intrusions of granodiorite, with an estimated thickness of 5,000 ft (1,524 m). The Pumpnickel Formation is separated from the upper Havallah Formation by the



Willow Creek Thrust, a major splay of the Golconda Thrust. The Havallah Formation is estimated to be 4,600 ft (1,402 m) in thickness, comprising chert, siltstone, basalt, gabbro and interbedded limestone and chert.

The Tertiary aged Caetano Tuff Formation caps some of the higher ridges on the Property. This formation ranges in thickness from 30 to 350 ft (9 to 106 m). The Caetano Tuff is coeval and comagmatic with the granodiorite intrusions.

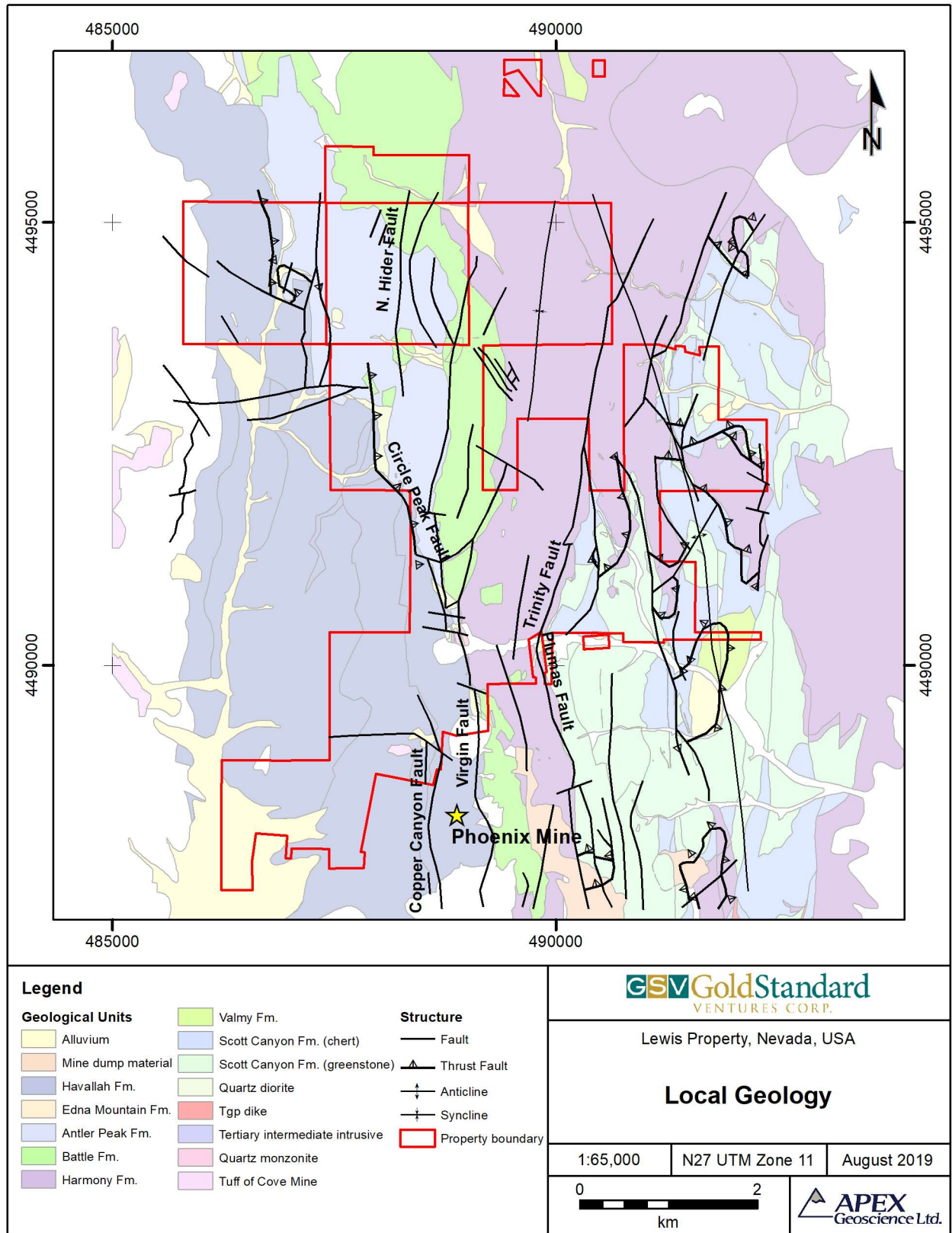
Several episodes of folding and thrusting are recorded throughout the Paleozoic, further complicated by Mesozoic and Tertiary deformation indicated by northwest, north and northeast trending structures throughout the Property (Figure 7.5). Northwest-trending structures are commonly granodiorite dikes and broad folds. North-trending normal faults are common throughout the district. Some are pre-Eocene in age, probably reflecting the onset of Basin and Range extensional tectonics. Locally they controlled the emplacement of intrusives and hydrothermal fluids, for example the Virgin Fault at Copper Canyon (Theodore and Blake, 1975). Other north-trending faults, such as the range fronts, show Quaternary movement. Northeast-trending normal faults may represent the Midas trend in this part of north-central Nevada.

## 7.5 Property Geology

The Virgin Resource area is located in the southeastern portion of the Lewis Property adjacent to the northern Phoenix mine boundary within the block of five contiguous patented claims. It is situated at the divide between Galena Canyon to the north and Copper Canyon to the south. The boundary (with NGM's Phoenix Mine) is covered by variable thickness of dump material from the Phoenix Mine. Historical geological mapping and drilling indicate that the Virgin Resource area is divided into various structural blocks by at least three northerly trending splays/strands of the Virgin Structural Zone ("VSZ") and at least two northwest trending cross structures which appear to step the westerly splay of the VSZ to the northwest along its northerly strike.

The easterly trending, possibly east-dipping, splay of the VSZ juxtaposes gently west-dipping (20° - 30°) Cambrian Harmony Formation sandstone and shale which are unconformably overlain by lower Battle conglomerate and sandstone. The Battle conglomerate contains cobbles of the underlying Harmony sandstone to the east juxtaposed against upper Battle oxidized orange-yellow chert pebble conglomerate to the west. Along trend to the north, the eastern VSZ splay appears to swing to the northeast, or it intersects a northeast trending cross structure and may connect with the nearby Plumas-Trinity Structural Zone ("PTSZ"). Several northeast trending mineralized structures cut across the eastern block as evidenced by numerous old pits and trenches. The eastern block has been intruded by a weakly altered equigranular diorite-granodiorite which crops out at the south end of the ridge east of the historical drill area.

Figure 7.5. Local geology of the Lewis Project.



The central VSZ fault splays step down the oxidized upper Battle conglomerate to the west in several north trending fault slices. North of 28,500N where a northwest trending cross structure intersects the central block the oxidized upper Battle conglomerate is underlain at depth by hematitic middle Battle sandstone and shale. South of the cross structure, hematitic middle Battle sandstone and shale are exposed at surface. Several intrusive dikes have been intersected in historical drilling adjacent to the cross structure. The central splays of the VSZ appear to die out to the north after crossing into the Harmony Formation sandstone or may bifurcate and join the eastern and western VSZ splays. To the south the VSZ is covered by a stockpile of low grade material at the boundary of the Lewis Property and the NGM Phoenix Pit. The northern area which is underlain by upper Battle conglomerate, contains many old pits and trenches. These old workings expose predominantly north-trending, oxidized sulphide mineralization but at the northern limit both northeast and northwest mineralization trends become common. The central block has been tested by wide-spaced historical drilling at various orientations and multiple narrow intervals of precious metal mineralization were intersected.

The north-trending, west-dipping western splay of the VSZ generally juxtaposes upper Battle conglomerate or Harmony Formation sandstone to the west against Havallah Formation siltstones, part of the Golconda Thrust sequence, to the west. The western VSZ fault splay is crosscut by at least two northwest trending structures which step the northerly trending VSZ to the northwest along its northerly strike.

The southern area has Havallah Formation siltstones, part of the Golconda Thrust sequence, to the east adjacent to middle Battle hematitic sandstone and shale to the west across the VSZ. Havallah siltstones are underlain by the shallow southwest dipping Antler sequence comprising Edna Mountain, Antler Peak and Battle Formations. Numerous aphanitic volcanic and fine-grained equigranular granodiorite dikes intrude the block especially near the northwest cross structure.

North of the northwest-trending cross structure at 29,100N this fault block has Edna Mountain conglomerate to the west of the VSZ west splay adjacent to upper Battle conglomerate to the east. The Golconda Thrust sequence of Havallah siltstones are found 300 ft (100 m) to the west and may indicate a similar offset along the northwest cross structure. Drilling along the VSZ structure in 2006 intersected intervals of elevated silver values hosted in the Edna Mountain near the Antler contact and deeper gold mineralization in the upper Battle conglomerate near the Antler contact. Deeper drilling down-dip to the west in 2007 and 2008 intersected multiple narrow intervals of mineralization to a depth of approximately 850 ft (260 m). Drilling also indicates that the structural intersection between the VSZ and the northwest cross structure is well mineralized, and a high-grade shoot appears to plunge to the northwest as indicated in historical drillholes MAD-05, 43, 81 and 83.

North of the second northwest cross structure at 29,700N is the northern most area drilled. It has the Golconda Thrust sequence Havallah Formation siltstones to the west of the VSZ and Harmony Formation sandstone to the east. Limited historical drilling

indicates the Antler sequence underlies the Havallah siltstone and is the host to mineralization of variable thickness within the VSZ west splay. Drill testing of the second northwest-trending cross structure and the VSZ indicates that the structural intersection is mineralized and may host another higher-grade shoot.

Only a few historical Barrick holes have tested the western VSZ splay further north towards the old town site of Galena and beyond, where the western VSZ appears to bifurcate forming the Hider and the White and Shiloh splays.

The northern portion of the drill area is mainly underlain by shallow west-dipping, weakly-altered Harmony Formation sandstone. It is possible that this block of Harmony may be horsted up along younger east-west faults. These faults may also control the emplacement of a subvolcanic intrusive into the Havallah sequence west of the VSZ at Galena.

Drilling within the Virgin Zone of the Lewis Property has intersected variable thicknesses of stratigraphy. Initially, the Havallah Assemblage unit (Ppp) (0-110 ft [0-33 m]) comprises grey-green and dark-grey to black siltstone, shale, calcareous shale and mudstone.

Passing through the shallow west-dipping Golconda thrust, is the underlying autochthonous Antler Sequence comprised of the Edna Mountain, Antler Peak, and Battle Formations. Antler sediments intersected in drilling on the Virgin area are much thinner than the section exposed on Antler Peak to the north. Both the Antler Peak limestones and the underlying Battle conglomerate-sandstone are much thicker sequences.

The Edna Mountain Formation (30-80 ft [10-25 m]) contains an upper distinctive black carbonaceous and calcareous shale (Pes) and a lower black chert pebble/granule conglomerate/grit unit (Pem) with an orange, light-grey, calcareous sandy matrix interbedded with lesser limestone, sandstone, siltstone, and shale. These units are locally oxidized and contain limonite and goethite. High-angle structures and orange iron-carbonate veins cut the stratigraphy and are cross-cut by late-stage calcite veins.

The underlying Antler Peak Formation unit (Pap) (50-250 ft [18-80 m]) is comprised of light-grey to brown-grey limestone and buff dolomite with lesser sandstone. The stratigraphy is locally cross-cut by oxidized goethitic and limonitic structures with local replacement, mantos and skarn development accompanied by traces of base metals. These are locally cross-cut by iron-carbonate veins and late-stage calcite veins. Battle Formation intersected in drilling is comprised of an upper unit Pbu (50-250 ft [15-80 m]) that is a yellow to orange-brown, oxidized, limonitic and goethitic, grey chert pebble conglomerate with lesser interbeds of sandstone. Local variations include a possible uppermost quartzite pebble conglomerate and a lower unit (Pbm) of reddish, oxidized, hematitic shale, sandstone, and chert pebble conglomerate. The units, especially the sandstones when altered and strongly oxidized, may be misidentified as altered, fine-grain diorite to granodiorite dikes or sandstones of the upper Harmony Formation.

Unconformably below the Antler Sequence is the Harmony Formation (Ch). It comprises fining-upward sequences of micaceous sandstone, siltstone, and shale. The upper portion contains variably-coloured, reduced, pyritic, green and grey clastics interbedded with oxidized, hematitic, red, maroon, or purple clastic varieties. These overlie a lower, dark-grey to grey-green section containing coarse, quartz sandstone locally intruded by mafic volcanics.

The Harmony Formation is commonly strongly oxidized at and near the upper unconformable contact, frequently making the contact itself obscure. Below the zone of oxidation, the sandstone-shale sequences are only locally oxidized along structures. The rocks commonly contain detrital mica and are moderately altered (chlorite-quartz-carbonate±epidote). They are locally cross-cut by structures and quartz-carbonate±sericite-base metal veins. These veins are in turn cross-cut by late-stage calcite veins.

Dikes intruded along structural weaknesses, cross-cut all rock types intersected in drilling. The dikes vary from aphanitic volcanic types to more coarse-grained intrusive types. The intrusives are diorite to granodiorite in composition and may be equigranular or have porphyritic feldspars. When oxidized, the intrusives may be misidentified as feldspathic sandstones. Local alteration generally comprises chlorite-epidote-silica-carbonate-pyrite within the clastic rocks. Calcareous host rocks adjacent to some of the larger dikes may contain skarn or hornfels. Late-stage calcite veins may be present.

## 7.6 Mineralization

Sulphide minerals on the Lewis Property include pyrite, galena, sphalerite, chalcopyrite, bornite, stibnite, arsenopyrite, pyrrhotite, and tetrahedrite, which occur within a calcite-quartz gangue. Known mineralization is confined to the sedimentary wall rocks and structural conduits and is controlled by the reactive (calcareous) lithologies, unconformities, structures, and proximity to intrusions.

Precious metal mineralization encountered in historical drilling at the southern Virgin area is classified as either bedding replacement (stratigraphically controlled) or structurally controlled. Stratigraphically controlled refers to flat lying or gently dipping tabular shaped mineral zones that are dominantly controlled by carbonate-rich stratigraphy and formational contacts. Stratigraphically controlled mineralization is most commonly found adjacent to mineralized faults. In detail, the location of most precious metal mineralization indicates a strong structural control by the major and/or related secondary structures.

Fault-vein mineralization has been found associated with major north-northwest trending west dipping structural zones that cross both the Phoenix Mine and the Lewis Property: far western Independence, west Copper Canyon, the central Virgin and the eastern Plumas-Trinity structural zones. These structures each expose a different structural and/or stratigraphic level, with the youngest stratigraphy found to the west.

Many of the mineralized areas on the Lewis Property are associated with these four structural zones. The Virgin-Hider-White and Shiloh, Buena Vista-Meagher, Southern-Filippini, Plumas-Trinity and Antler Peak areas have been the focus of most of the historical exploration and are still considered to have the greatest exploration potential. These mineralized zones are shown on Figure 7.6 and discussed in the following subsections.

### **7.6.1 Virgin-Hider-White and Shiloh Area**

The centrally located Virgin structural zone is the most prominent northwest trending west dipping structure on the Lewis Property. The structure extends for at least 8 km (5 miles) from the Phoenix Mine north to Antler Peak. It juxtaposes Havallah clastics on the east with Antler sequence carbonates and clastics. At the Phoenix Mine site, the Virgin structure controls the emplacement of the Virgin dike and is the conduit for later hydrothermal fluids.

The southern portion of the Virgin structure has been the focus of considerable exploration near the mine but the area to the north along strike is relatively unexplored. This structural target offers both shallow and deep exploration potential. Additionally, a deep porphyry-skarn is postulated to occur north of the Fortitude deposit based on mineral zoning found in drillholes (Kotlyar et al., 1998). This deep exploration target may possibly occur under the low grade dump located along the claim boundary between the Lewis Property and the Phoenix Property and it remains untested.

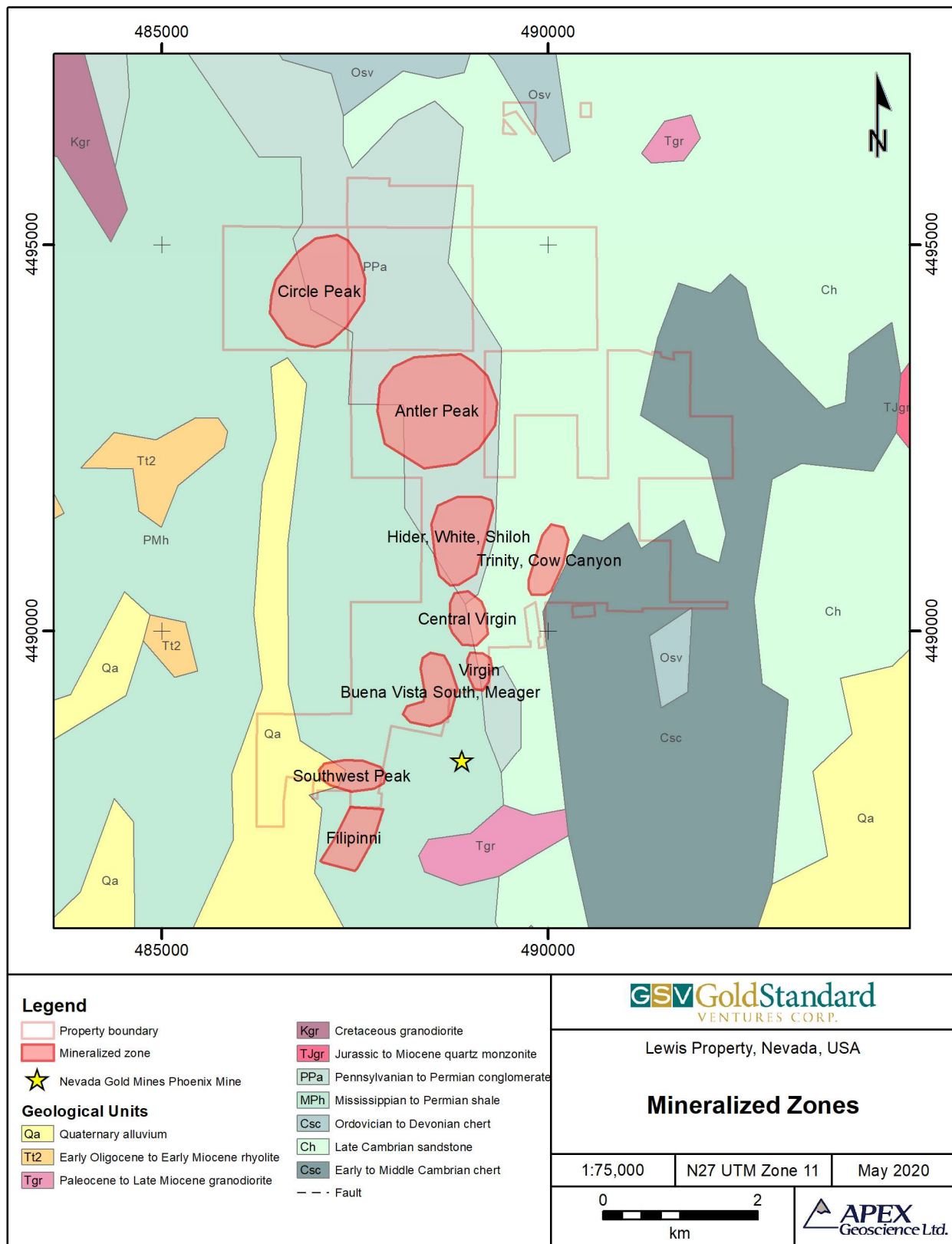
Mineralization intersected in the South Virgin area in historical drilling is both stratigraphically and structurally controlled similar to mineralization at the Upper Fortitude Deposit. Mineralization has been intersected in an area approximately 2,450 ft (750 m) north-south by 1,150 ft (350 m) east-west and to a depth of 790 ft (240 m) and remains open in all directions. Silver values have been noted to increase to the north along the structural trend. There appears to be a local zone of gold enrichment at or near the level of surface oxidation; enrichment may be caused by fluctuating water table levels near and along structural breaks.

Historical drilling by Barrick along the central portion of the Virgin structure intersected only spotty gold values but many of the drillholes appear to be drilled either too close to the structure or in the footwall. Additional drilling would be required to evaluate this 2,300 ft (700 m) long section of the structural zone north beyond the area drilled by Madison.

To the north along the structure, several east-west cross faults disrupt the Virgin structure at Galena and appear to control the location of a Tertiary volcanic vent/dike, perhaps related to the overlying Tertiary Caetano Tuff unit.

North of the Galena Townsite, the VSZ forming two splays the western Hider and eastern White and Shiloh. The Hider Mine was developed along a small portion of the 4,500 ft (1,500 m) western Hider fault splay. The west-dipping fault is up to 275 ft (84 m)

Figure 7.6. Mineralized zones at the Lewis Property.



wide and separates Battle clastics from Antler carbonates. The easterly White and Shiloh fault splay has 3,280 ft (1,000 m) of development in three mines (White, Shiloh and Battle).

Historical drill results from along the central and northern extension of the Virgin Structural Zone have been erratic, most often with narrow intervals and/or low gold values. Silver values do increase northward along the structure. The Hider Fault splay appears to have higher and more consistent drill results than the White and Shiloh Fault splay.

### **7.6.2 Buena Vista Meagher area**

The Copper Canyon – Sonderman fault zone is one of the prominent bounding structures on the west side of the Phoenix Mine. The north-northwest trending, west dipping faults juxtapose various stratigraphic levels of the Havallah stratigraphy and step down the Antler contact by 1,640 – 3,280 ft (500 to 1,000 m) in the west. Several sub parallel structural targets occur both within the Meagher and Buena Vista third order splay faults and the main Copper Canyon – Sonderman master faults. Structurally controlled mineralization may occur in both the hanging wall Havallah sequence (shallow target) and the underlying Antler sediments (deep target). The Buena Vista area is located 1,640 ft (500 m) southwest of the Virgin area.

Historical Phoenix Joint Venture drill results from the northwest trending Buena Vista fault splay were positive in five of seven holes drilled (MAD-64 to -70) along a 2,300 ft (700 m) strike extent, including 25 ft (7.6 m) at 0.158 opt (5.4 g/t) gold in MAD-64 (north end) and 35 ft (10.6 m) @ 0.082 opt (2.8 g/t) gold in MAD-70 (south end). The adjacent north trending, west dipping Meagher structure is located 600 ft (200 m) southwest of the Buena Vista structure. Hart River Mine's drillhole BVD-12 is the closest drillhole and it intersected 35 ft (10.5 m) at 0.023 opt (0.8 g/t gold) but appears not to have tested the structure.

### **7.6.3 Southern and Filippini Area**

Previous work by Barrick and Homestake identified a deep skarn target similar to the Lower Fortitude deposit, perhaps its faulted extension, located at depth along the southern Lewis claim boundary 660 to 1,640 ft (200 to 500 m) south of the Buena Vista area. The Au-Ag-Cu mineralized skarn is apparently developed within portions of the Antler sequence carbonates north of, and adjacent to, the two exposed intrusive bodies at the Phoenix and Independence Mines.

The historical drilling indicates that most of the deep skarn potential appears to be on Barrick/Newmont or Filippini ground at depth (625-3,280 ft [800-1000 m] deep). A geophysical data review should investigate the deep porphyry-skarn potential, as a historical ground magnetic survey appears to be able to outline the possible edge of the magnetic skarn zone. A structural target may also exist along north trending, west dipping Copper Canyon and Independence structures and be hosted in either the upper Havallah sequence and/or in the underlying Antler stratigraphy.



This style of precious metal mineralization has been intersected in a number of deep drillholes drilled along the western down-faulted margins of the Phoenix Mine. The northern portion is partially covered by the Lewis and Filippini Properties. The central part is underlain in part by the Wilson-Independence intrusive and Surprise Mine while the southern portion is mostly covered by the Independence property belonging to General Metals. Newmont controls all of the remaining area of interest.

Deep historical drilling by Barrick and Homestake (1986-88) on the Lewis Property intersected deep skarn Au-Ag-Cu mineralization in drillholes FWL-30, -30b, -30c and -69 at 2,500 to 2,700 ft (762 to 823 m) below surface (Table 7.1). Immediately to the south on the adjacent Filippini Property deep drilling by Barrick and Homestake (1987-88) also intersected deep skarn Au-Ag-Cu mineralization in drillholes F-1 to F-6 at 2,500 to 3,000 ft (762 to 914 m) below surface. The deep skarn mineralization drilled in the Lewis-Filippini area occurs on the west and northwest side of the Copper Canyon and Wilson-Independence intrusives. South of the intrusives, deep drilling on the General Metals Corp. Independence Property by Noranda (1984-87) and later by Great Basin Gold (1997) intersected deep skarn Au-Ag-Cu mineralization at 2,600 to 3,300 ft (792 to 1,005 m) below surface.

Based on these deep drill intercepts potential exists to expand the size of the mineralized areas and discover an economic deposit which could be accessed from the ultimate Phoenix pit bottom and mined by underground methods.

It is important to note that the Filippini, Copper Canyon and Wilson-Independence Properties are located adjacent to the Lewis Property. The reader is cautioned that the author has not verified the information regarding the mineralization on these properties and the information provided above is not necessarily indicative to the mineralization on the Property that is the subject of this Technical Report.

**Table 7.1. Southern Lewis deep drill results (historic).**

Hole	From m (ft)	To m (ft)	Width m (ft)	Grade Au * g/t (opt)	Cu
FWL-30	763.5 (2505)	775.7 (2545)	12.2 (40)	0.86 (0.025)	0.35%
	775.7 (2545)	792.4 (2600)	16.7 (55)	5.86 (0.171)	0.20%
FWL-30B	781.8 (2565)	787.9 (2585)	6.1 (20)	4.4 (0.129)	
FWL-30C	780.3 (2560)	783.3 (2570)	3 (10)	6.99 (0.204)	
	806.2 (2645)	813.7 (2670)	7.5 (25)	3.77 (0.110)	
FWL-69	704.1 (2310)	705.6 (2315)	1.5 (5)	3.9 (0.115)	

Structurally controlled precious metal veins are another mineralization type commonly encountered within the Property and similar to material previously mined at the adjacent Phoenix, Iron Canyon and Independence mines. The structurally controlled precious metal mineralization is of potential interest as it is commonly near surface, can be developed by open pit, and is usually oxidized to depths of 330 ft (100 m) and

therefore amenable to heap leach extraction. However, the mineralized bodies tend to be relatively small in size (100,000- 250,000 oz Au) compared to a Fortitude-type skarn or deep porphyry target.

#### **7.6.4 Plumas-Humbug-Trinity-Cow Canyon Area**

The major Plumas-Trinity structural zone is located on the eastern portion of the Lewis Property. The north-northwest trending, west dipping fault juxtaposes hanging wall Cambrian Harmony sandstones, part of the Dewit Thrust plate, with footwall Devonian Scott Canyon cherts, part of the underlying Roberts Mountain Thrust plate.

The eastern Plumas-Trinity structural zone and splay faults offer both shallow and deep structural targets similar to the historical Plumas, Humbug, Trinity and Cow Canyon mines as well as a potential deep skarn/intrusive target as indicated by government airborne magnetic surveys. Airborne magnetics define a circular feature with elevated magnetic response centered on the Plumas patented claims. The magnetic feature may be either an intrusive or magnetic skarn mineralization at depth. The Plumas mine area is now covered by part of the Phoenix Mine waste rock dump. There is an environmental concern regarding the patented Plumas Mine claims due to acid drainage from the old workings and dumps. Clean-up would most likely be necessary, including removal of the acid generating dump material. Permitting and bonding, required prior to any work, could be complicated.

North along the structure from the Plumas area on the Lewis Property is the Trinity Mine where the fault zone is 148 ft (45 m) wide and separates Harmony sandstone from Scott Canyon shale and chert. Historical drilling by Hart River and Barrick identified an area with anomalous gold results south of the mine. In addition, a 1.5 mile (3 km) MMI geochemical anomaly along the Trinity Fault was outlined by a soil sampling program in 2004.

North of the Trinity Mine area is Cow Canyon area where Santa Fe Pacific drilled twenty holes (DAN 38-58) along the north trending, west dipping structural zone. Several historical drillholes had anomalous results including 20 ft (6 m) at 0.102 opt (3.5 g/t) gold in DAN-46 and 45 ft (13.7 m) at 0.07 opt (2.4 g/t) gold in DAN-57.

#### **7.6.5 Willow Creek, Antler and Circle Peak Area**

The northern Antler-Circle Peak area is located at the intersection of both east-west and north-south structural trends and displays a complex structural pattern with numerous intersecting splay faults, some with geochemical (As-Sb-Hg) leakage anomalies. This may indicate the potential for a deep structural target. To date drill results have been disappointing and fail to explain an extensive geophysical-geochemical anomaly defined by Barrick. Previous Barrick drilling indicates that at least some of the geophysical responses may be the result of formational sources like pyritic shales.

## 7.7 Alteration

Alteration in the region affects both the intrusive and surrounding wallrock. The granodiorite intrusive is affected by potassic alteration comprising potassium feldspar, secondary biotite, and quartz. The wallrock alteration is zoned around the intrusive with the contact metamorphic aureole extending outward from the intrusive for at least 2 miles (3 km). Roberts and Arnold (1965) subdivided the contact alteration aureole into an inner zone of intense metamorphism and chemical change, an intermediate zone of recrystallization and an outer zone of induration. Two stages of calc-silicate alteration are recorded within Antler Peak limestone host rocks. The first alteration is caused by a contact thermal event related to intrusive emplacement. It produced a garnet-dominant mineral assemblage in the surrounding limestone host rock. This was followed by hydrothermal alteration, the late stages of which resulted in retrograde metamorphism and partial replacement of the earlier garnet dominant mineral assemblage by actinolite-tremolite-chlorite-quartz-carbonate mineral assemblage. This hydrothermal alteration was associated with the introduction of sulphide mineralization (Roberts, 1964; Theodore and Blake, 1975). Hydrothermal alteration and sulphide mineralization are documented by Homestake Mining Corp. to occur along the Virgin structural zone as far north as Galena Canyon.

## 8 Deposit Types

The mineral deposit types of interest within the Lewis Property are high-grade, structurally-controlled fault/veins and low-grade disseminated precious metals skarns and replacements associated with north-trending structures and Tertiary intrusives. The following section outlining the deposit type potential of the Lewis Project has been modified from the most recent Technical Report on the Lewis Property written by Atkinson (2014).

Two key types of mineralization have been intersected in historical drilling on the Lewis Property. Deep skarn mineralization, similar to material mined from the historical Lower Fortitude mine, has been intersected in drilling in the southwestern Filippini area and is also interpreted to occur under the boundary sulphide dump at the southern Virgin area. Lower grade replacement and higher grade structurally controlled epithermal mineralization, similar to the Upper Fortitude, have been intersected in drilling at the southern Virgin area adjacent to the Virgin Fault.

There are a number of publications that discuss disseminated and vein gold-silver mineralization as distal expressions of Eocene intrusive and volcanic centres in North Central Nevada (Johnson and Ressel, 2004). Examples of these types of mineralization are documented at the nearby McCoy-Cove Mine (Johnson, 2001) and on the adjacent Copper Canyon-Fortitude-Phoenix Mine owned by Nevada Gold Mines and include the Upper and Lower Fortitude, Nex, Tomboy-Minnie, Reona, and West and East deposits (Kennedy, 2000).

In all cases, three factors were important in localizing the deposition of mineralization: 1) proximity to an intrusive, 2) fault zones that acted as a conduit for magma and mineralizing fluids, and 3) chemically reactive host rocks. The intersection of regional northwest and north-trending structural zones may have influenced the location of magmatism and associated hydrothermal activity.

The similarity of geological information between the Phoenix Mine deposits and the adjoining Lewis Property is in no way indicative that a mineral deposit of similar size or grade does occur or will be found on the Lewis Property. Precious metal mineralization found on and adjacent to the Lewis Property occurs as several different types: skarn, epithermal style replacement and vein.

### 8.1 Skarn Type Mineralization

Gold skarns are defined as skarn deposits in which gold is the primary or dominant economic metal. They can form during regional or contact metamorphism through a variety of metasomatic processes and can be hosted by any type of rock (but are most commonly found associated with rocks containing at least some limestone). Gold skarn deposits primarily form in orogenic belts at destructive plate margins and are often linked with syn- to late-arc intrusions which were emplaced into calcareous sequences in arc or back-arc environments (Ray, 1998). Skarn deposits are often stratigraphically and structurally controlled, and mineralization is often preferentially developed along sill-dike intersections, sill-fault contacts, bedding-fault intersections, fold axes and along faults. Fluids may also migrate along permeable horizons to form mantos. In the pyroxene-rich and epidote-rich types (such as Fortuna), gold is commonly deposited in the more distal portions of the alteration envelopes.

Depending on the mineralogy and garnet-pyroxene chemistry of the prograde exoskarn and ore, gold skarns can be separated into reduced and oxidized types. Fortuna represents a typical oxidized gold skarn characterized by high garnet/pyroxene and pyrite/pyrrhotite ratios, and by the presence of diopsidic pyroxene, pyrite, magnetite and hematite. These bodies tend to form more proximal to the intrusions than those in the reduced gold skarns (Ray, 1988).

Gold skarn deposits tend to have a spatial and temporal association with copper porphyry provinces, but due to a poor correlation between gold and copper in some gold skarns, the economic potential of a prospect can be overlooked if copper sulphide-rich outcrops are preferentially sampled over those of other sulphide bearing or sulphide-poor assemblages. Gold is often found in close association with bismuth or gold tellurides and is commonly found as small blebs (<40 microns) that form within or on sulphide grains (Ray, 1998).

Deposit form is variable and may form irregular lenses and veins and/or tabular or stratiform/stratabound ore bodies with lengths ranging up to many hundreds of metres. They can range from 0.4 to 13 Mt and have average grades from 0.058 to 0.438 opt (2 to 15 g/t) gold. Large deposits representative of this type include the Fortitude Mine at

Battle Mountain in Nevada (10.3 Mt grading 0.201 opt [6.9 g/t] gold), McCoy Creek Mine in Lander County in Nevada (13.2 Mt grading 0.044 opt [1.5 g/t ] gold) and the Crown Jewel deposit of Buckhorn Mountain Washington.

This type of mineralization has been intersected in deep historical drilling on the southwestern Lewis Property and the adjacent Filippini claims.

## 8.2 Epithermal Gold – Silver (+/- Base Metals) Mineralization

Epithermal deposits are products of volcanism-related hydrothermal activity at shallow depths and low temperatures, with deposition occurring within 0.6 miles (1 km) of the surface at a temperature of 50° to 200°C (Guilbert and Park, 1986). Deposits can occur in several forms including siliceous vein fillings, irregular branching fissures, stockworks, breccia pipes and disseminations. Epithermal gold-silver deposits are hosted in a variety of lithological and structural settings. In general, the epithermal deposits are most common in accreted, back-arc volcanic and sedimentary terranes and are spatially associated with felsic volcanism and extensional tectonic settings within these terranes.

The deposits exist in almost all rock types contained within allochthonous terranes, including felsic to mafic extrusive and intrusive volcanic rocks, clastic to chemical sedimentary rocks, and some metamorphic equivalents. On a regional scale there is little stratigraphic control on epithermal gold-silver deposits. On a district or deposit scale there can be a stratabound control due to a favourable structural and/or chemical environment represented by a particular rock unit. The bonanza vein hosted deposits commonly occur in pyroclastic volcanic rocks. Disseminated Carlin type deposits are commonly hosted in impure carbonate rocks.

Rocks that host epithermal gold-silver deposits range from Early Jurassic to at least Late Tertiary. The gold-silver deposits span the same age interval, but they are epigenetic and are thought to have formed either during or shortly after deposition or intrusion of the associated or host volcanic rocks.

## 9 Exploration

### 9.1 Madison Minerals and Phoenix Joint Venture (2002-2008)

Madison Minerals initiated exploration on the Property in 2002 with 9 RC drillholes. The purpose of these holes was to duplicate several historical drillholes originally drilled by UTX and Barrick across portions of the VSZ. Follow-up exploration in 2003 included ground geophysical IP-MT (induced polarization-magnetotellurics) and magnetic surveys, geological mapping, soil orientation sampling, core, and RC drilling. An initial phase of drilling included 4 deep core and RC holes that tested the anomaly identified by the geophysical survey. A later phase of infill and step-out RC drilling tested the upper portion of the VSZ to the north and south. In 2004, Madison Minerals conducted a preliminary soil geochemical survey near the Plumas-Trinity structure that identified a geochemical anomaly. No further exploration was conducted in that area.

In 2006, Madison Minerals with NRC as a joint venture partner carried out a 42 hole drilling program that tested targets along a 2,000 ft (610 m) strike length of the VSZ. An additional 7 drillholes tested an 1,800 ft (550 m) north-south strike extension at the Buena Vista Zone. Both the Virgin and Buena Vista drilling was successful in intersecting mineralization at those locations.

In 2007, the Phoenix Joint Venture (Madison Minerals and NRC) completed an IP survey on the southern portion of the Virgin and Buena Vista structural zones. Subsequently, a RC and core drilling program were completed to test targets along the Virgin structural zone and to confirm previous drill results. The drill program successfully extended the mineralization along strike over the Virgin structural zone. The core drilling confirmed the presence of mineralized cross structures in areas of high-grade mineralization.

In 2008, the Phoenix Joint Venture completed a 41 hole program including both core and RC drilling that extended the Virgin mineralization east-west and down dip. Nine short RC holes were completed to test dump material from the Phoenix Mine that was located on the Property. Drill samples were analysed to understand the relationship between gold, silver and base metals. A total of 446 bulk density measurements were collected on core samples to aid with the resource estimation.

### 9.2 Recent GSV exploration (2016 - 2018)

Exploration work completed by Gold Standard at the Lewis Property includes: 1) geophysical surveying; 2) re-logging of historical core and RC chips, 3) geochemical soil sampling, 4) geological mapping. Details of the exploration program are outlined below and provided on the Battle Mountain Gold website:

### **9.2.1 Helicopter-borne magnetic and radiometric survey**

A helicopter-borne magnetic and radiometric survey was flown over the project environs by Precision Geosurveys during June, 2016. The survey covered about 136 km<sup>2</sup> for a total of 1,270 line-km, consisting of east-west oriented flight-lines spaced 100 m apart and north-south tie-lines spaced every 1000 m. The survey was flown at a nearly constant height of 25 meters above the ground. The survey coordinates were captured in WGS 84 and later converted to NAD 27 Zone 11 for the final product for the client. The magnetic results indicate zones of high magnetic intensity over known intrusions. In addition, the data delineate two major east-northeasterly-trending lineaments that coincide locally with the distribution of variably clay-pyrite-altered, Tertiary dikes and fracture zones. These dikes and fracture zones are associated with gold-silver mineralization in the southern part of the Lewis property and in the northern portion of the Fortitude Deposit (part of the Phoenix Mine). One of the magnetic lineaments intersects, and changes trend across, the Buena Vista fault zone. This magnetic-structural intersection lies adjacent to the convergence of the Buena Vista, Meagher, Silver and Theodore fault zones, which should be tested by a diamond drilling program. The processed images of the radiometric results show a good spatial coincidence between gold-silver bearing fault zones and radiometric gradients. This is consistent with the fault juxtaposition of host-rock units that contain varying abundances of radiometric potassium, thorium and uranium.

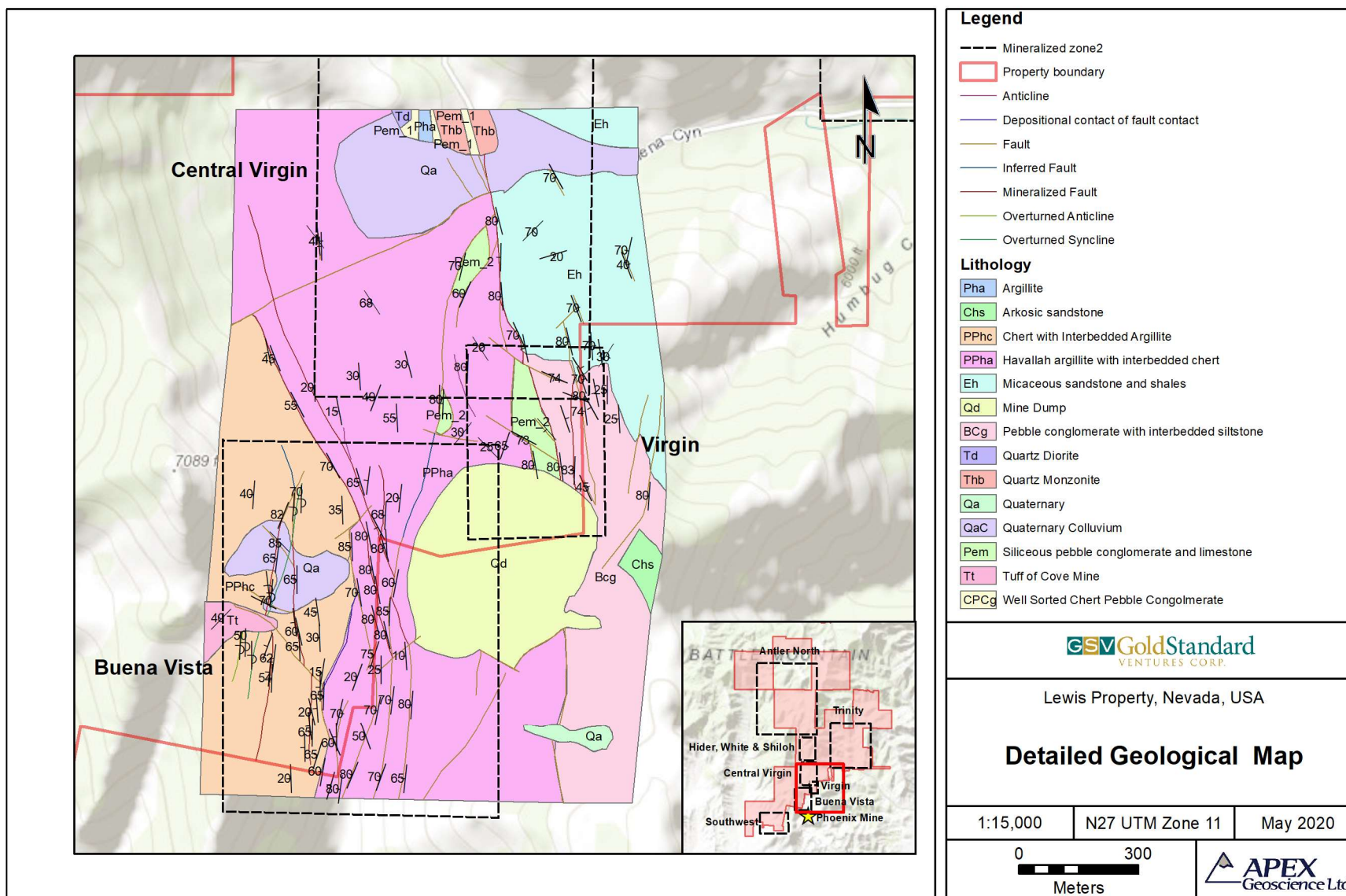
### **9.2.2 Ground gravity survey**

A ground-based gravity survey was completed over the 22.25 km<sup>2</sup> Lewis property in late May, 2016 by Magee Geophysical Services for a total of 289 stations. Processing and imaging of the results indicate that some of the major gold-silver-bearing fault zones coincide with steep gravity gradients. This is likely due to the fault juxtaposition of rock units characterized by contrasting density (specific gravity). Many of the gradients expressed by the gravity results coincide with gradients observed in the magnetic- and radiometric-results and mapped faults. The spatial coincidence of geophysical gradients with known gold-silver-bearing fault zones will assist the Company in targeting large and potentially well-mineralized structural zones for future exploration and drilling. The collection of about 500 more gravity stations was accomplished in early August, 2016, with the aim to improve data resolution and the extent of coverage.

### **9.2.3 Re-logging of Historic core and RC chips**

The re-logging of diamond drill-core and RC chips have continued throughout the program. An additional 13 diamond-core holes were re-logged in late May to July, to bring the project total to 27 core-holes for about 6,500 m. The re-logging of RC chips recommenced in late July, with plans to bring the project total to about 85 holes for > 18,500 m. The primary aims of the re-logging program are to better define geology and mineralization in the drillholes and improve the three-dimensional geological and structural models for the project area, particularly for the Virgin Zone.

Figure 9.1. Detailed geological map of the Virgin resource area and Buena Vista mineralized area.





### **9.2.4 Geochemical soil-sampling**

The grid-soil sampling of portions of the southwestern part of the claim area commenced in August, 2016. The purpose of the survey was to further delineate the surface expression of gold-bearing fault zones using a multi-element geochemical approach. For example, previous drilling by Barrick Gold (1987) in this area yielded 16.7 m at 5.86 g/t Au and 0.2% Cu at a depth of 775.7 m in FWL-30, hosted by skarn in the Antler Limestone that lies beneath the Golconda Thrust. Previous work by the Company indicates that gold-silver-bearing target zones, contained within reactive, Antler Sequence host-rocks beneath the Golconda Thrust, are typically expressed by multi-element anomalies in the Havallah / Pumpnickle Formation at surface. These surface anomalies are characterized by elevated arsenic, bismuth, low-level gold and silver, and other pathfinder elements. The grid soil-survey will cover portions of the 4 km<sup>2</sup> area of interest.

### **9.2.5 Geological Mapping (1:2,000) northeast part of the project**

Geological mapping (1:2,000-scale) and geochemical rock sampling are ongoing in the Lewis Property (Figure 9.1). Recent work has focused on the eastern portion of the claim block, along a northerly-trending, gold-silver-arsenic-bearing structural corridor that extends from the inactive Iron Canyon gold-silver mine in the south through the historical Apex antimony mine to the Antimony King mine in the north. This style of mineralization is associated with northerly-trending, clay-altered Tertiary dikes of similar composition to those that occur in the Fortitude - Phoenix mine area.

## **10 Drilling**

The Lewis Property has been drilled extensively from 1980 to 2018. A total of 490 drillholes have been completed on the Property, totalling 248,661 ft (75,792 m) of drilling. The majority of the historic drill programs have focused on the Virgin mineralized zone, although drilling has been conducted at several other historic targets within the Lewis Property, including Antler North, Buena Vista, Hider, Central Virgin, Virgin, Southwest and Trinity. Of the 490 historic drillholes, 230 were utilized in the drilling database used for the current mineral resource estimation discussed in Section 14. A detail summary of the historical exploration activities can be found in Section 6.

All drillhole collar coordinates are recorded in the UTM NAD 27 (Zone 11) coordinate system. GSV staff first stake collar locations in the field using a hand-held GPS. For angled holes, staff place additional stakes using a Brunton compass that allow the driller to align the drill to the correct azimuth. The driller then sets the inclination of the drill and the geological staff check the orientation immediately prior to drilling. International Directional Services (IDS) of Elko, Nevada measure hole deviation of all drillholes using a gyroscopic down-hole survey. Bigby and Associates of Reno, Nevada professionally surveyed the final drillhole collar location using a differential GPS. Once drilling is

complete, all drillhole collars are marked by wooden lath with the hole name on a wire/aluminum tag placed in the cement collar plug.

Geological staff that are familiar with the Project and the local geology perform geological logging. Geologist first record their data on paper logging forms developed specifically for the Project that Gold Standard geological and/or data entry staff digitize. Details recorded in the geological logs are, but are not limited to, the following: rock percent recovery (for core holes only), lithology, interpreted formation, hydrothermal alteration, oxidation, structures (faults, fractures and folds—relative to the core axis), breccia type, vein type and abundance, sample intervals, and other important geological comments.

### 10.1 Madison Minerals and Phoenix Joint Venture (2002-2008)

Between 2002 and 2008 Madison Minerals and Phoenix Joint Venture completed 176 drillholes totalling 118,228 ft (36,036 m) from 149 RC holes, 27 core holes and 2 core tail holes (RC top and core bottom) (Table 10.1; Figure 10.1). This drilling focused on the Virgin structural zone utilizing both core and RC drilling, along with targets at the Buena Vista zone near the southeast edge of the Property, and the Phoenix Mine dump material found at the Property.

The drilling was predominately oriented at a 90° azimuth with dips ranging from -50 to -90° to intersect the western splay of the Virgin structural zone (Figure 10.2). Several holes were oriented 45° to intersect northwest trending cross faults that step out from the Virgin structural zone. Table 10.1 outlines the footage and drill targets for the 2002-2008 drilling programs and Table 10.2 outlines the significant intercepts from those drill programs.

A detailed discussion of the 2002-2008 Madison and Phoenix Joint Venture drill program is presented in Atkinson (2014).

**Table 10.1. Madison Minerals drillholes (2002-2008)**

Year	No. Drillhole	RC (m)	RC (ft)	Core (m)	Core (ft)	Target
2002	9	1,778.5	5,835	-	-	Virgin Resource Area
2003	24	4,849	15,909	653.2	2,143	Virgin Resource Area
2006	7	1,646	5,400	-	-	Buena Vista South
	42	8,043	26,387	-	-	Virgin Resource Area
2007	44	7,341	24,085	2,304	7,559	Virgin Resource Area
2008	50	5,567	18,264	3,855	12,647	Virgin Resource Area
<b>Total:</b>	<b>176</b>	<b>29,224</b>	<b>95,879</b>	<b>6,812</b>	<b>22,349</b>	

Figure 10.1 Recent drilling completed on the Lewis Property.

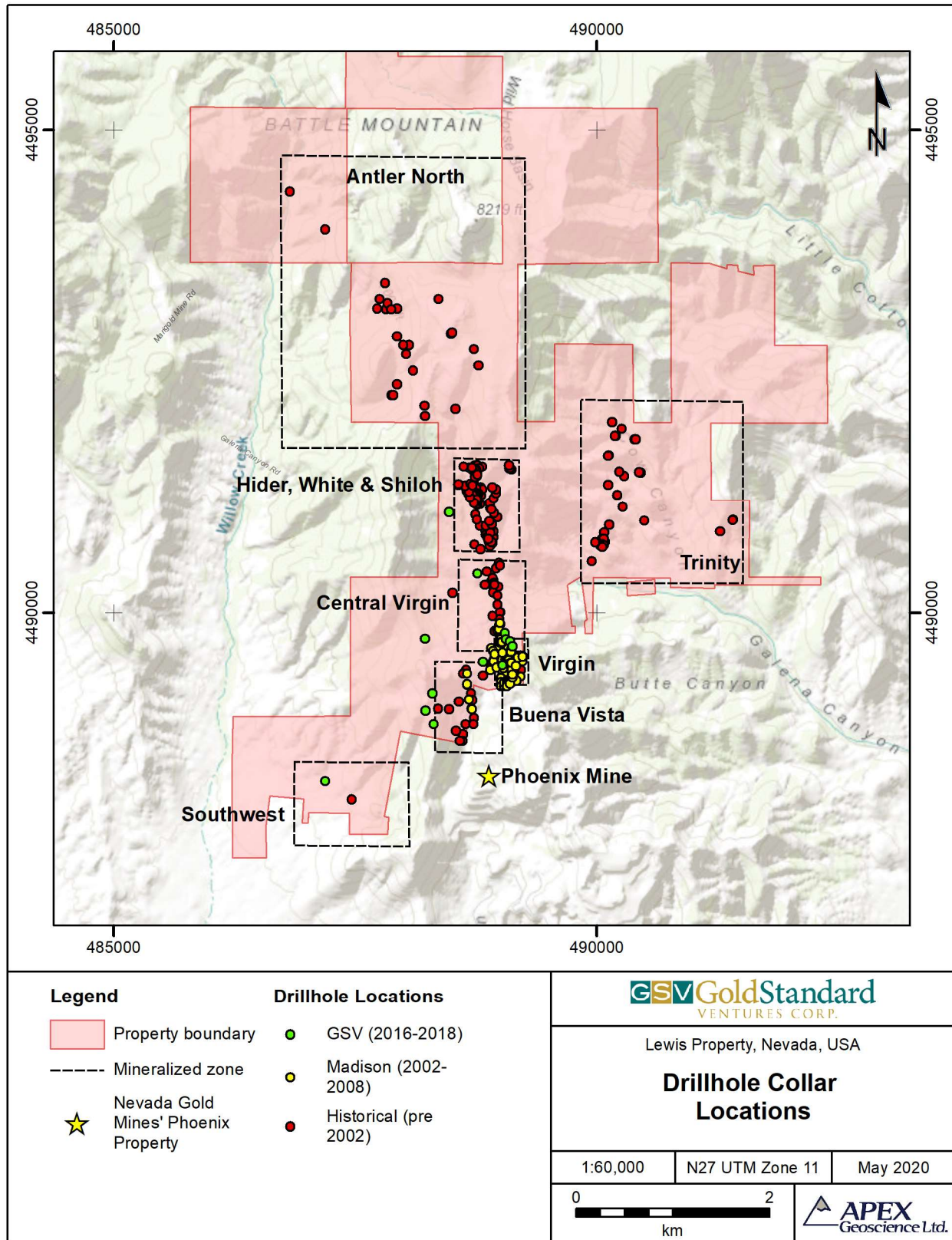
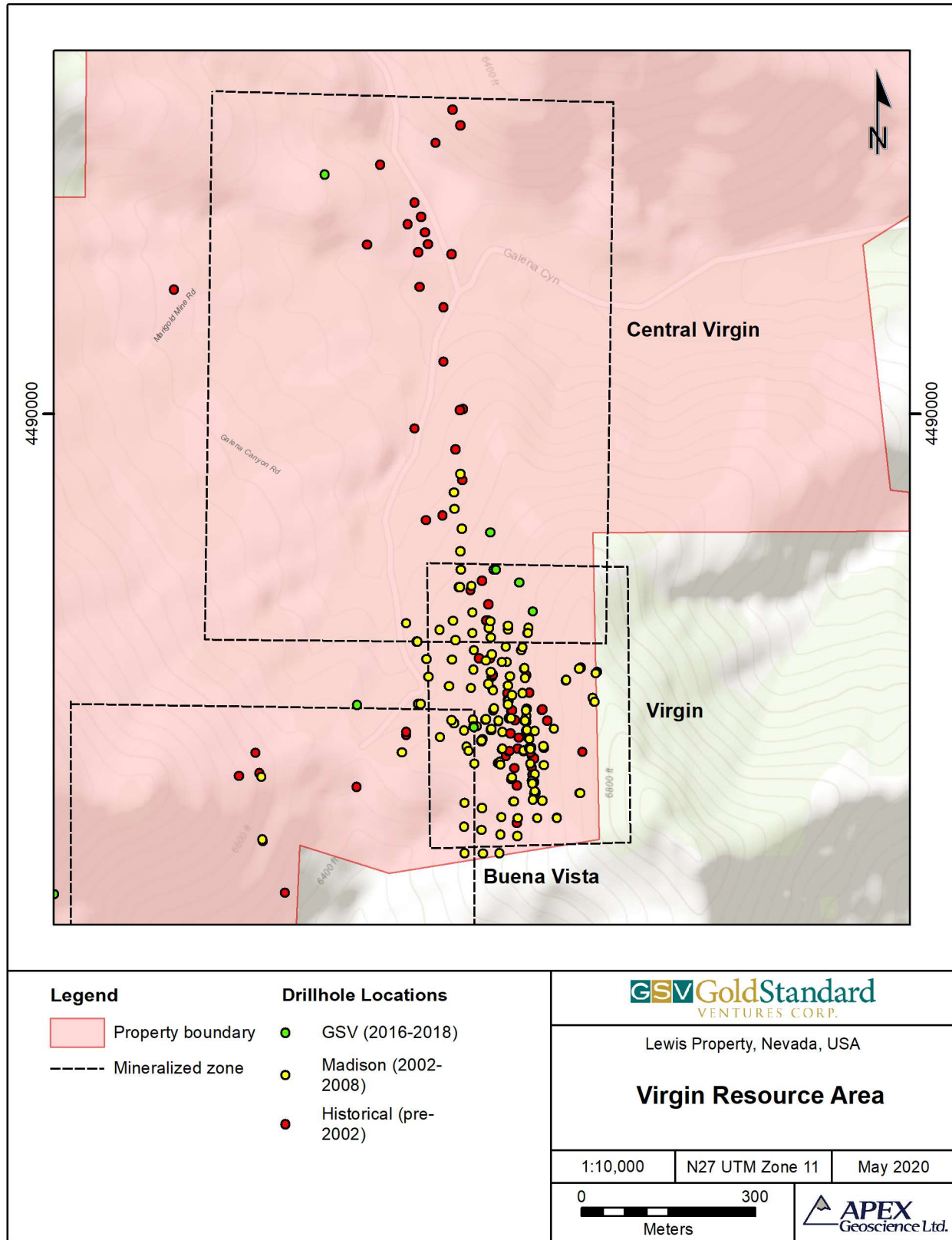


Figure 10.2 Recent drilling completed at the Virgin Resource area on the Lewis Property.



**Table 10.2. Highlights from the Madison Mineral drilling.**

Drillhole ID		From (m)	To (m)	Length (m)	From (ft)	To (ft)	Length (ft)	Au ppm	Ag ppm
MAD-005		53.3	85.3	32.0	175.0	280.0	105.0	16.087	48.160
	includes	56.4	67.1	10.7	185.0	220.0	35.0	46.000	112.379
MAD-005		196.6	219.5	22.9	645.0	720.0	75.0	0.987	2.932
MAD-006		51.8	80.8	29.0	170.0	265.0	95.0	1.192	12.073
MAD-013		117.4	147.8	30.5	385.0	485.0	100.0	0.660	40.928
MAD-014		117.4	137.2	19.8	385.0	450.0	65.0	0.511	5.191
MAD-015		79.3	102.1	22.9	260.0	335.0	75.0	1.482	18.506
	includes	88.4	93.0	4.6	290.0	305.0	15.0	5.029	20.786
MAD-018		85.3	140.2	54.9	280.0	460.0	180.0	3.107	21.213
		118.9	129.5	10.7	390.0	425.0	35.0	11.474	45.231
MAD-020		44.2	100.6	56.4	145.0	330.0	185.0	2.851	16.859
	includes	51.8	57.9	6.1	170.0	190.0	20.0	7.628	42.142
	includes	71.6	74.7	3.1	235.0	245.0	10.0	5.102	3.699
MAD-022		141.7	161.5	19.8	465.0	530.0	65.0	1.163	9.350
MAD-027		178.3	198.1	19.8	585.0	650.0	65.0	0.716	5.746
MAD-031		61.0	108.2	47.2	200.0	355.0	155.0	6.277	35.816
	includes	67.1	79.3	12.2	220.0	260.0	40.0	13.628	57.909
	includes	94.5	102.1	7.6	310.0	335.0	25.0	8.475	43.183
MAD-032		47.2	67.1	19.8	155.0	220.0	65.0	3.655	37.377
	includes	48.8	54.9	6.1	160.0	180.0	20.0	11.168	109.336
MAD-040		53.3	77.7	24.4	175.0	255.0	80.0	1.078	13.350
MAD-043		134.1	157.0	22.9	440.0	515.0	75.0	4.028	46.198
	includes	138.7	146.3	7.6	455.0	480.0	25.0	7.628	66.200
MAD-043		158.5	182.9	24.4	520.0	600.0	80.0	0.903	8.463
MAD-044		47.2	68.6	21.3	155.0	225.0	70.0	0.268	12.625
MAD-057		120.4	152.4	32.0	395.0	500.0	105.0	1.223	-
MAD-062		79.3	105.2	25.9	260.0	345.0	85.0	0.999	29.320
MAD-065		67.1	96.0	29.0	220.0	315.0	95.0	0.473	21.455
MAD-074		25.9	51.8	25.9	85.0	170.0	85.0	1.354	26.508
MAD-081		173.7	228.6	54.9	570.0	750.0	180.0	1.724	-
MAD-083		76.0	100.0	24.0	249.3	328.1	78.7	7.437	56.458
	includes	76.0	84.0	8.0	249.3	275.6	26.2	17.691	131.775
	includes	85.0	90.0	5.0	278.9	295.3	16.4	5.589	43.300
MAD-112		86.9	108.2	21.3	285.0	355.0	70.0	1.476	7.979
	includes	93.0	96.0	3.1	305.0	315.0	10.0	5.078	22.856
MAD-114		109.7	131.1	21.3	360.0	430.0	70.0	1.943	9.091
MAD-119		82.3	111.3	29.0	270.0	365.0	95.0	1.313	6.366
MAD-123		59.4	80.8	21.3	195.0	265.0	70.0	0.703	8.691
MAD-133		125.0	153.9	29.0	410.0	505.0	95.0	1.452	9.441
MAD-154		103.6	125.0	21.3	340.0	410.0	70.0	0.651	21.481
MAD-160		167.6	189.0	21.3	550.0	620.0	70.0	0.619	9.693

## 10.2 Recent Drilling by Gold Standard

Gold Standard conducted drilling in 2016, 2017, and 2018 at the Lewis Property. The drill programs focused on exploration, as well as resource delineation/expansion drilling at the Virgin Resource area (Figures 10.1 and 10.2). Gold Standard completed 15 drillholes: 7 core, 3 RC holes with core tails, and 5 RC holes totaling 23,735 ft (7,234 m) on the Lewis Property during the period. A complete list of the drillholes and targets can be found in Table 10.3 and significant highlights are listed in Table 10.4.

**Table 10.3. Gold Standard drilling between 2016 to 2018.**

Year	No. Drillhole	RC (ft)	RC (m)	Core (ft)	Core (m)	Target
2016	3	-	-	8,735	2,662	Buena Vista South
	2	-	-	1,774	541	Virgin Resource Area
2017	2	2,520	768	3,538	1,078	Buena Vista South
	1	2,500	762	744	227	Southwest Peak
	1	960	293	-	-	North Virgin; Hider; Shiloh
	1	1,500	457	-	-	Virgin Central
	3	1,100	335	-	-	Virgin Resource Area
2018	2	-	-	367	112	Virgin Resource Area
<b>Total:</b>	<b>15</b>	<b>8,580</b>	<b>2,615</b>	<b>15,158</b>	<b>4,620</b>	

GSV completed 5 core drillholes in 2016 totaling 10,508 ft (3,203 m). The drilling campaign tested the Buena Vista South and Virgin Resource Area. Holes V16C-01 and 02 were drilled from the same location and designed to test the mineralization in the center of the Virgin Resource area which also coincides with a gravity anomaly. V16C-01 was oriented at an azimuth of 98° with a dip of -53° to intersect the Virgin Fault at a perpendicular angle. As expected, mineralization was encountered immediately adjacent to and below the Virgin Fault with an intersection of 6.29 g/t Au and 5.38 g/t Ag over 4.1 m core length (Table 10.4). The final depth of V16C-01 was 982 ft (300 m). V16C-02 was oriented at an azimuth of 77° with a dip of -48° and was designed to test the northern extension of the VSZ. This hole encountered mineralization immediately adjacent and below the Virgin Fault, similar to V16C-01 with 1.27 g/t Au and 11.87 g/t Ag over 12.0 m core length (Table 10.4). The final depth of V16C-02 was 792 ft (241 m).

BVM16C-01 was drilled between the Virgin and Buena Vista South target zones and was oriented at an azimuth of 65° with a dip of -65°. The purpose of this hole was to identify mineralization along the northwest trending Copper Canyon - K Fault, a possible linking structure, that was previously mapped. The hole was drilled near a surface working that returned 0.8 ppm Au, 116 ppm Ag. This hole was completed at a depth of 1,003 ft (305 m); no significant mineralization was encountered (Battle Mountain Internal Presentation, 2017).

BVM16C-02 was drilled to intersect several splay faults associated with the Buena Vista South target area. It was oriented at an azimuth of 75° with a dip of -55°. The hole was designed to drill perpendicular to the steeply west dipping faults in that area. These faults coincide with geophysical anomalies from the IP-MT surveys carried out in 2003 that are also coincident with a gravity anomaly. The total length of this hole was 1,616 ft (493 m). The top of the hole at 20 ft (6.1 m) encountered 124 ft (37.8 m) core length of 0.25 ppm Au and 6.18 ppm Ag. Near the bottom of the hole, at 1,224 ft (373 m), a mineralized zone was encountered with 0.15 g/t Au and 16.7 g/t Ag over 55.8 ft (17 m) core length.

**Table 10.4. Highlights from the 2016 – 2018 GSV drill programs.**

Drillhole ID	From		Length	From		Length	Au g/t	Ag g/t	
	(m)	To (m)	(m)	(ft)	To (ft)	(ft)			
V16C-01	116.1	120.2	4.1	381.0	394.5	13.5	6.289	5.381	
V16C-01	162.2	179.7	17.5	532.0	589.5	57.5	0.804	10.926	
V16C-02	136.3	148.3	12.0	447.0	486.5	39.5	1.271	11.868	
BVM16C-03B	523.6	536.1	12.5	1,718	1759	41	0.4	25.8	
GS17004	204.2	214.9	10.7	670.0	705.0	35.0	0.779	1.000	
	includes	204.2	210.3	6.1	670.0	690.0	20.0	1.219	1.000
GS17004	438.9	466.0	27.1	1440.0	1529.0	89.0	0.297	10.472	
	includes	461.8	463.9	2.1	1515.0	1522.0	7.0	0.770	19.604
GS17005	170.7	178.3	7.6	560.0	585.0	25.0	0.294	2.438	
GS17005	477.0	484.6	7.6	1565.0	1590.0	25.0	0.631	3.620	
	includes	480.1	483.1	3.1	1575.0	1585.0	10.0	1.072	3.498
GS17006	453.2	457.2	4.0	1487.0	1500.0	13.0	1.515	-	
GS17007	64.0	70.1	6.1	210.0	230.0	20.0	0.450	47.036	
GS17007	381.0	388.6	7.6	1250.0	1275.0	25.0	0.303	3.466	
GS17008	13.7	27.4	13.7	45.0	90.0	45.0	0.797	80.466	
	includes	13.7	19.8	6.1	45.0	65.0	20.0	1.223	101.000
GS17009	129.5	135.6	6.1	425.0	445.0	20.0	0.235	2.798	
GS17010	97.5	103.6	6.1	320.0	340.0	20.0	0.363	2.100	
LW18-01	32.8	38.1	5.3	107.5	125.0	17.5	1.106	92.393	
LW18-02	28.2	35.4	7.2	92.4	116.0	23.6	0.491	5.068	

A wedge was set in BVM16C-02 at approximately 1,300 ft and BVM16C-02A was drilled off the same location. This hole was oriented at an azimuth of 75° with a dip of -51°. This hole was planned to complete the initial design at a shallower angle. BVM16C-02A was completed from 1,381 to 1,965 ft (420 to 599 m). No significant mineralization was encountered in this hole.

BVM16C-03 was collared in the southwest portion of the Buena Vista South target zone and was designed to be oriented at an azimuth of 88° with a dip of -70°. The purpose of this hole was to intersect mineralization near the Silver Fault that dips steeply to the west. This hole was designed to drill to a depth of 2,000 ft (610 m). Due to

adverse weather conditions at the time of drilling, this hole was suspended in late 2016. Due to drilling issues this hole was eventually completed in late 2017 with a new hole ID of BVM16C-03B with a final depth for the hole of 2,563.5 ft (781 m). Sporadic mineralization was encountered throughout the hole with the best intersection being at 1,718 ft (532 m) with a core length of 41.0 ft (12.5 m) of 0.40 g/t Au and 25.8 g/t Ag (Table 10.4).

In 2017 GSV completed 5 RC drillholes and 3 RC holes with core tails (RC top and core bottom), totaling 12,862 ft (3,920 m) at the Lewis Project. The 2017 drilling tested the Buena Vista South, Southwest Peak, Virgin Central and Virgin Resource areas.

Three holes (GS17008, 09 and 10) tested the upper and easternmost mineralization at the north end of the Virgin Resource area. These three holes were oriented with azimuths of 85° and with inclinations of -45° and were 500 ft (152 m) in length. The best intersection was GS17008 at 45 ft (13.72 m) which returned a core length interval of 45 ft (13.72 m) of 0.8 g/t Au and 80.5 g/t Ag and includes 20 ft (7.6 m) of 1.22 g/t Au and 101 g/t Ag (Table 10.4).

Drillholes GS17004, 05, 06, 07, 11 were exploration holes designed to test the mineralization at various exploration targets (Table 10.3). These holes were oriented from at azimuth of 60° to 100° with dips ranging from -60° to -90° and final depths from 960 to 3,674 ft (292.6 to 1,120 m). Significant gold and silver intersections were obtained in holes GS17004, 05 and 06 (Table 10.4). Hole GS17004 and 06 were drilled along the Buena Vista South target area testing the depth extent of the mapped main Buena Vista – Meagher fault structure, which is coincident with the edge of a gravity feature. Drillhole GS17005 drilled in the Southwest Peak area and returned several anomalous gold intersections (Table 10.4).

In 2018 GSV completed 2 follow-up short core drill holes in the Virgin Resource area. The holes total 367 ft (112 m). LW18-01 was oriented at 120° with a -60° dip, and LW18-02 was oriented at 110° with a -45 dip°. These holes were designed to provide more geological detail and expand the northern footprint of the for the Virgin Resource area mineralization. Both holes intersected significant mineralization with hole LW18-01 returning an intersection of 1.11 g/t Au and 92.39 g/t Ag over 17.5 ft (5.3 m) core length and hole LW18-02 returning 0.49 g/t Au and 5.07 g/t Ag over 23.6 ft (7.2 m) core length (Table 10.4).

## 11 Sample Preparation, Analyses and Security

### 11.1 Soil Sampling

Individual soil samples comprise several hundred grams of surficial material (soil) collected at a depth of 10 to 40 cm (4 to 16 in.) or more. Sample material is highly variable, ranging from well-developed organic rich soils in valley bottoms to gravelly,



rocky soil material covering much of the property. Some material may have been transported, at least locally, but most has formed *in situ*.

Soil samples were catalogued and grouped into shipments at which time they were placed in rice sacks that were sealed and shipped to ALS Global Laboratories (ALS), in either Sparks or Elko, Nevada. The samples were analysed for multielement geochemistry by aqua regia digestion followed by atomic absorption (AA) for gold and inductively coupled plasma (ICP) for multielement geochemistry with a finish using a mass spectrometer (MS) or an atomic emission spectrometer (AES).

No QC samples were inserted into the soil sample sequence by GSV. As soil samples are not used in any significant quantitative analyses, and their assay and geochemical results are examined relative to the sample population as a whole, this lack of QC data is acceptable. It is recommended that at least duplicate samples are collected to ensure reproducibility and some quality control is maintained.

## 11.2 Core Logging and Sampling

The drill core was boxed at the drill by the drill crew and was transported at the end of each shift to the core logging area located in Madison's Battle Mountain warehouse for the Madison drilling, or to GSV's Elko warehouse for the GSV drilling. At the logging facility, the core is examined and logged in order with geological (lithology, oxidation, clay minerals, structure, veining, alteration and mineralization) and geotechnical (recovery, RQD - Rock Quality Designation, and major structures) data recorded by geologist and assistants. Finally, sample intervals are recorded and marked on the core and (archive) photographs are taken.

Following the logging, sample marking and photographing process, the core was taken to the designated core cutting area at Carlin Trend Mining Supplies and Service in Elko, Nevada. There, the core is cut in half using a water-cooled, diamond-blade rock saw. Water used to cool the saw blade was not re-circulated. One half of the cut core was replaced back in the original core box for archiving, while the other half was placed in individually marked sample bags with a second part (duplicate) of the unique sample tag identifier. The core cutters were instructed to be consistent in their sampling with all of the cut pieces of core from one side going back into the core box and all of the pieces of cut core from the other side (same side) going into the sample bags. All samples were one (1) metre in length and every metre drilled was sampled. The samples were then sealed and organized into shipments and were catalogued before being picked up by SGS personnel or, in the case of other labs being utilized, before shipments were sent via commercial carriers. As a result, there were no issue with sample security between the drill and the laboratory.

Drill core logging and sampling conducted by Madison and GSV was in line with industry standard practices. The samples are representative of the intervals drilled and no factors that may have resulted in sample biases were observed.

### 11.3 Reverse Circulation Chip Logging and Sampling

Reverse circulation (RC) chip logging was accomplished by the collection of a small sample of the total amount of material comprising each sample interval. The logging chips are quickly washed and sieved at the drill rig in order to obtain the coarser (>~2-3mm) chips for examination. The archived logging chips from each sample interval are placed in compartmentalized plastic trays, each containing 10 or 20 compartments, with the corresponding 1.5m (5ft) interval for each compartment marked beside it on the tray's attached lid by permanent marker and the outside of the tray lid marked with the drillhole number and the total interval represented by the samples within. Once filled, the trays were sealed and transported to the Madison warehouse for logging by the drill geologist.

The RC chips within trays for each hole are logged for rock type, colour, oxidation, oxide minerals, clay minerals, structure, alteration and mineralization. Due to the fact that the chips are representative of a 5 foot interval, there may be more than one lithology present and so the recorded logging data normally incorporates a system, such as percentages or other scaling system, to indicate the relative abundance or intensity of the observed item within the chip sample. Regardless, the dominant features observed provided a comparable dataset to the drill core logs. After logging, the RC chip trays are photographed, and the trays are retained for archiving.

The RC drilling technique is a hammer drilling process with compressed air passing through the center of the drill string driving the hammer and the bit, which pulverizes the rock ahead of the advancing drill string. The compressed air bleeds through holes in the face of the bit carrying the rock chips up the sides of the drill bit and into holes located in the outer drill rod, immediately behind the hammer, which allow the chips to travel to surface in the annulus located between the inner and out rods of the string. At surface, the air and chips exhausting from the drill string are directed into centrifuge collector where sampling is controlled. The large RC drill rigs utilize 20' (~6m) drill rods that are advanced continuously until a new rod has to be added to the string. Four 5-foot (~1.5m) samples are collected as each drill rod is advanced. In the case of the Madison RC drilling, the rotary splitter within the sample collector was set to produce 2 equal samples from each interval. One sample was sent to the lab for analysis and the second sample was archived as the "retention" bag. The sample bags were previously marked with individual sample numbers, and their corresponding sample intervals were recorded at the end of each hole. Samples were collected primarily wet as water was added to the compressed air stream for dust suppression. The analytical samples were shipped to the SGS preparation laboratory in Elko, Nevada, for crushing and pulverizing prior to produce a pulp sample that was sent for analysis at the SGS laboratory in Toronto, Ontario, Canada.

The RC sampling practices used on-site by Madison and GSV were in line with industry standard practices. The samples are representative of the intervals drilled and there are no apparent factors that may have resulted in sample bias.

## 11.4 Bulk Density Data

A preliminary bulk density data collection program was completed in 2008 for the Virgin Resource area drilling. The GSV database yielded a total of 506 bulk density determinations of core samples using a weight-in-air versus weight-in-water methodology. There are some samples with paraffin coated measurements as well. The vast majority of samples (464) were collected from Madison holes MAD-138, 141, 142, 145, 146, 148 and 149. In general, samples were collected approximately every 10 m to include all rock and alteration types. Data was indexed to formation and lithological records by drillhole ID and sample depth.

During 2008, Zonge International Geophysical Services (Zonge) collected 41 samples from the core and submitted them for dry (paraffin coated) and wet density measurements. The combined average density for the dry samples was 2.58 g/cm<sup>3</sup> with the water saturated samples having an average density of 2.62 g/cm<sup>3</sup> representing a difference of approximately 1.4%. The Virgin Resource area database contains a combination of dry and water saturated density measurements. Based upon the studies by Zonge, no correction was applied to the samples with only water saturated values.

A range of formations including Antler Peak limestone (121 samples), Battle Formation clastic sediments (43 samples), Edna Mountain clastics (83 samples), Harmony Formation sandstones and clastics (107 samples), Havallah Formation fine clastics (45 samples) yielded a range of average densities from 2.62 g/cm<sup>3</sup> to 2.71 g/cm<sup>3</sup> with an overall average of 2.68 g/cm<sup>3</sup>. A total of 49 bulk density samples were situated within the Virgin Resource area mineralized wireframes. The bulk density samples situated within the mineralized zones were examined on a domain by domain basis. The vast majority of the samples (47 of 49) were contained within domains 1, 2, 5 and 9. The range of average densities for the four domains is 2.57 g/cm<sup>3</sup> to 2.73 g/cm<sup>3</sup>. The average density for the entire population is 2.71 g/cm<sup>3</sup>, but with a couple of outliers removed, the average density is 2.68 g/cm<sup>3</sup>.

## 11.5 Drilling Sample Preparation

The preparation of the Madison drilling samples (RC and core) was conducted by SGS personnel at their Elko, NV facility. After the samples were recorded as “received”, the sample “prep” process was initiated following a drying process involving 5-6 hours in a drying oven maintained at 65°-70° C. After drying, the samples were crushed in a jaw crusher to a minimum of 70% passing through a -10 mesh (2.0 mm) screen. A split of the crushed material was then pulverized to 95% passing a -150 mesh (106 µm) screen. Aliquots of the resulting sample pulp were then collected and were shipment for analysis at the SGS laboratory in North York, Ontario and TSL Laboratories in Saskatoon, Saskatchewan.

## 11.6 Chain of Custody

SGS (Elko) personnel collected all core samples from Carlin Trend's core cutting facility in Elko and picked up most of the RC samples from the Lewis Property drill sites. Samples not picked up by SGS personnel were delivered to the SGS preparation laboratory by Madison personnel. As a result the drilling sample chain of custody was secure from the drills and/or logging facility to the laboratory and there were no sample security issues.

## 11.7 Gold Analysis (Fire Assays)

The standard gold analytical technique used for the Lewis Project is an initial 30 g or 50 g fire assay with an instrumental (atomic absorption – AA) finish (FA-AA). Fire assays were conducted at SGS, TSL and ALS for the Madison and GSV RC and core samples.

The SGS assays have a detection limit of 5 parts per billion (ppb) Au. FA-AA results that exceeded a specified limit, in this case >1g/t Au, were re-assayed with a gravimetric finish (FA-GRAV).

At TSL, their fire assay fusion furnaces hold 24 crucibles at a time, of which 20 comprise client samples, and the remaining 4 comprise lab-inserted QC samples (normally comprising a pair of pulp duplicates, a gold Standard Reference Material sample and a blank sample). In addition, TSL completed a multi-element ICP geochemical analysis on all samples. TSL Laboratories completed the ISO/IEC 17025 Accreditation in 2004 and is Accredited Laboratory No.538 and is fully independent of APEX, Madison and GSV.

Umpire assaying on a second sample pulp split were completed at SGS Lakefield Labs in Ontario, which is also an ISO/IEC 17025 accredited laboratory and is also fully independent of APEX, Madison and GSV.

## 11.8 Quality Assurance and Quality Control

The following sections summarize the procedures employed by Madison to ensure quality within both its analytical and non-analytical databases.

### 11.8.1 Non-Analytical Data Quality Control

During drilling, logging, sampling and shipping multiple data keeping systems are employed by GSV. Most data in the field is recorded in written form: in field books, maps, logbooks, sample sheets, logging forms, or shipping forms. The field data is later transcribed to digital formats onsite or at Elko using secured company computers. All hard copy forms are stored onsite and/or at the GSV offices in Elko, NV for future use.

Geological logging is conducted with the aid of ruggedized laptop computers. All files containing geological and summary logs are stored on the project computer and are sent by e-mail on a daily basis to management and GSV's data management person in Elko, Nevada. Data verification is carried out on the data received and any errors identified are corrected using original documents.

Hard copies of all field data are stored and filed at the GSV Elko office. Field maps, sections, trench plans, and field sketches are scanned and sent to management and GSV's data management person where paper copies are made and stored. Paper copies of the drill logs and corresponding original laboratory assays are generated and stored at the GSV office in Elko, Nevada.

All computer data including the photographic records of drill core and RC chips are stored on site in the company computer and backed up at the Elko office.

Data from third parties, such as laboratories or survey contractors, are generally supplied in digital and printed formats. Nowak and Associates store digital files from surveyors and assay labs in their original format, in addition to integrating them into the master database.

All project electronic data received and generated by GSV is backed up on a scheduled basis to an external hard drive or the cloud.

### **11.8.2 Analytical Data Quality Control**

A program of check analysis has been implemented to evaluate and validate assay results received from the exploration drilling by Madison on the Lewis Property. The core and reverse circulation drill program undertaken by Madison in 2007-2008 resulted in the collection of 6,997 gold analyses in 2007 and 7,397 gold analyses in 2008. These analyses were performed at the laboratory facilities of SGS in Toronto, Ontario, Canada and TSL Laboratories in Saskatoon, Saskatchewan, Canada. In addition, 14,377 multi-element ICP analyses were performed by TSL over the two years.

In 2007 and 2008, Madison utilized Ali Shakar (P.Geo.) of Lions Gate Geological Consulting (LGGC) to undertake a review of the project's data. On the basis of these reviews, LGGC provided commentary and recommendations.

In 2008, as a general practice, for each batch of twenty samples Madison included one blank, one duplicate and one standard reference material sample. The recent (2016-2018) drilling at the Project has similarly included the insertion into the sample stream of blanks and standard reference samples (SRM's) along with duplicate samples.

### 11.8.2.1 Blanks

Throughout the 2007 drill program, no blanks were included in the sample shipments. In 2008, Madison started using reject material derived from previous RC drilling as blank material. Madison used selective RC drill cuttings, which had returned no (or low) gold assay values from their initial analysis and were thought to be void of any mineralization. Such “coarse blank” samples provide a means by which the sample preparation procedures at laboratories can be tested for potential issues related to sample-to-sample contamination, usually due to poor procedures related to incomplete clearing/cleaning of crushing and pulverizing machines between samples. The 2008 coarse blank data does not show any consistent issues with such contamination (Figure 11.1). Some variability was noted in the coarse blank data, which is likely attributable to the material chosen not being truly ‘void’ of all gold mineralization and thus a more rigorous selection process for coarse blank material is required.

The recent (2016-2018) drilling at the Project has similarly included the insertion into the sample stream of blanks samples. The 2016-2018 blank sample assay data does not show any issues with respect to potential lab contamination (Figure 11.2).

Figure 11.1 - Graph – 2008 Blanks

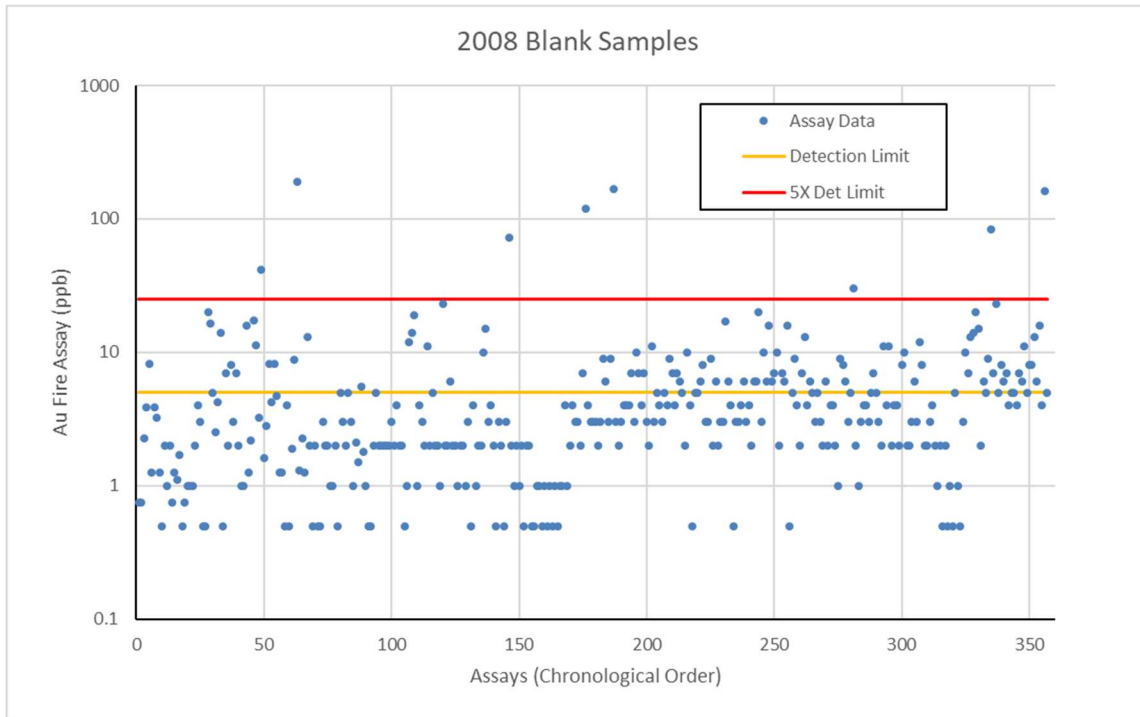
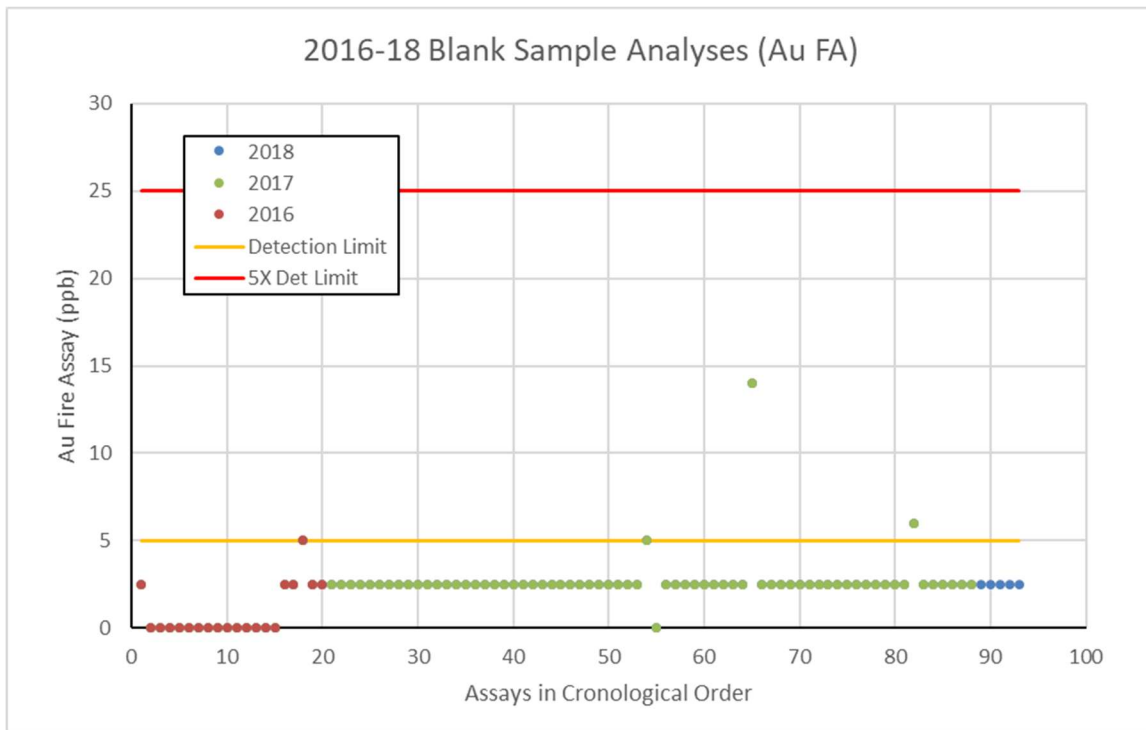


Figure 11.2 - Graph – 2016-18 Blanks



### 11.8.2.2 Standard Reference Material Samples (SRMs)

Standard reference material (SRM or Standard) samples are inserted into an analytical sample stream in order to provide a means by which overall analytical precision and accuracy can be measured. Standard samples can either be commercially purchased or custom made and comprise pulverized and homogenized materials that have been suitably tested, normally by means of a multi-lab round robin analysis, in order to establish an accepted (certified) value for the standard and statistics to define and support the “acceptable range” (i.e. variance), by which subsequent analyses of the material may be judged. Generally, this involves the examination of assay results relative to inter-lab Standard Deviation (SD), resulting from each standard’s round-robin testing data, whereby individual assay results may be examined relative to 2SD and 3SD ranges.

The Standards inserted into the 2008 Lewis Project drilling sample stream were purchased from CDN Laboratory in Vancouver, BC. During 2008, geologists inserted Standards, selected randomly from a group of 3 different SRMs (see Table 11.1 below), into the sample stream as part of their regular logging and onsite sampling procedure. The data for the 2008 standard samples shows reasonable overall accuracy as the average assay values for each of the standards do not differ significantly from their respective certified values (see Table 11.2 below). However, as illustrated in the graphed data below and the remainder of Table 11.1, the analytical data does show generally poor overall precision with a significant number of outside 2SD and outside 3SD results. That being said, there is no evidence that the variance is any greater than the normal variance observed in gold analyses (i.e. sample variance). Fortunately, the majority of the high variance standard samples were not associated with mineralized intervals.

**Table 1.1. CDN Laboratory Standard Reference Material used at the Lewis Property.**

SRM Name	Value Au g/t	Std Dev. Au g/t	+2std dev. g/t	-2std dev. g/t	+3std dev. g/t	-3std dev. g/t
GS-P5B	0.44	0.02	0.48	0.40	0.50	0.38
GS-P7A	0.77	0.03	0.83	0.71	0.86	0.68
GS-1P5A	1.46	0.06	1.58	1.34	1.64	1.28
GS-2C	2.06	0.075	2.21	1.91	2.285	1.835

**Table 2.2. CDN Laboratory Standard Reference Material used at the Lewis Property.**

SRM	Certified Value (Au g/t)	Certificate Std. Dev. (Au g/t)	Number of Assays	Data Average (Au g/t)	% Diff.	Data Std. Dev. (Au g/t)	Total Assays Outside 2SD	% of Analyses	Total Assays Outside 3SD	% of Analyses
GS-P5B	0.44	0.02	16	0.39	-11%	0.04	8	50%	7	44%
GS-P7A	0.77	0.03	16	0.72	-6%	0.09	7	44%	4	25%
GS-1P5A	1.46	0.06	265	1.51	+3%	0.09	65	25%	22	8%
GS-2C	2.06	0.075	24	2.10	+2%	0.190	11	46%	7	29%



Figure 11.3 - Graph – 2008 Standard CDN-GS-P5B

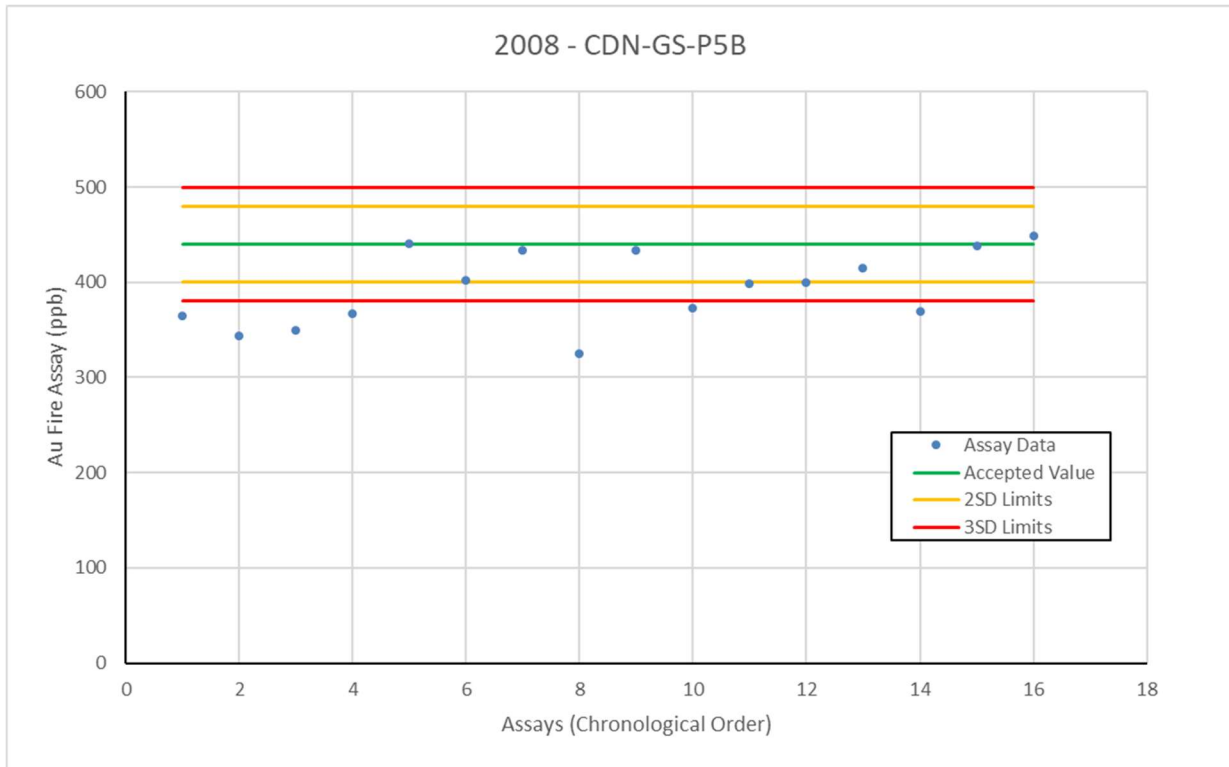


Figure 11.4 - Graph – 2008 Standard CDN-GS-P7A

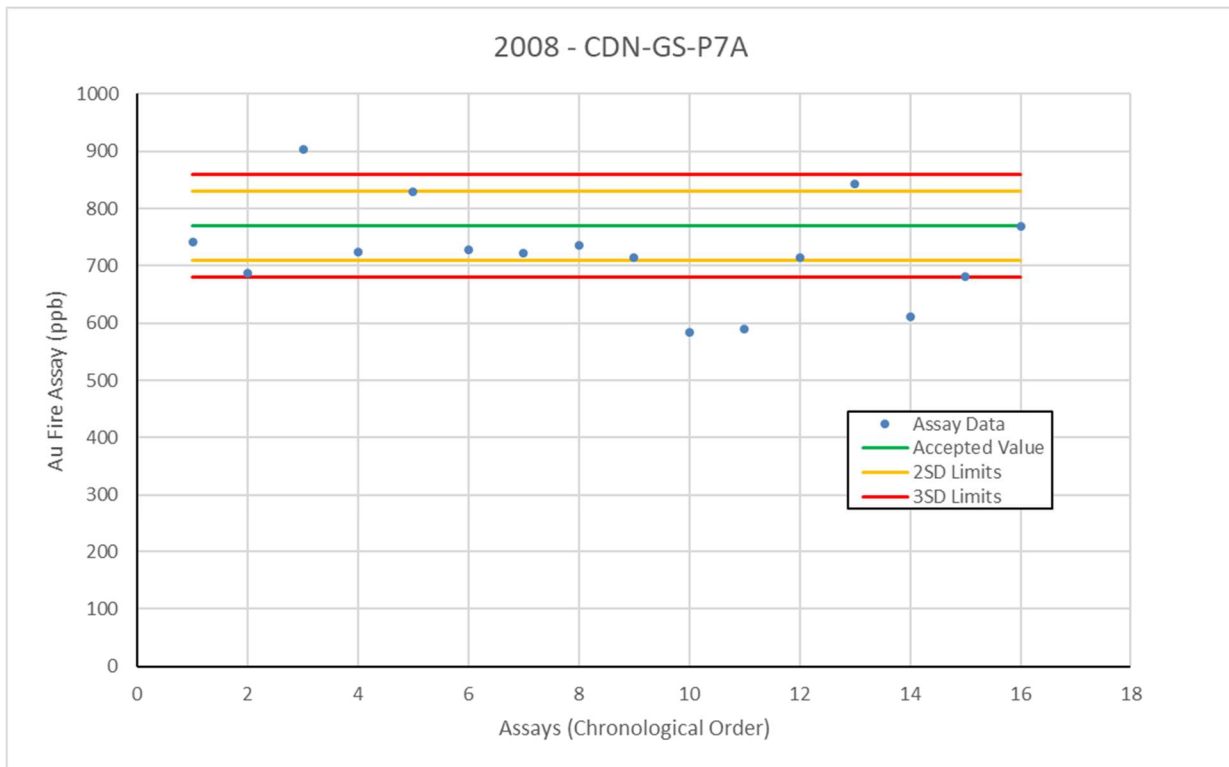


Figure 11.5 - Graph – 2008 Standard CDN-GS-1P5B

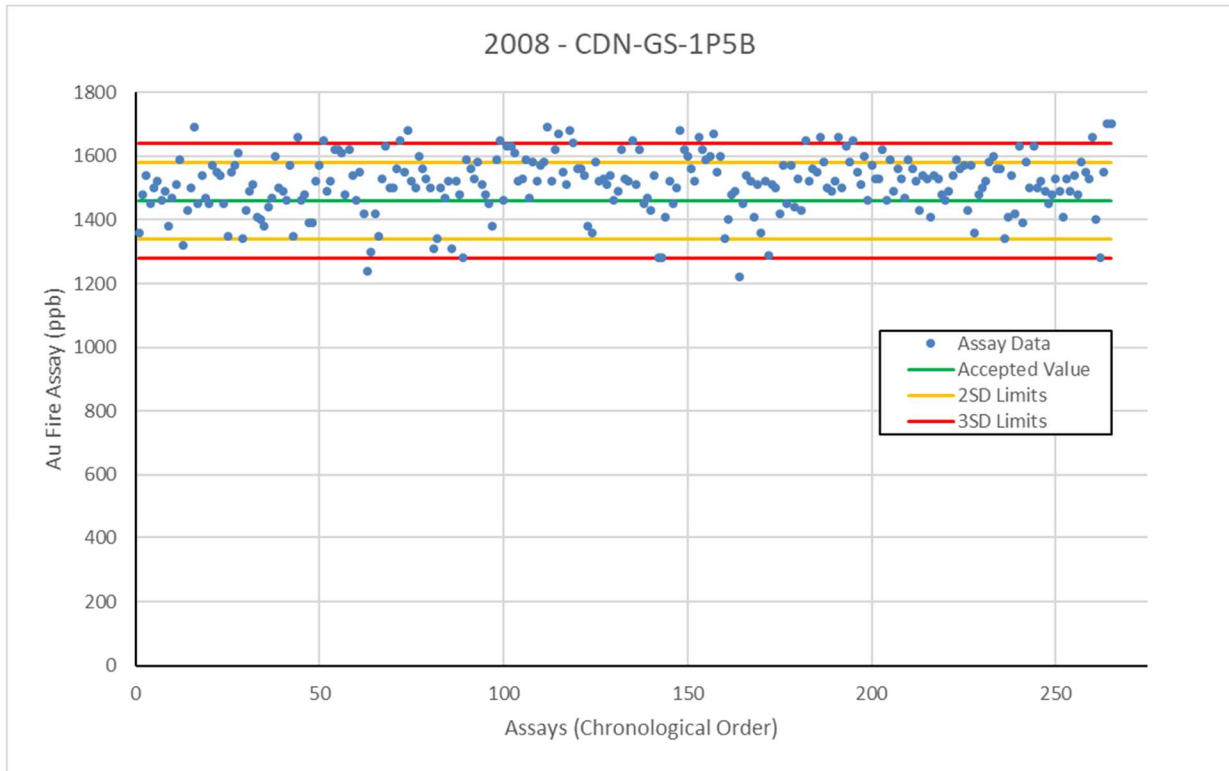
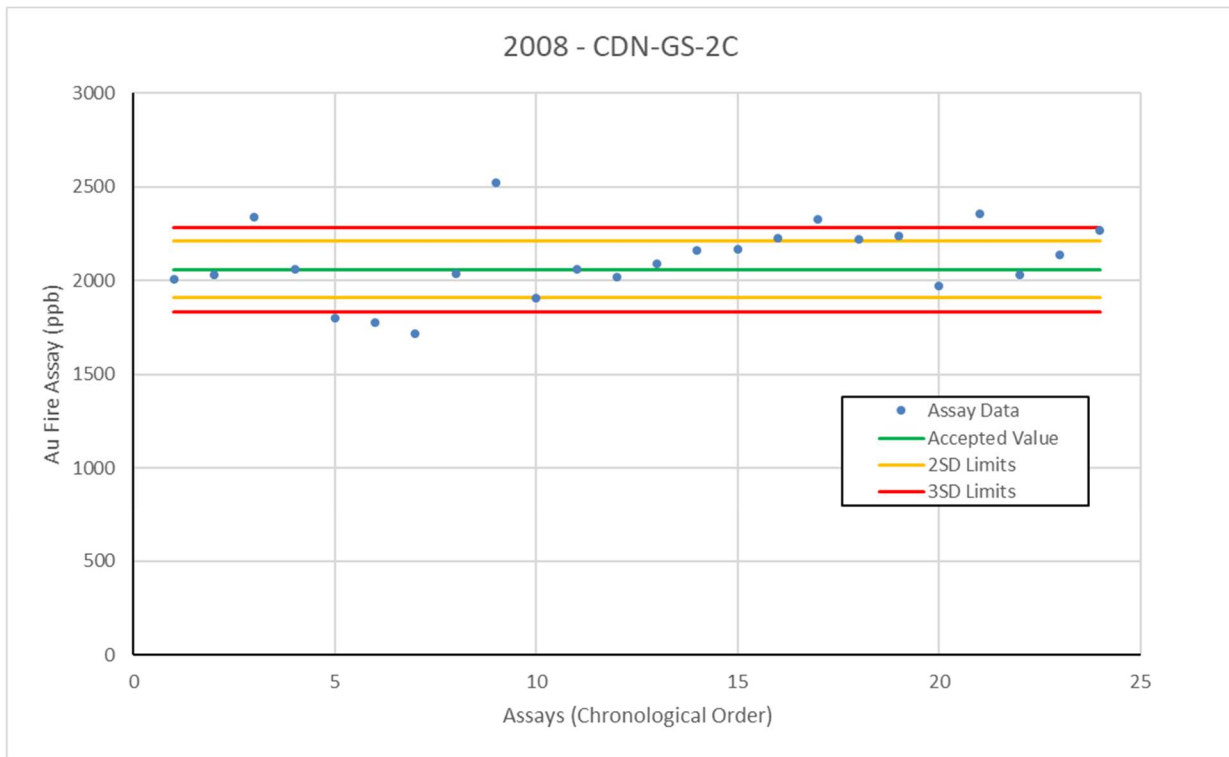


Figure 11.6 - Graph – 2008 Standard CDN-GS-2C



A limited amount of drilling was been conducted at the Project between 2016 and 2018. In total, 17 drillholes were completed during this period totalling 23,735 ft (7,234 m) of drilling. The blank samples inserted into the 2016-2018 drilling sample stream are discussed above. In total, 101 standard reference material samples (standards) were also inserted into the sample sequence, generally spaced so that at least 1 QC sample was assayed for every 20 regular drilling samples. The standards inserted into the 2016-18 Lewis Project drilling sample stream were purchased from CDN Laboratory in Vancouver, BC and MEG Inc., of Reno, NV. The certified values for the 2016-2018 standards are presented below in Table 11.3.

**Table 11.3. Standard Reference Material used at the Lewis Property for the 2016-2018 exploration.**

SRM Name	Source	n	Value Au g/t	Std Dev. Au g/t	+2std dev. g/t	-2std dev. g/t	+3std dev. g/t	-3std dev. g/t
GS-P5B	CDN	1	0.44	0.02	0.48	0.40	0.50	0.38
GS-1P5A	CDN	5	1.46	0.06	1.58	1.34	1.64	1.28
GS-2C	CDN	3	2.06	0.075	2.21	1.91	2.285	1.835
MEG-Au-17.06	MEG	57	0.098	0.007	0.112	0.084	0.119	0.077
MEG-Au-12.13	MEG	13	0.879	0.059	0.997	0.761	1.056	0.702
MEG-Au-11.15	MEG	14	3.445	0.133	3.711	3.179	3.844	3.046
MEG-Au-11.19	MEG	8	Not found on MEG website					

All but one of the standard samples inserted into the 2016-2018 Lewis drill sample stream were assayed less than 15 times, which is not a “statistical” number of analyses to judge the performance of the laboratories. The remaining standard was MEG-Au.17.06, which was analysed 57 times. The data for this standard is presented below on Figure 11.7, which indicated that there was particularly good overall accuracy and precision in the assaying of this standard. As a result, it can be states that there were no significant issues with the analyses of the standards inserted into the 2016-2018 Lewis drill sample stream.

### 11.8.2.3 Duplicates

A total of 574 field duplicate samples was collected throughout the 2007 drilling program. These samples comprised the collection of a second sample of RC chips (or drill core) representing the same interval, with both the “parent” and the “duplicate” samples submitted for separate assays. The results of the 2007 duplicate assays are illustrated in Figure 11.8. In general, there was excellent correlation between the parent and duplicate assay results (correlation coefficient = 0.878 and  $R^2 = 0.772$ ). This can be interpreted as representing good (consistent) assaying by the Laboratory, in this case most of the assays were conducted at SGS, but also that there is very little “sample variance” meaning that there was no evidence of a significant “nugget effect”.

Figure 11.7 - Graph – 2016-2018 Standard MEG-Au.17.06

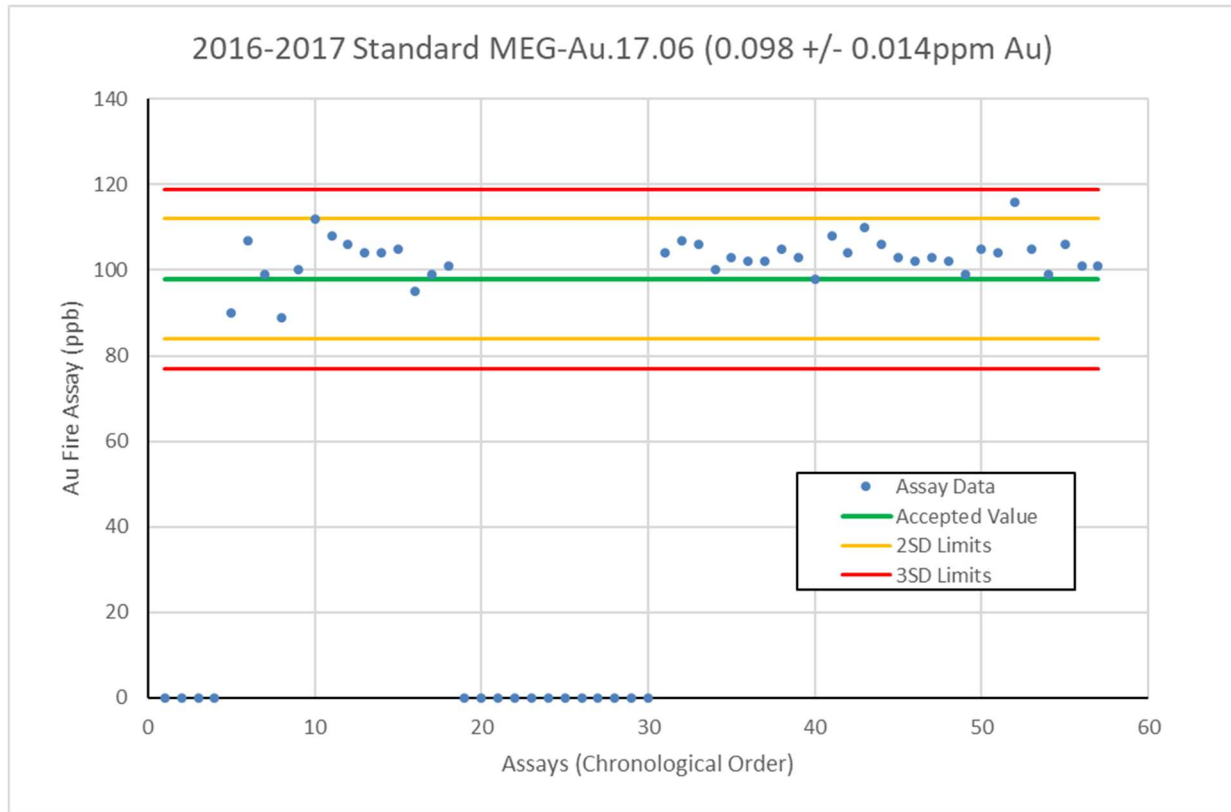
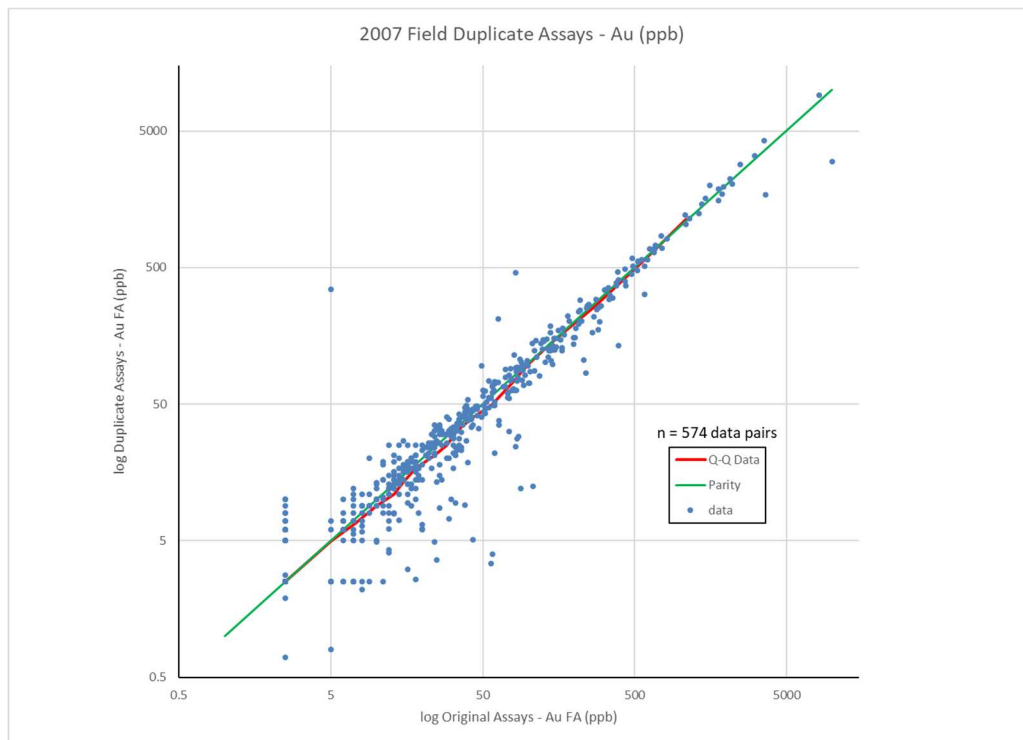
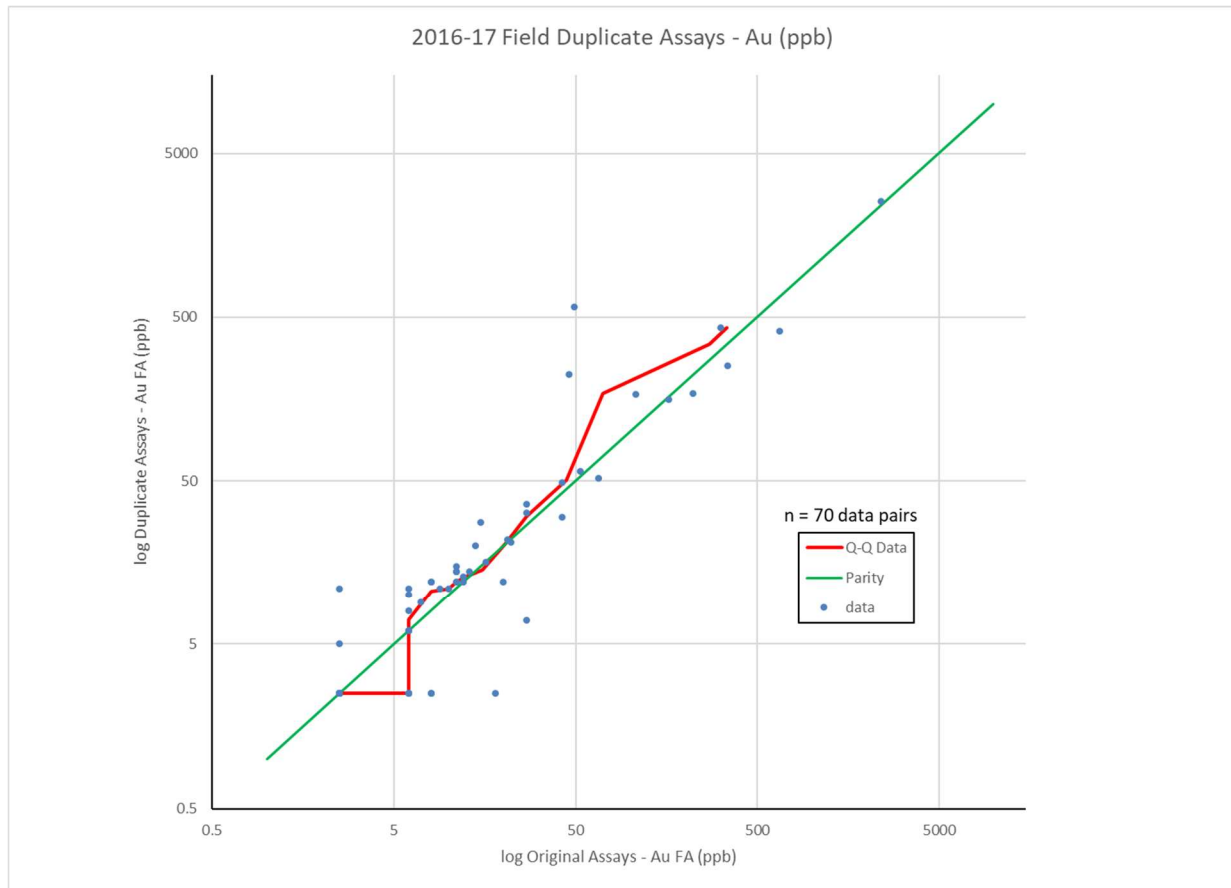


Figure 11.8 - Graph – 2007 Field Duplicates



A further 70 field duplicate samples were collected during the 2016 and 2017 Lewis drill programs. The results of the 2016-17 duplicate assays are illustrated in Figure 11.9. In general, there was good correlation between the parent and duplicate assay results (correlation coefficient = 0.970 and  $R^2 = 0.940$ ). This can be interpreted as representing good (consistent) assaying by the Laboratory, in this case most of the assays were conducted at Bureau Veritas and ALS, but also that there is very little “sample variance” meaning that there was no evidence of a significant “nugget effect”. That being said, 2 samples with much higher duplicate assays can be seen to skew the Q-Q duplicate data in the upper (90<sup>th</sup>) percentile range.

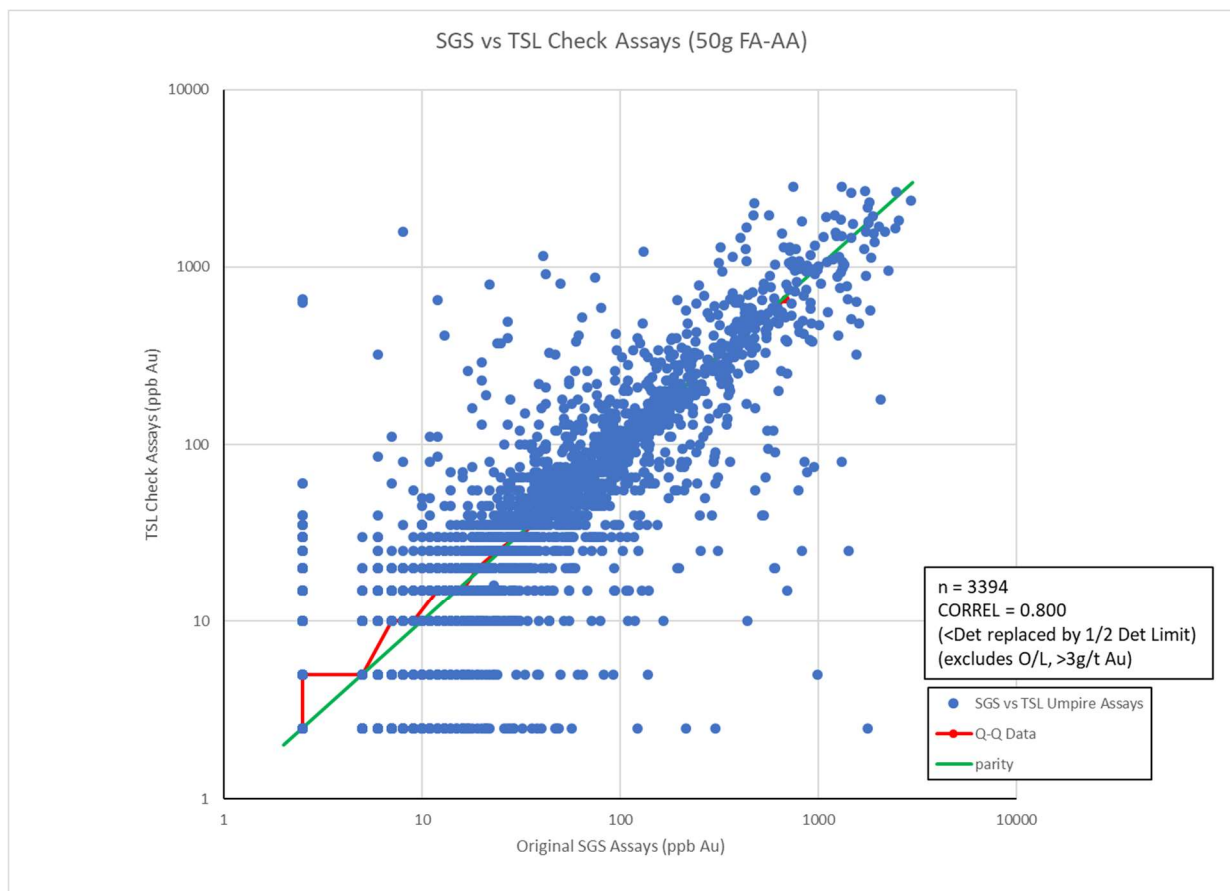
**Figure 11.9 - Graph – 2016-17 Field Duplicates**



### 11.8.2.4 Umpire Assaying

Although no standards or blanks were inserted in the 2007 drill sample stream, a significant amount of umpire assaying was conducted to verify original assay results. The primary analytical laboratory/company for the Project was SGS Laboratories in North York, Ontario. Umpire assaying was conducted primarily utilizing TSL in Saskatoon, Saskatchewan, although additional umpire assaying was also conducted at Bureau Veritas and ALS in Vancouver, BC. The most significant umpire dataset comprises some 3300 50g fire assays (with AA finish) that were conducted at SGS and TSL. The results for this dataset are illustrated in Figure 11.10 below. In general, the data shows excellent correlation (correlation coefficient 0.800) and thus there is no evidence of any significant assay bias at the primary laboratory (SGS).

**Figure 11.10 - Graph – 2007 Umpire Assays**



### 11.9 Conclusions

Based upon a thorough review of all of the available analytical data for the Lewis Project, it can be concluded that the current sample preparation, analysis, and security practices are appropriate for the type of mineralization that has been/is being evaluated. Furthermore, from an examination of the analytical QAQC data available for the Project, it can be concluded that there has been reasonable accuracy in the projects gold

assays and that there is no significant evidence of sample bias or the “nugget effect”. As a result, it can be concluded that the Projects drilling assay database is appropriate for use in the resource modeling and estimation work discussed in a subsequent section of this report.

## 12 Data Verification

### 12.1 Historical Data Verification

The following section summarizes the verification and validation of the historical drilling database. A large portion of the information presented in this sub-section has been summarized or reproduced from Atkinson (2014). However, APEX personnel conducted a detailed verification program of the GSV databases that were provided in May and September of 2019, in particular for the Virgin Resource area drillholes.

#### 12.1.1 *Madison Minerals Inc. Data Verification*

In 2007, Madison conducted a collar coordinate comparison of the FWL and UTX drill holes. The previous operator provided Madison a CAD drawing referencing all drillholes in UTM (NAD27). Bigby and Associates found and surveyed 3 FWL holes and all but one UTX hole in the field. These coordinates were compared against coordinates found on the CAD drawing provided by the previous operator. The 3 FWL collars found by Bigby and Associates were within 10 ft (3 m) on the easting and northing when compared to the CAD drawing. Based on this comparison, for all other FWL holes it was decided to use the CAD coordinates for the easting and northing. For FWL-1 to 50, the elevations provided from the drill logs were used, and all other holes were given an elevation of 10,000 ft (3,048 m). For UTX-09, coordinates for the easting and northing were taken from the CAD drawing. For the elevation, a Digital Terrain Model (DTM) was created from all Bigby field observations. This was used to provide an elevation for UTX-09 (Nowak, 2007).

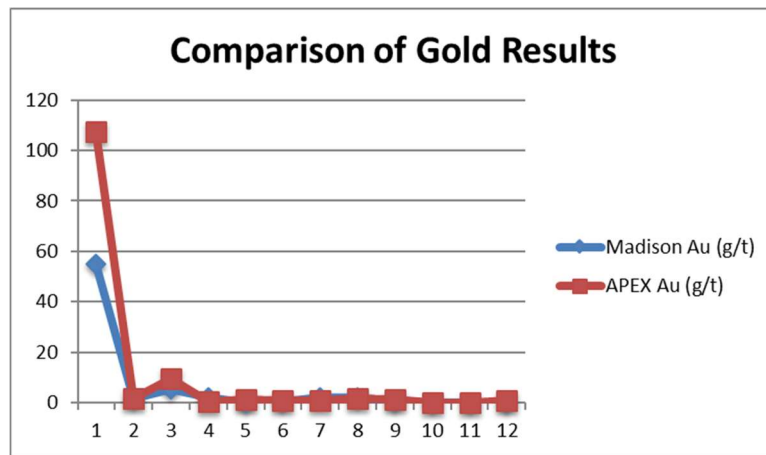
All drillholes completed by Madison Minerals between 2002 -2008 were surveyed by Bigby and Associates to provide accurate coordinates including elevations.

#### 12.1.2 *APEX Data Review and Verification 2013 - 2014*

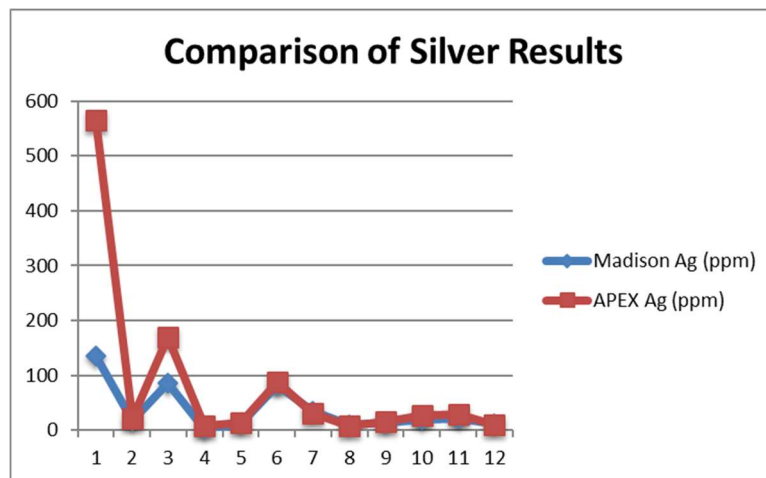
A site visit was conducted to the Lewis Property by Mr. Brian Atkinson on July 26-27, 2013. The purpose of the site visit was to confirm the location of drillholes and to gain a familiarity of the geology and mineralization of the Property. Mr. Atkinson located and verified several drill collars but did not observe surface mineralization due to poor exposure. Mr. Atkinson inspected Madison drill core and observed sulphide mineralization in intensely fractured/sheared zones as well as in horizons with higher carbonate content. Mr. Atkinson recorded that all spatial, geological, and geochemical information collected during the July 2013 site visit matched with the drillhole database.

Thirteen verification samples were collected during the site visit, including four core and nine RC samples, collected from drillholes that represented the entire drilled area focussing on zones with anomalous precious and/or base metal intersections. Verification samples were submitted to ALS Chemex, Elko for sample preparation. Samples were then shipped to ALS Chemex, Vancouver for fire assay and multi-element ICP analysis. Some variance in the gold results between the verification samples and the drillhole database was observed, however, the overall trend of the gold values agreed well between the two datasets (Figure 12.1). The variance is likely due to a nugget effect caused by coarse gold in the mineralized zones. Base metal and silver values agree extremely well between the two datasets, with trends in silver, lead and zinc overlying almost perfectly (Figures 12.2 to 12.4).

**Figure 12.1. Comparison of gold assay results from 2013 APEX independent sampling verification.**

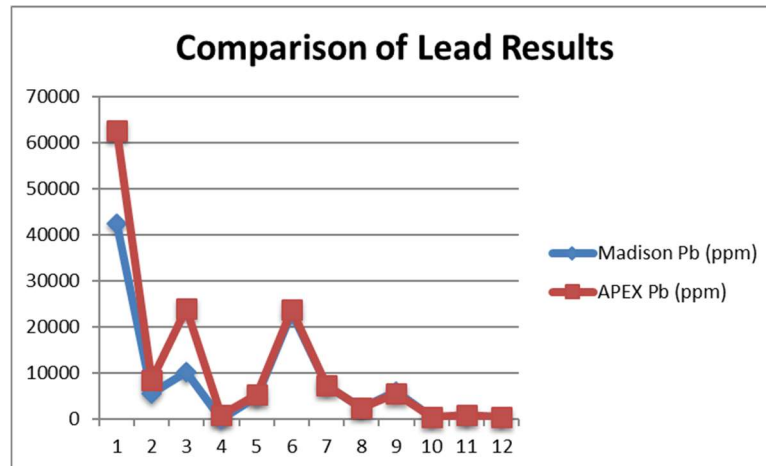


**Figure 12.2. Comparison of silver assay results from 2013 APEX independent sampling verification.**

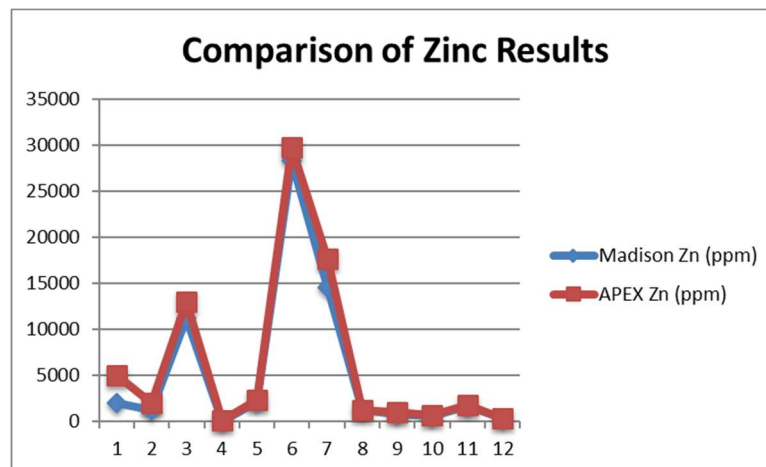




**Figure 12.3. Comparison of lead ICP results from 2013 APEX independent sampling verification.**



**Figure 12.4. Comparison of zinc ICP results from 2013 APEX independent sampling verification.**



## 12.2 APEX Data Review and Verification 2019

Mr. Michael Dufresne, M.Sc., P.Geol., P.Geo., a QP, principal of APEX Geoscience Ltd. and lead author of this Technical Report conducted a site visit at the Lewis Property on August 17, 2019. Mr. Dufresne verified data in the field by confirming known mineralization and geology visible at surface. One rock grab sample (9MDP220) was collected to confirm mineralization on the Property. The rock sample was sent to ALS Vancouver and analysed for gold and multielement geochemistry. The sample returned 0.097 ppm Au and 6.62 ppm Ag, which confirms the presence of anomalous precious metals at the Virgin Resource area and, to a degree, historical drilling and sampling. The sample was collected from an outcrop of limonitic Battle Mountain Conglomerate

found near a string of historical mine shafts. Table 12.1 illustrates the geochemistry of the sample.

**Table 12.1. 2019 APEX Site Visit Sample**

	Au ppm	Ag ppm	As ppm	Cd ppm	Fe %	Sb ppm	Zn ppm
9MDP220	0.097	6.62	1465	62.4	3.72	7.88	1280

During the site visit, a total of eleven collar coordinates were recorded using a handheld GPS in the field. These coordinates were compared against historical collar coordinates to validate the drilling data from the Property. All eleven field collar coordinates coincide with collar coordinates from the drillhole database usually +/- 5 m, with a few up to 10 m. Part of the inaccuracy can be attributable to often finding the drill pad but not always the true collar. Where collars were found they were generally within 5 m of the database coordinates.

Gold Standard provided APEX with a complete drillhole database for the Lewis Project in May and late August, 2019 along with a number of original logs and assay certificates for most of the drillholes within the Virgin Resource area. GSV provided APEX with a drillhole database that consists of analytical, geological, density, and collar and downhole survey information. The provided data was reviewed in detail in the fall of 2019 by APEX personnel. The authors and other APEX personnel conducted validation of the data provided to ensure the database was in good shape and considered suitable for resource estimation. Several generations of database validation were evident by GSV and Madison. The current database was compared and validated against these prior databases and original data for most of the holes within the resource area.

The Lewis drillhole database provided to APEX in August, 2019, contained exports for collars, assays, downhole surveys, lithologies and specific gravity data. The data was reviewed for completeness, with the Virgin Resource area drillholes identified and separated out as a subset. The database export contained partial to complete information for 949 drillholes. A total of 490 of the 949 holes were identified as being on the Lewis Property, with 230 of the holes completed in the Virgin Resource area.

A total of 177 of the 230 drillholes in the Virgin Resource area are considered modern drilling and were completed by GSV and/or its wholly owned subsidiaries BMG and Madison. The drillhole data for these holes is fairly complete including collar surveys, down hole surveys, geological logs and assay certificates. The remaining 53 holes are considered historical holes and were completed during the 1980's by either Hart River Mines or Barrick, or in 1996-1997 by United Tex Sol Mines. The information for these holes, in particular, the holes completed during the 1980's, is considered limited with a few of these holes lacking even assay information.

For validation, APEX personnel compared the database information against the available original log and assay certificates for all available drillholes. All intervals from logging information were checked against the database to ensure the total drillhole length and number of intervals was accurately captured. Each assay interval was

checked against lab certificates where available. For the pre 2000 drillholes, GSV was able to provide copies of the handwritten geological logs with handwritten assays on them for the vast majority of the historical holes. These were used to validate and enter the proper information into the database for the Virgin Resource area holes. Many of these holes identified mine site AA assays (conducted at Mercur or Battle Mountain) versus assays (AA or FA) conducted at a proper laboratory such as Rocky Mountain Geochemical Corp. or Legend Corporation

Any intervals with blank assay results were investigated to determine the reason for the blanks. If the logs indicated no recovery or lost samples, the assay intervals were left blank and listed as insufficient samples (IS). If it was determined to be a blank interval not sampled or no information could be found, the interval was populated with half the lower detection limit for gold and silver and listed as not sampled (NS). In total, 230 drillholes were validated, and from the initial database 599 intervals had no assay information. These intervals were determined to be NS or IS based on the information available.

It is worthwhile to note that a few areas with recovery problems encountered in the Madison RC drilling (2002 to 2008) were re-drilled with core (Atkinson, 2014). The core results from the 2002 to 2008 drilling indicate some variations in grade and thickness of the intervals in comparison to the RC drillholes but for the most part gold zones were reproduced. There are several narrow intervals with no recovery and as a result there are some gaps in the assay data. These are likely due to: poor recovery at the Antler limestone - Battle conglomerate contact and poor recovery in fault zones both of which can be mineralized but due to recovery the results may not be representative or difficult to reproduce with nearby or twin holes.

In the opinion of the authors, the current Lewis drillhole database as it pertains to the Virgin Resource area drilling is deemed to be in good condition and suitable to use in ongoing resource estimation studies. No validation was performed on any holes outside the Virgin Resource area. It is the opinion of the authors that a full data validation should be carried out in future for all drillholes outside the Virgin Resource area.

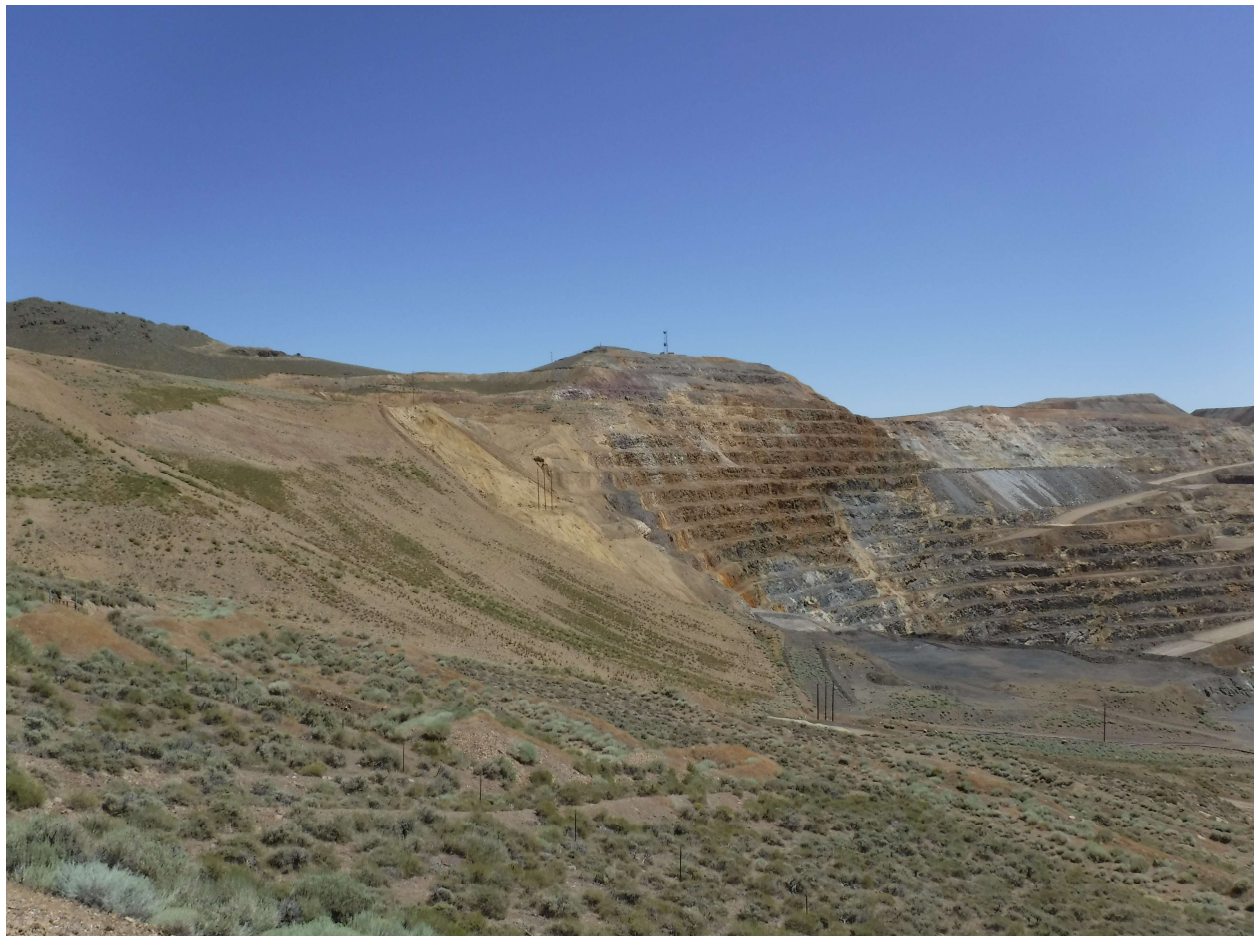
### **13 Mineral Processing and Metallurgical Testing**

There has been little to no metallurgical work conducted on samples from the Lewis Property and in particular the Virgin Deposit. This represents an unknown and represents some risk for the Project. However, partly mitigating this risk is that the Phoenix Mine borders the Virgin Resource area, and, in fact, the mining by Newmont and now NGM was significant in the Virgin Structural Zone right up to the Lewis Property boundary. The north wall of the current Phoenix Pit comes within 50 m of the Virgin Resource area and the Lewis Property boundary and displays stepping fault offsets and a significant thickness of oxidation (>100 m depth) as illustrated in Figure 13.1 below.

Little work has been conducted on the interpretation of mineralization that is oxidized and is potentially easily heap leachable versus sulphide based material, that still may be heap leachable, but may also be better suited to other metallurgical processes such as gravity, flotation and/or tank leach. In general, there is little metallurgical data and the authors have relied upon their experience with other Nevada projects and information from the adjacent NGM Phoenix Pit and operations for assumptions related to reasonable prospects of future economic extraction. In addition, the size of the current resource dictates that there may be a strong dependence on eventually processing any material through the Phoenix operation rather than constructing any significant stand alone operation and processing plant. Therefore, in that kind of a scenario, there will be additional risks in being able to come to commercial terms with NGM in order to utilize the Phoenix operation processing facility as a 3<sup>rd</sup> Party facility.

Potential future mining of the Virgin Resource would likely necessitate a cut back of the current north wall of NGM's Phoenix Pit. There could be geotechnical risk and certain liabilities incurred in what would be effectively a cut back of the NGM's Phoenix Pit that would likely have to be discussed, negotiated and permitted with NGM at minimum.

**Figure 13.1. Oxidation visible North Wall of Phoenix Pit.**



### 13.1 Current and Historical Metallurgical Test Work

Limited information is available or known of historical metallurgical testing conducted on material for the Lewis Project prior to 2002. Fragmentary historical correspondence suggests that Golden Phoenix sent RC drill samples for metallurgical testing at the Cove Mine in 1998 to 1999. The authors could not verify this data; therefore, this information should not be relied upon.

There is strong evidence that much of the Barrick 1980's FWL drillhole assaying was conducted at a combination of the Battle Mountain Gold Company Mine Site, NV (now the Phoenix Mine), the Mercur Mine site, UT and at Rocky Mountain Geochemical Laboratory in Colorado. There are a number of methods used, usually indicated as Au and Ag by AA or Au and Ag by FA. The author's experience is that much of the mine site assaying, especially where heap leach mining was active, was conducted by cyanide leach of 15 g aliquots and finished with Atomic Absorption Spectroscopy. The Fire Assay methods were usually ½ or 1 assay ton total gold (and silver) assay. Therefore, in the handwritten logs many of the Au and Ag AA assays are likely to have been partial leach values that were then followed up with total Au and Ag by fire assay. For the most part, a review of the available FWL logs shows that the AA Au and Ag values are often matching to slightly lower than the total Au and Ag values. This may support that at least the oxide mineralization is cyanide leachable.

### 13.2 Mineral Processing at the Phoenix Mine

Deep skarn mineralization has been intersected in historical drilling at the Lewis Property, similar to material mined from the historical Lower Fortitude Deposit of the Phoenix Mine. Due to the type of mineralization intersected at Lewis and the proximity to the Phoenix Mine, this sub-section summarizes the mineral processing utilized at Newmont's Phoenix mill. It is important to note that the Phoenix Mine is located outside of the Lewis Property boundary and the author has not verified the information in this sub-section. Furthermore, the reader is cautioned that the similarity of geological information between the Phoenix Mine deposits and the adjoining Lewis Property is in no way indicative that a mineral deposit of similar size or grade exists or will be found on the Lewis Property.

Nevada Gold Mine's Phoenix Mine is described as a skarn-hosted polymetallic massive sulphide replacement deposit. The Phoenix Mine produces approximately 241,000 oz. gold and 32 million lbs. of copper annually. As of December 31, 2018, the Proven and Probable Reserves at the Phoenix Mine were 146,400,000 tons (132,812,000 tonnes) at 0.019 oz/t (0.66 g/t) Au for 2,820,000 total ounces, 243,100,000 tons (220,536,000 tonnes) at 0.18% Cu for 890 million lbs and 146,400,000 tons (132,812,000 tonnes) at 0.22 opt (7.54 g/t) Ag for 31,910,000 oz (Newmont Goldcorp Corporation, 2019a; 2019b). The authors of this Technical Report have not verified the mineral reserves and resources reported for the Phoenix Property. However, the resources were prepared by QPs in accordance with NI43-101 guidelines and the authors have no reason to question their validity. The reserves presented above

are not necessarily indicative of the mineralization at the Virgin Resource area or on the Lewis Property

Gold production at the Phoenix mine commenced in 2006. Newmont experienced difficulties in the early stages of production due to the variability of ore hardness (Lee et al., 2014). Currently, the mined ore is crushed at the mine and transported via a conveyor system to the mill where it is crushed to a finer material and finely ground as a slurry. Treatment of the ore occurs by successive stages of flotation, generating a copper-gold concentrate containing approximately 15-20% copper. Fine liberated gold is recovered from the concentrate using a gravity circuit, followed by dewatering and storage. The residual gold from the flotation tailings is recovered in a carbon-in-leach circuit (Newmont Goldcorp Corporation, 2019b).

During the early stages of the milling operation, Newmont had no method to process the transition and copper oxide ores, therefore, a run-of-mine heap leach pad and solvent extraction (SX) plant was designed and developed to produce copper cathode from the ore (House and Shepherd, 2014). Copper from copper oxide ore and enriched copper sulphide ore is extracted using copper heap leaching to produce copper cathodes. The process of copper heap leaching, as reproduced from Newmont Goldcorp Corporation (2019b), is as follows:

*“Heap leaching is accomplished by stacking uncrushed ore onto impermeable, synthetically lined pads where it is contacted with a diluted sulfuric acid solution thus leaching the acid soluble minerals into a copper sulfate solution. The copper sulfate solution is then collected and pumped to the solvent extraction (“SX”) plant. The SX process consists of two steps. During the first step, the copper is extracted into an organic solvent solution. The loaded organic solution is then pumped to the second step where copper is stripped with a strong acid solution before being sent through the electrowinning (“EW”) process. Cathodes produced in electrowinning are 99.99% copper.”*

## 14 Mineral Resource Estimates

This section details the statistical analysis, geological modelling, and resource estimation work for the initial Mineral Resource Estimate (MRE) completed for the Lewis Project by APEX. The MRE was completed by co-authors Mr. Warren Black, M.Sc., P.Geo. and Mr. Steven Nicholls, BA.Sc., MAIG under the direct supervision of Mr. Michael Dufresne, M.Sc., P.Geol., P.Geo., all independent QPs with APEX.

Definitions used in this section are consistent with those adopted by the CIM Council in “Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines” dated November 29, 2019, and “Definition Standards for Mineral Resources and Mineral Reserves” dated May 10th, 2014, and prescribed by NI 43-101. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

## 14.1 Introduction

Statistical analysis, three-dimensional (3D) modelling and resource estimation were completed by Mr. Warren Black, M.Sc., P.Geo. with assistance from Mr. Steven Nicholls, MAIG, of APEX (under the direct supervision of Mr. Michael Dufresne, M.Sc., P.Geo., P.Geo.). The workflow implemented for the calculation of the Lewis Project MRE was completed using the commercial mine planning software MICROMINE (v 20.0). The Anaconda Python distribution (Continuum Analytics, 2017) and contributions made by Mr. Black to the Python package pygeostat (CCG, 2016) were used for supplemental data analysis.

GSV provided APEX with the Lewis Project drillhole database that consists of analytical, geological, density, and collar survey information. The provided data was reviewed in detail during 2019 by APEX personnel. The data was used to calculate the Lewis Project MRE. The authors and other APEX personnel conducted validation of the data provided to ensure the database was in good shape and considered suitable for resource estimation. Several generations of database validation were evident by GSV and Madison. The current database was compared and validated against these prior databases and original data for most of the holes within the resource area. In the opinion of the authors, the current Lewis drillhole database is deemed to be in good condition and suitable to use in ongoing resource estimation studies.

The MRE was calculated using a block model size of 3 m (9.84 ft; X) by 3 m (9.84 ft; Y) by 3 m (9.84 ft; Z). APEX estimated the gold and silver grade for each block using Ordinary Kriging (OK) with locally varying anisotropy to ensure grade continuity in various directions is reproduced in the block model. For the purposes of conducting pit optimization studies the block model was diluted by estimating a waste grade for the outer blocks using composites within a transition zone along the outer edge of the mineralized estimation domain that was then proportionately combined with the estimated grade for the portion of the block within the mineralized domain. The final MRE is reported as undiluted and only includes the percent of the block inside of the mineralized domain. Details regarding the methodology used to calculate the mineral resource are documented in this section.

Modelling was conducted in the North American Datum (NAD) of 1927 (Zone 11). The Lewis Property drillhole database consists of 518 drillholes completed at the Lewis Property between 1980 to 2018. A total of 28 of the holes were drilled just off the property mostly along strike from the Virgin Resource area on lands within the northern part of the Phoenix Pit currently being mined by NGM. A total of 230 holes are within the Virgin Resource area and were used in the resource modelling. The remaining 260 holes are spread across a number of other targets on the Lewis Property including Southwest Peak, Buena Vista, Central to North Virgin, Hider, White, Shiloh, Antler North and the Eastern Trinity area.

A total of 177 of the 230 drillholes in the Virgin Resource area are considered modern drilling and were completed by GSV and/or its wholly owned subsidiaries Battle

Mountain and Madison. The drillhole data for these holes is fairly complete including collar surveys, down hole surveys, geological logs and assay certificates. The remaining 53 holes are considered historical holes and were completed during the 1980's by either Hart River Mines or Barrick, or in 1996-1997 by United Tex Sol Mines. The information for these holes, in particular, the holes completed during the 1980's, is considered limited with a few of these holes lacking even assay information.

APEX constructed estimation domains using a combination of gold and silver grades, and all available geological information that helped constrain different geological controls on mineralization (Figure 14.1). A couple of complete sets of systematic interpreted geological cross sections were provided by GSV for inclusion into the model in order to assist in constraining the mineralization interpretation and resulting domains. The estimation domains were used to subdivide the deposit into mineralized volumes and their measured sample intervals within those volumes for geostatistical analysis. Mr. Dufresne, M.Sc., P.Geol., P.Geo., visited the Property in August, 2019 and verified the location of a number of the GSV, Madison and Battle Mountain drill collars as well as the surface geology. Mr. Black and Mr. Nicholls have not visited the Property.

## **14.2 Drillhole Data Description**

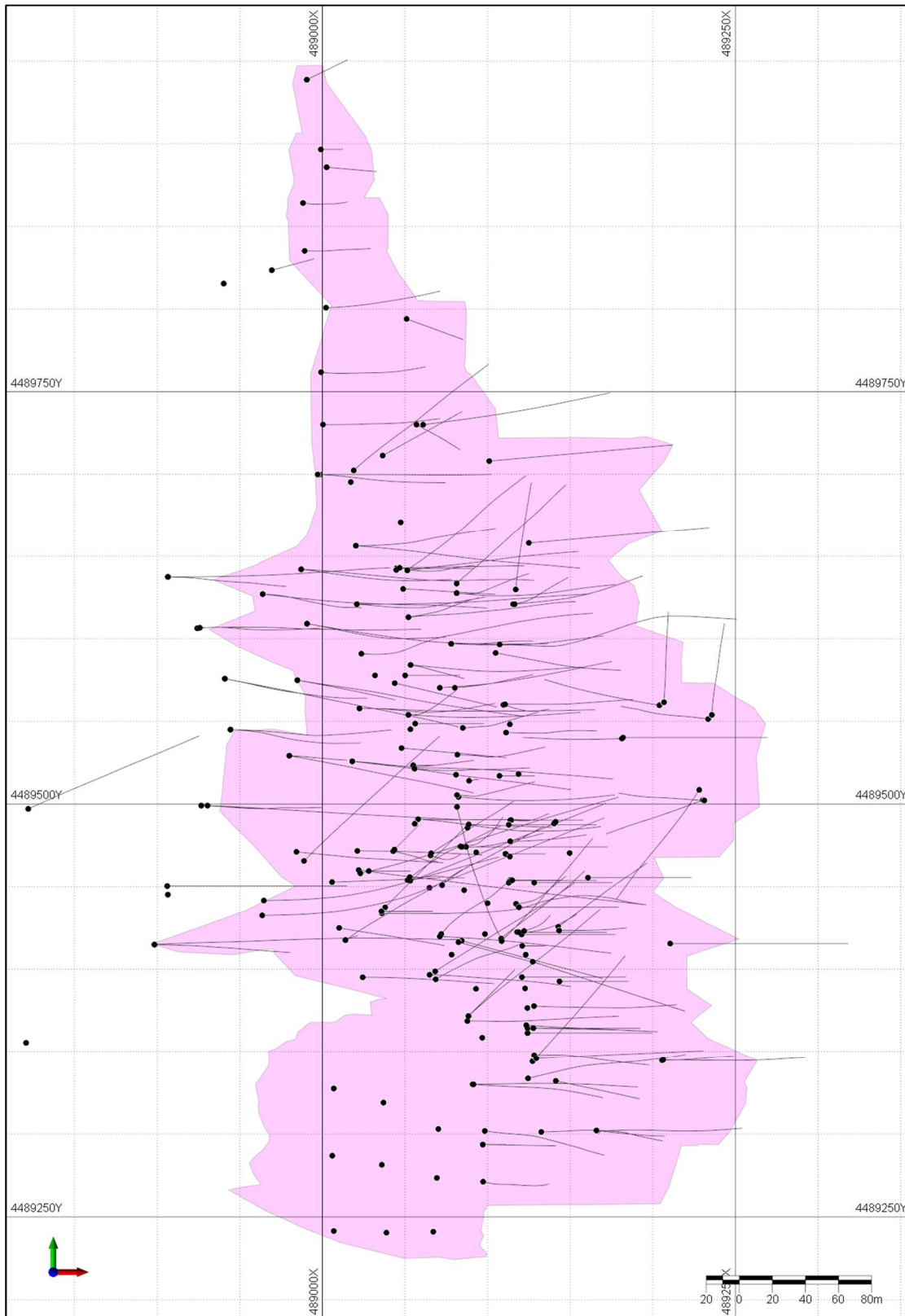
### **14.2.1 GSV Drillhole Data**

The Lewis drillhole database was exported and provided to APEX by GSV in May 2019 and again in August, 2019. The final August, 2019 export for collars, assays, down hole surveys, lithologies and specific gravity data was reviewed for completeness, with the Virgin Resource area drillholes identified and separated out as a subset. The database contained 949 drillholes. A total of 490 of the 949 holes were identified as being on the Lewis Property, with 230 of the holes completed in the Virgin Resource area.

An additional 28 drillholes were identified as drilled off the Property but close by and in some cases collared on the Property but drilled east testing the extension of identified mineralized zones on the Lewis Property, the Virgin and Buena Vista zones, as they extend onto NGM lands. The remaining 431 holes are clearly on NGM lands were not reviewed or utilized.



Figure 14.1. Silhouettes of extents of the mineralized domains for the Lewis Project MRE.



The Lewis Virgin area drillhole database utilized by APEX for resource estimation, including the recently completed GSV 2016 - 2018 drillholes, consists of 148,716 ft (45,328 m) in 230 holes, including 53 historic drillholes (pre-2000) and 177 post-2000 modern and fairly complete holes in terms of information. The database includes 123,235 ft (37,562 m) in 197 RC holes (4 unknown type and assumed to be RC) and 25,481 ft (7,767 m) in 33 core holes completed between 2003 and 2018. The core holes represent 14.3% of the drillhole population by number of holes and 17.1% by footage. This is deemed an acceptable number of core holes for the drillhole database. The historic drillholes were completed between the early 1980's and 1997 with no core drilling.

The exported assay database provided to APEX by GSV contained 45,967 sample/assay interval entries. The assay database was trimmed down to the Lewis Virgin Resource area drillholes. The Virgin Resource area database consists of 29,512 sample intervals, with 4,217 intervals for the historic drillholes and 25,295 intervals for the GSV and related company drilling for the 2002 to 2018 drillholes. The sample database contains 599 entries of NS and/or blanks, approximately 2% of the database. Most of these entries are attributed to unsampled intervals, especially most of the >5 ft intervals (70 samples), and the collar/overburden top of hole intervals. The remaining dominantly 5 ft sample intervals without samples are attributed to mostly poor recovery, a few lost samples or missing data.

#### **14.2.2 Quality Control Program Results Summary**

The QA/QC data are discussed in detail in Section 11 above. The pre-2000 historical drilling contains little to no useable QA/QC data. The historical drillholes total 53 with 4 of the early 1980's holes with no assay data. Those 4 holes were discarded/ignored during the resource estimation process. The 49 historical holes represent just under 20% of the total holes drilled in the Virgin Resource area and less than 15% of the total assay intervals.

The QA/QC data for the 2002 to 2018 drillholes, which equate to more than 80% of the drillholes and more than 85% of the sample intervals, is extensive, with a large data set of not only QA/QC data, but umpire or second laboratory assaying. Based upon a thorough review of all of the available analytical data for the Lewis Project, it can be concluded that the current sample preparation, analysis, and security practices are appropriate for the type of mineralization that has been/is being evaluated. In addition, based upon examination of the analytical QA/QC data for the 2002 to 2018 drillholes, it can be concluded that there has been reasonable accuracy in the projects gold and silver assays and that there is no significant evidence of sample bias or significant "nugget effect" for the Project (see Section 11). The authors of the Technical Report have concluded that the Virgin Resource area drilling assay database is appropriate for use in the resource modeling and estimation work discussed below.

Although there is little to no QA/QC data for the pre-2000 historical drilling, there are numerous examples of modern drillholes completed by GSV/Battle Mountain/Madison

that were drilled near or in fact effectively twinned some of the 1980's drillholes and yielded similar results in positions where expected and at grades within reason for gold – silver systems. The 2002 to 2018 drilling has well covered the area of the pre-2000 historical drillholes and no systematic bias or issues were identified. As a result, the historical drillholes have been utilized in the MRE below.

#### **14.2.3 APEX Drillhole Database Validation**

APEX conducted a comprehensive database validation for the Virgin Resource area drillholes utilizing work and property visits conducted in 2013 – 2014 (Atkinson, 2014; Nowak, 2007) and more recent work by APEX personnel during the latter half of 2019 and a property visit conducted by one of the co-authors of the current Technical Report on August 17, 2019.

All of the collars for holes completed from 2002 to 2018 were surveyed by BMG-Madison (for the period 2002 to 2008) and by GSV (for 2016 to 2018). The collar surveys for BMG and Madison were completed by Bigby and Associates Inc. (Bigby) and have been spot checked during the various property visits with no issues identified. The collars for the 2016 to 2018 drilling were surveyed by Apex Surveying. In addition, to the spot checking of a number of the post 2000 collars during the field visits, Bigby found and surveyed a few of the Barrick 1980's drillholes and found all of the holes to be within 10 ft of the database location, which was based upon orthorectification of grids and existing AutoCAD drawings. The only significant issue for the historic holes was the lack of reliable elevation data. The historic holes were snapped to the imported digital elevation that was provided by GSV to APEX.

The 2002 to 2008 drillholes employed single shot downhole surveys every 50 to 100 feet for all holes using a Flex IT gyro instrument. The core holes were downhole surveyed by a gyro post drilling by either International Directional Services (IDS) or Apex Surveying and in general, data was collected every 50 ft. The GSV drillholes from 2016 to 2018 were downhole surveyed by IDS or Apex Surveying at completion of drilling for those holes exceeding 500 ft in length. Survey points were collected every 50 ft. APEX personnel spot checked a number of the survey files vs the database and found no issues.

APEX conducted an extensive assay database validation on all intervals within the Virgin Resource area. GSV provided APEX with a complete drillhole database in May, 2019 and again in late August, 2019, along with original logs and assay certificates. APEX compared the interval assay values in the database for gold and silver against all provided original documents. All incorrect assays were corrected. All zeros were removed in favour of half detection values. An hierarchical formula for gold was created where 50 g FA values (gravimetric or AA) were utilized over 30 g AA values and Screen Fire Assays of 500 or 1,000 g of sample material were substituted for all other assay methods. A similar approach was used for silver, however, generally silver was only assayed by ICP with follow up assaying by 30 g FA AA or gravimetric methods.

GSV was able to provide handwritten logs with handwritten assays for the majority (26) of the 1986 Barrick drillholes. In many cases, only composite grade across widths were in the database. These were replaced with individual assays that were available in the logs. Assay certificates were found and validated against for the 1996 and 1997 United Tex Sol Mines drillholes. For the most part, original assay certificates, digital assay certificate, geological logs were available for all the 2002 to 2018 drillholes. The gold and silver values were validated for all of the holes with available documents.

Intervals with blank assay information were either listed as insufficient samples (IS) and left blank if it was possible to verify the origin of the missing value, or listed as not sampled (NS) if no information could be found or if it was determined the interval was purposefully not sampled. In the database, any assay interval listed as IS would be left blank. Any interval listed as NS would be given half detection limit for gold and silver. This is a conservative approach that allows some flexibility for samples that would have been normally samples but were lacking material usually due to poor recoveries. A more detailed discussion of the database validation can be found in Section 12.

The authors of this Technical Report deemed the database of sufficient quality for statistical treatment and mineral resource estimation.

#### **14.2.4 APEX Micromine Drillhole Database**

APEX imported the validated drillhole database into Micromine that consists of 258 drillholes with 230 drillholes completed between 1980 and 2018 comprising the Virgin Resource area. The other 28 holes were drilled just south of the Virgin Resource area on NGM lands within the Phoenix Pit area. Of the 230 Lewis Virgin Resource area drillholes, a total of 193 holes were reverse circulation (RC) drillholes, 33 were core holes, and 4 holes were of unknown hole type and are presumed to have been RC holes. The entire 230 holes in the Virgin Resource area total 148,716 ft (45,328 m) of drilling with 123,235 ft (37,562 m) in 197 RC holes (4 unknown type and assumed to be RC) completed between 1980 and 2018, and 25,481 ft (7,767 m) in 33 core holes completed between 2003 and 2018.

The drillhole assay database consists of gold and silver analyses from 226 of the 230 drillholes within the Virgin Resource area drillhole database. From these 230 drillholes, there are 29,512 sample/interval entries, of which 599 intervals (3,454 m or 11,313 ft) contain no assays and were not sampled and/or not analyzed. These blank intervals are commonly found at the top of the drillholes before mineralization is first encountered or in-between mineralized zones, or they belong to the pre-2000 historical drillholes (224 intervals) that come from logs with only handwritten assays in the logs. It is quite possible these holes and assay represent selective sampling.

APEX evaluated any existing supporting documents provided by GSV and others to assess if these blank intervals were due to selective non-sampling of rock considered to be waste or whether these intervals were not analyzed because there was not enough material returned during drilling or the samples were lost between drilling and the

laboratory. It is essential to distinguish between these two cases as they are treated differently during resource estimation. Intervals classified as "no sample" (NS) due to selective non sampling of material adjudged to be waste are assigned a nominal waste assay of 0.0025 ppm Au and 0.05 ppm Ag while intervals classified as "insufficient recovery" (IR), or lost in transit are left blank. APEX was conservative when classifying the type of blank interval as NS and IR. If APEX could not confidently determine that a blank interval was IR, it is assumed NS and was assigned a waste assay. Of the 599 blank intervals, 42 are classified as IS and left blank. The remaining 557 blank intervals were classified as NS.

The vast majority of the MAD holes drilled between 2002 and 2008 contain downhole surveys. The deeper 2016 to 2018 holes completed by GSV also have downhole surveys. Most if not all the 53 historical drillholes that were completed between 1980 and 1997 do not have downhole surveys. However, the vast majority of these holes were either vertical, or of short length or both, therefore hole deviation was likely not a significant issue for these holes.

### **14.3 Estimation Domain Interpretation**

#### ***14.3.1 Geological Interpretation of Mineralization Domain***

A couple of sets of Interpreted geological cross sections were provided by GSV for use in guiding the mineralization modelling and wireframing. The east-west sections were digitally "hung" in Micromine 18.0 and then were used to interpret and join mineralized zones on section using a number of polygons. In most cases there are several intersections in a number of holes representing several mineralized zones or structures. An example of the GSV sections is provided as Figure 14.2.

Precious metal mineralization encountered in drilling at the Virgin Resource area is classified as either bedding replacement or structurally controlled. Stratigraphically controlled refers to flat lying or gently dipping tabular shaped mineral zones that are dominantly controlled by carbonate-rich stratigraphy and formational contacts. However, even the stratigraphically controlled mineralization is most commonly found adjacent to mineralized faults. In detail, the location of most precious metal mineralization indicates a strong structural control by the major and/or related secondary structures. Fault-vein mineralization has been found associated with major north-northwest trending west dipping structural zones at both NGM's Phoenix Mine and at the Virgin zone as well as a number of other targets at the Lewis Property

The centrally located Virgin structural zone is the most prominent northwest trending west dipping structure on the Lewis Property. The structure extends for at least eight km (five miles) from the Phoenix Mine north to Antler Peak. It juxtaposes Havallah clastics on the east with Antler sequence carbonates and clastics to the west or in the hangingwall. At the Phoenix Mine site, the Virgin structure controls the emplacement of the Virgin dike and is the conduit for later hydrothermal fluids.

Mineralization intersected to date at the Virgin Resource area is both stratigraphically and structurally controlled similar to mineralization at the Upper Fortitude Deposit in the adjacent Phoenix Mine. Mineralization has been intersected in an area approximately 750 meters (2,450 ft.) north-south by 350 meters (1,150 ft.) east-west and to a depth of 240 meters (790 ft.) and remains open to expansion in all directions.

#### **14.3.2 Estimation Domain Interpretation Methodology**

APEX used a sectional approach for the examination of the data and estimation domain interpretation. Sections were cut every 10 metres along an east-west orientation looking north, except for Lode 8, which had sections cut along an orientation of 111-291 degrees looking north-northeast. A window size of 5 metres was used for each section, which is the distance data was displayed forward and backward from the section line. For each section, the individual lodes were interpreted as 3-D polygons. The 3-D polygons were then connected to create 3-D wireframes that were cut to the 3-D topography surface.

If mineralization was not present on the next adjacent section with drilling, the interpretation was extended halfway between the two sections with drilling to close the lode. The lateral extents of the lodes were extended 40-60 m in the up- or down-dip direction from the closes drillhole. All wireframes were snapped to the drill holes to ensure the wireframe adhered to actual ore/waste.

Surficial geological interpretation maps were used to determine the spatial extent of mineralization. On-site GSV geologists provided nine cross-sections, spaced 60 metres apart, illustrating subsurface lode interpretations throughout the deposit (an example is provided as Figure 14.2). The cross-sections were hung in Micromine and helped guide the overall orientations of the lode orientations. A 3-D structural model was constructed using the surficial geology, GSV cross-sections, and drillhole data, that where appropriate, was used to guide the lode interpretation. A nominal lower cut-off grade of 0.2 g/t Au was used to define the boundary of the mineralized lodes. Internal waste was incorporated in places where the length weighted intersections were higher than the lower cut-off. In total, 16 lodes were modelled, separating the subsurface data and volumes of rock into discrete zones used for resource estimation (Figures 14.3 and Figure 14.4).

Figure 14.2. Cross section showing Virgin Resource area interpreted geology and mineralization.

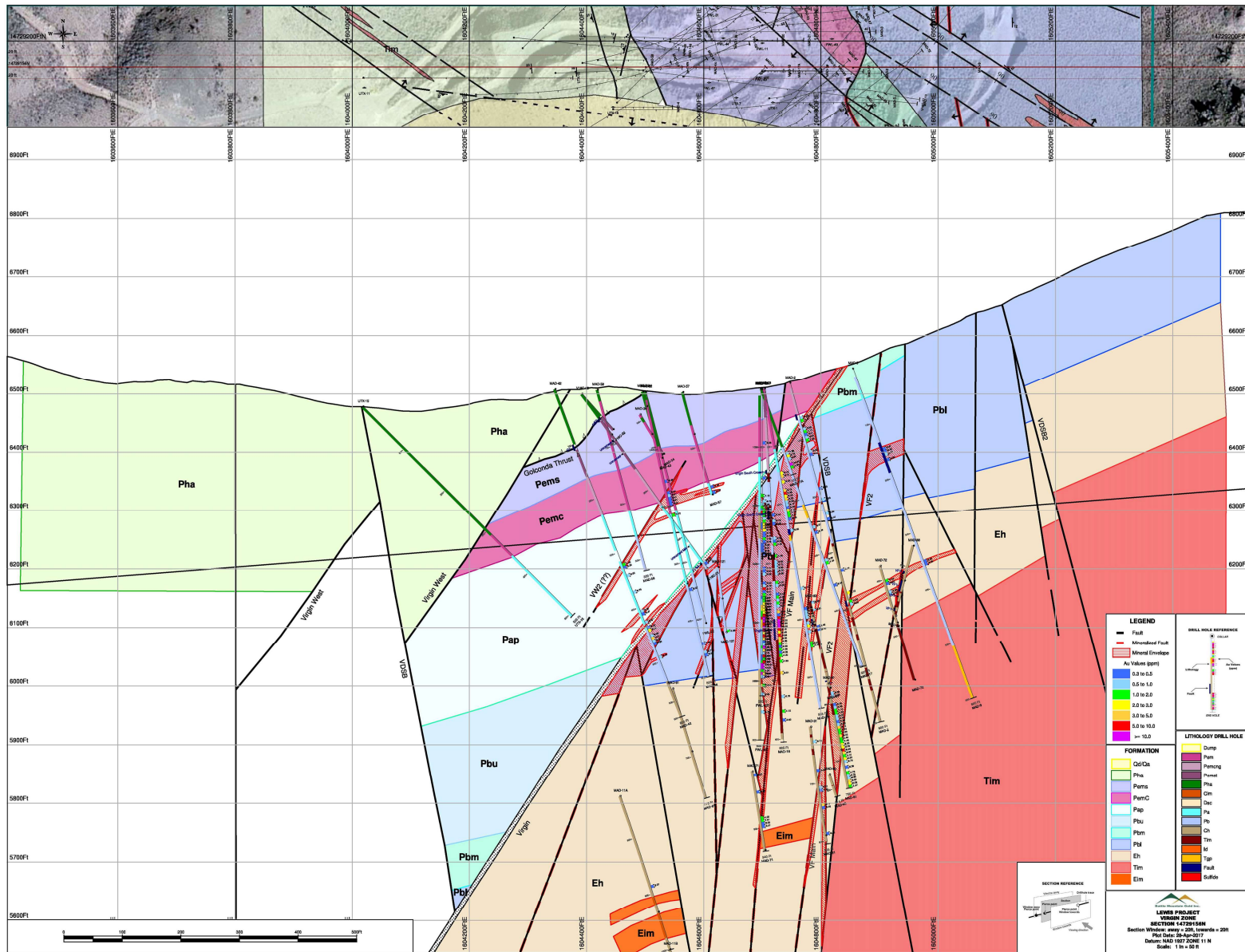


Figure 14.3. Oblique view of the sixteen interpreted lode wireframes looking northeast.

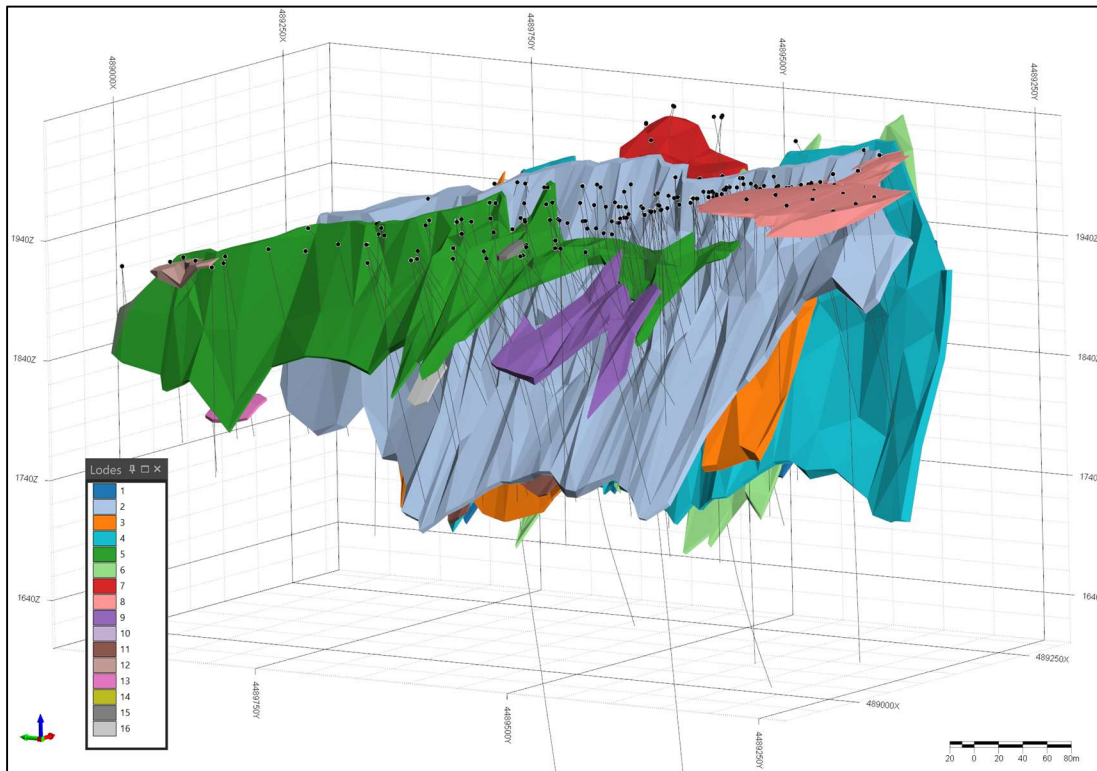
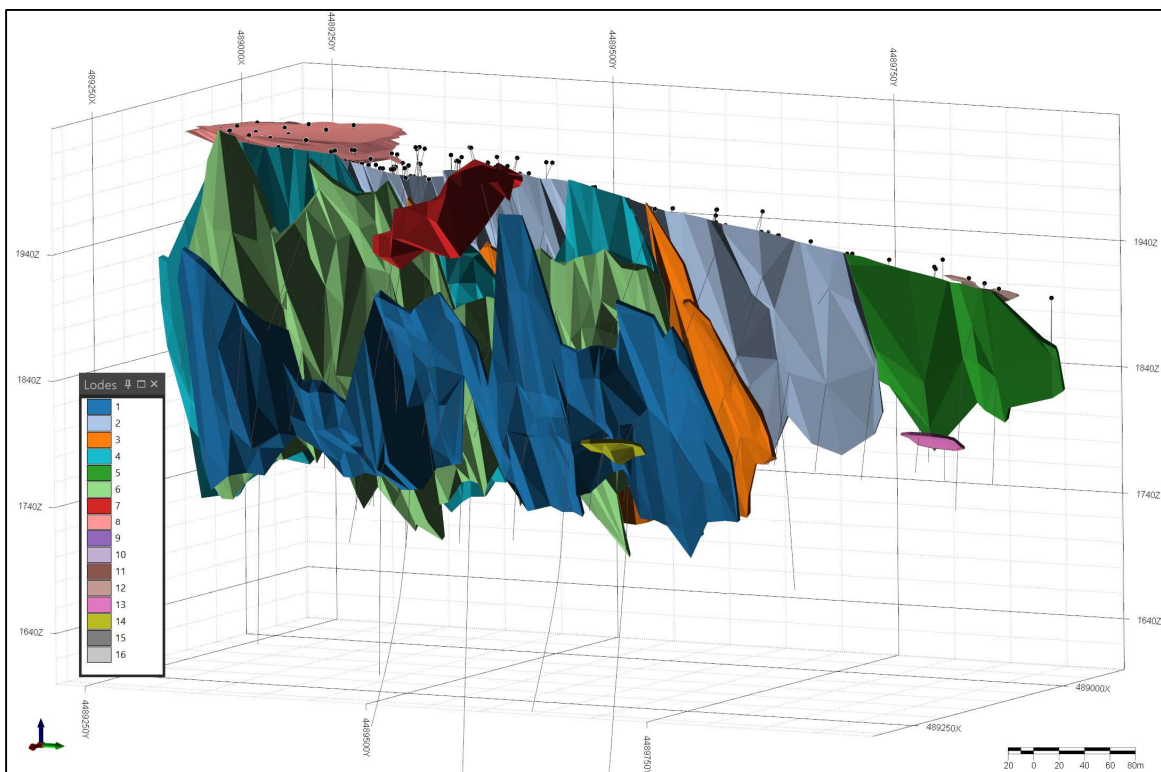


Figure 14.4. Oblique view of the sixteen interpreted lode wireframes looking southwest.





## 14.4 Exploratory Data Analysis and Compositing

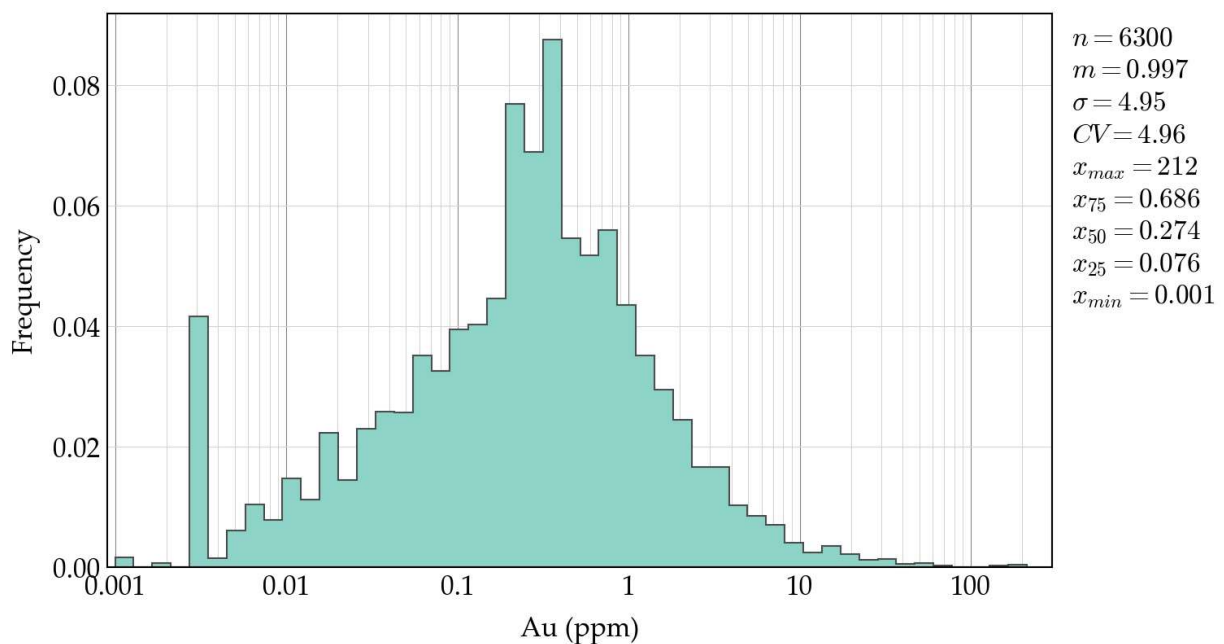
### 14.4.1 Bulk Density

APEX completed an exploratory data analysis of the available density data to determine what bulk density value to apply to the block model. The Lewis Project database contains approximately 506 density measurements, of which 464 could be located with downhole information. A total of 49 are within the estimation domains, and 415 are from waste rock. Average densities for the different formations and lithologies ranges from 2.62 to 2.70 g/cm<sup>3</sup> with an average of 2.68 g/cm<sup>3</sup>. The density measurements collected from samples within the lodes range from 1.49 g/cm<sup>3</sup> to 4.98 g/cm<sup>3</sup> with an overall average bulk density of 2.68 g/cm<sup>3</sup> with outliers removed, which was applied to all blocks for the Lewis Project mineral resource estimate.

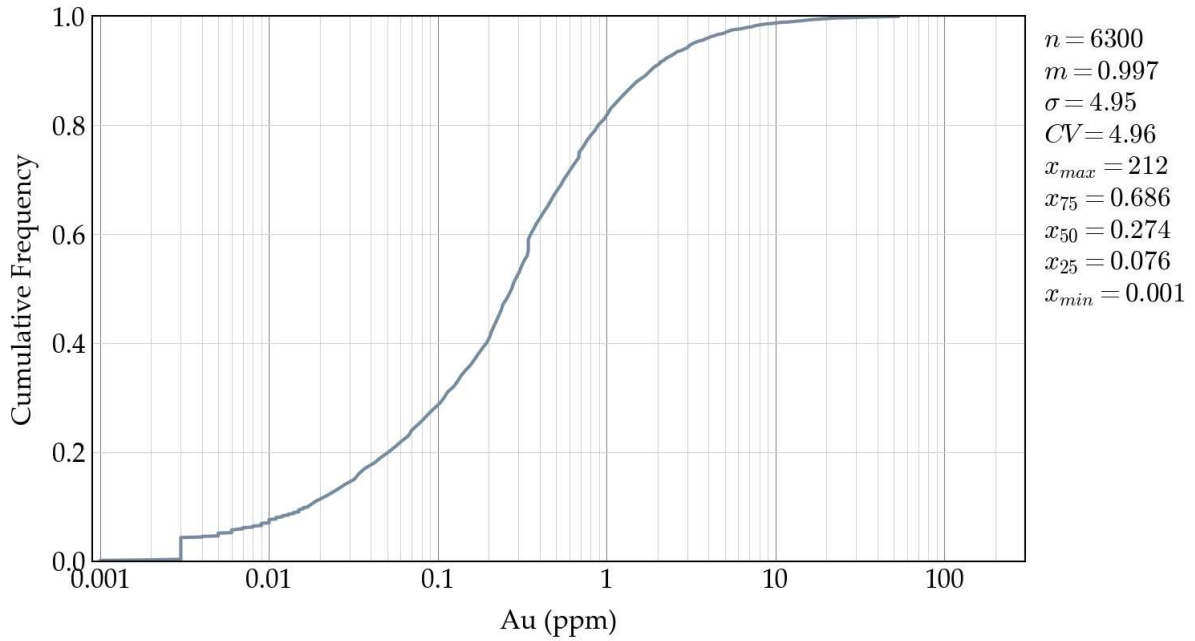
### 14.4.2 Raw Analytical Data

Histograms, cumulative histograms and summary statistics for the raw (un-composited) gold and silver assay results from sample intervals contained within the interpreted estimation domains are presented in Figures 14.5 to 14.8 and tabulated in Table 14.1. The global gold and silver assays generally exhibit a single population.

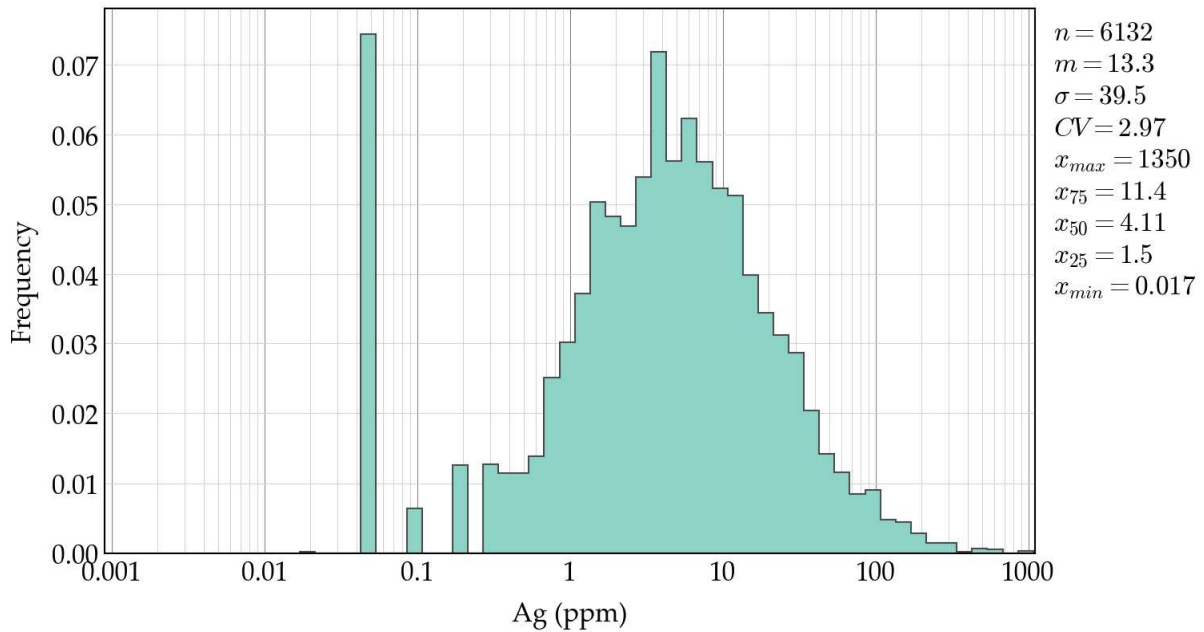
**Figure 14.5. Histogram of the raw gold assay results from sample intervals contained within the estimation domains.**



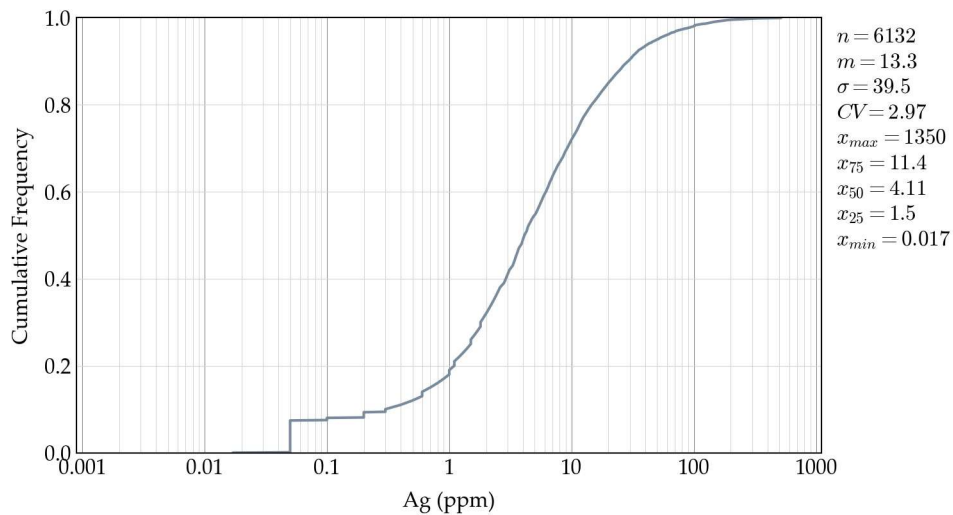
**Figure 14.6. Cumulative histogram of the raw gold assay results from sample intervals contained within the estimation domains.**



**Figure 14.7. Histogram of the raw silver assay results from sample intervals contained within the estimation domains.**



**Figure 14.8. Cumulative histogram of the raw silver assay results from sample intervals contained within the estimation domains.**



**Table 14.1. Summary statistics of global raw gold and silver assay results from sample intervals contained within the estimation domains.**

	Au (ppm)	Ag (ppm)
count	6,300	6,132
mean	0.997	13.319
std	4.947	39.468
var	24.468	1557.696
CV	4.962	2.963
min	0.001	0.017
25%	0.076	1.500
50%	0.274	4.114
75%	0.686	11.425
max	211.700	1353.800

#### 14.4.3 Compositing Methodology

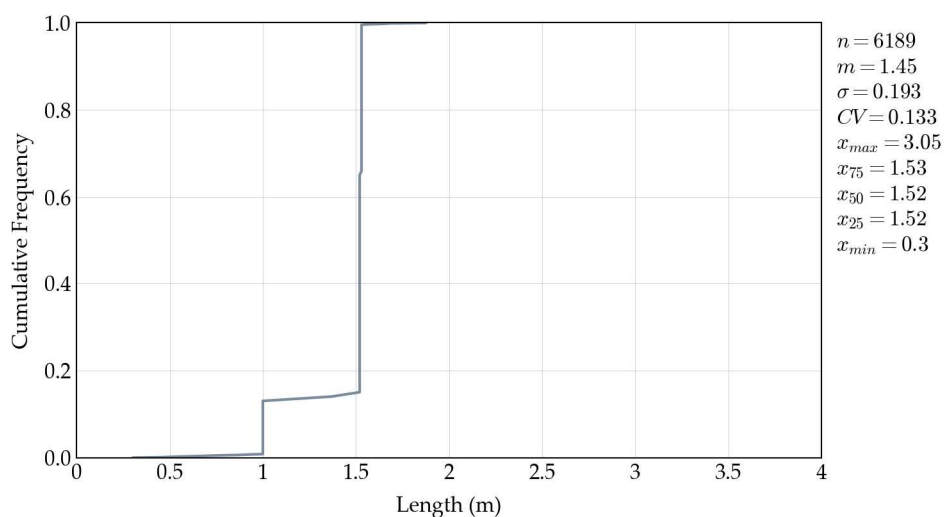
Downhole sample length analysis shows sample lengths ranged predominately from 1.00 m (3.28 ft) to 1.524 m (5.0 ft) with the dominant sample length being 1.524 m (5.0 ft). A composite length of 3.05 m (10.0 ft) is selected as it provides adequate resolution for mining purposes and is equal to, or larger in length than all of the drillhole samples (Figure 14.9, Figure 14.10).

The length-weighted compositing process starts from the drillhole collar and ends at the bottom of the hole. However, the final composite intervals along the drillhole cannot cross contacts between ore and waste or estimation domains that demonstrate a hard-

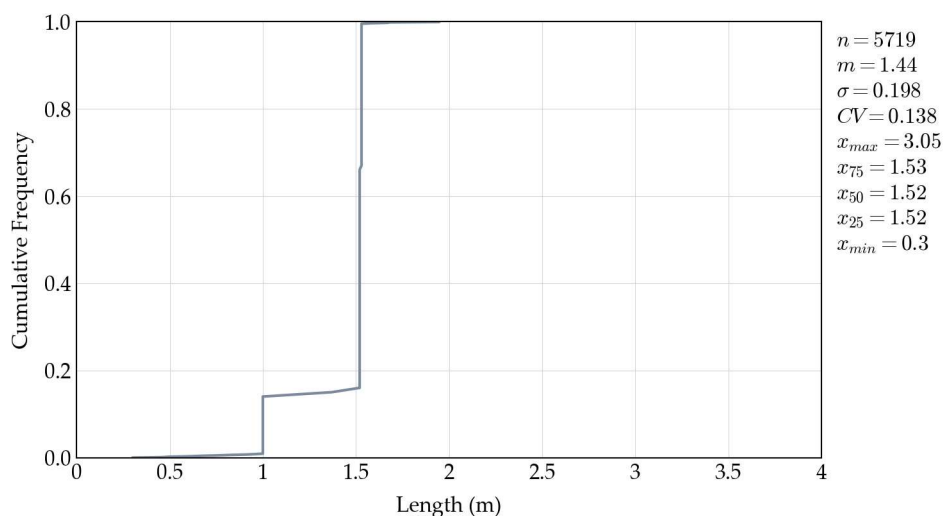
boundary. Therefore, composites extending downhole are truncated when one of these contacts are intersected. A new composite begins at these contacts and continues to extend downhole until the maximum composite interval length is reached, or another truncating contact is intersected.

There are very few instances where two estimation domains are in contact, and when this happens, the contact is treated as a hard-boundary. Therefore, the resulting composites are fully contained within their respective estimation domains or are classified as waste if they lie outside of the estimation domain wireframes.

**Figure 14.9. Cumulative histogram of the sample lengths of intervals analyzed for gold contained within the estimation domains. Intervals that were not sampled or had insufficient recovery are not considered.**



**Figure 14.10. Cumulative histogram of the sample lengths of intervals analyzed for silver contained within the estimation domains. Intervals that were not sampled or had insufficient recovery are not considered.**



#### 14.4.4 Orphan Analysis

Composites that do not reach their maximum allowed length are called orphans. Orphans are created during the truncation processes at contacts, as described in the previous section, or when a drillhole ends before the last composite reaches its final length. Considering all of the orphans during the estimation process may introduce a bias. Therefore, the gold and silver distributions are examined with and without orphans to determine if they should be deemed equivalent in importance to the estimation process as full-length composites are. Three configurations are examined for this analysis:

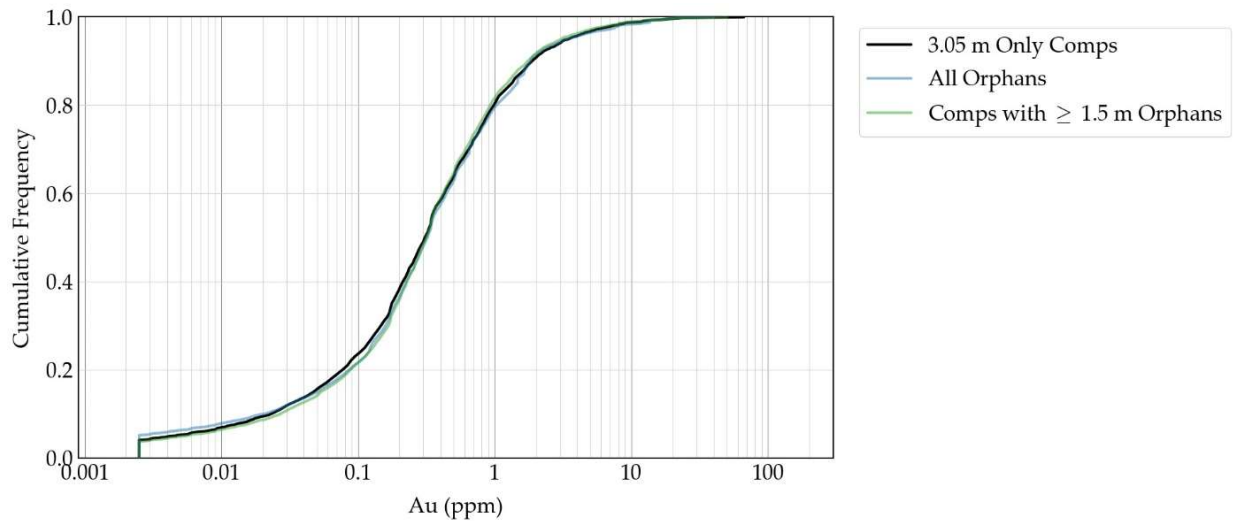
1. Composites that 3.05 m (10 ft) in length without any orphans,
2. Composites and orphans greater than or equal to 1.52 m (5 ft) in length; and
3. All composites and orphans

It is common to observe a decrease in the mean when comparing the composite values to the original raw assay statistics. This decrease in the mean is typical as large un-sampled intervals (that are assigned a nominal waste value, as discussed in Section 14.2.4) are split into multiple smaller intervals. Also, by not snapping truncating contacts of the estimation domain wireframes to the start or end of raw sample intervals, many orphans can be created that create redundant data that is not representative, which may skew the resource estimate.

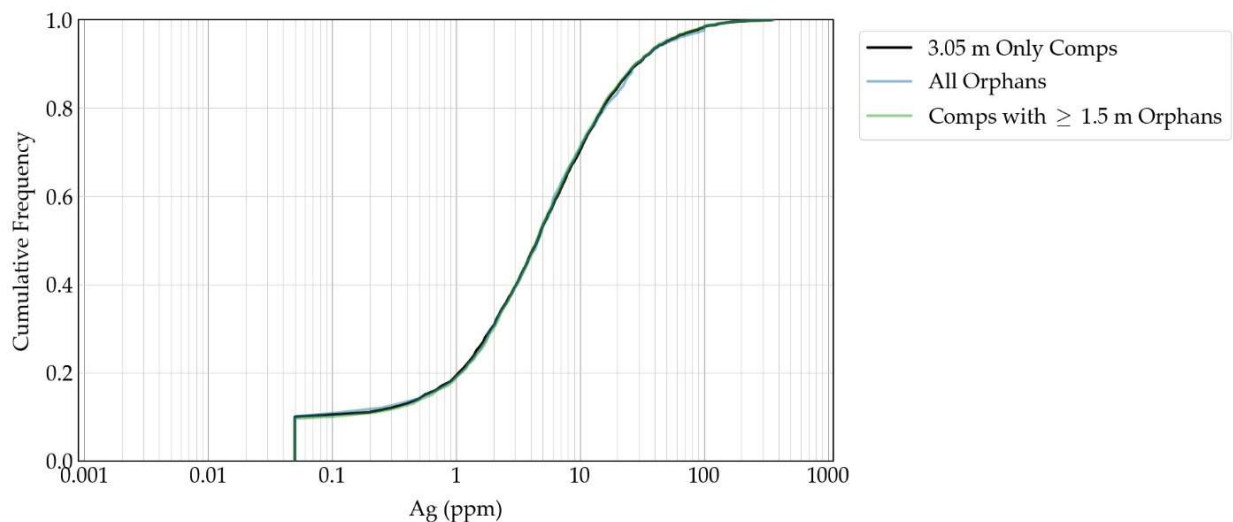
Orphan analysis for the gold composites reveals an increase in the mean of approximately 0.013 ppm Au (0.003 oz/st) when orphans are included compared to composites that are equal to 3.05 m (10 ft; Table 14.2). Figure 14.11 illustrates little difference between the distribution of composited gold grade with the various composite length scenarios. While the increase in the mean is favourable, the exclusion of orphans  $\geq 1.52$  m (5 ft; 499 samples) decreases the number of composites by 11.4 %. Their removal would significantly increase error in the calculated mineral resource; therefore, they are used when calculating the mineral resource. The 421 samples that are  $< 1.52$  m (5 ft) in length are excluded as they are considered redundant.

Orphan analysis for the silver composites reveals an increase in the mean of approximately 0.361 ppm Ag (0.011 oz/st) when orphans are included compared to composites that are equal to only 3.05 m (10 ft; Table 14.2). Figure 14.12 illustrates little difference between the distribution of composited silver grade with the various composite length scenarios. The exclusion of orphans  $\geq 1.52$  m (5 ft; 485 samples) decreases the total number of composites by 12 %, and their removal would significantly increase error in the calculated mineral resource; therefore, they are included as conditioning data. The 420 samples that are  $< 1.52$  m (5 ft) in length are excluded.

**Figure 14.11. Orphan analysis comparing cumulative gold histograms of raw assays and uncapped composites with and without orphans contained within the estimation domains.**



**Figure 14.12. Orphan analysis comparing cumulative silver histograms of raw assays and uncapped composites with and without orphans contained within the estimation domains.**



**Table 14.2. Orphan analysis comparing gold and silver summary statistics of raw assays and uncapped composites with and without orphans contained within the estimation domains.**

	Au (ppm)				Ag (ppm)			
	Raw Assays	Comps with all Orphans	3.05 m Only	Comps with $\geq 1.5$ m Orphans	Raw Assays	Comps with all Orphans	3.0 m Only	Comps with $\geq 1.5$ m Orphans
<b>count</b>	6,300	3,632	2,712	3,211	6,132	3,545	2,640	3,125
<b>mean</b>	0.997	1.045	1.032	0.959	13.319	12.966	12.605	12.520
<b>std</b>	4.947	3.906	4.276	3.955	39.468	30.662	28.787	30.961
<b>var</b>	24.468	15.259	18.285	15.639	1557.696	940.182	828.717	958.565
<b>CV</b>	4.962	3.738	4.144	4.123	2.963	2.365	2.284	2.473
<b>min</b>	0.001	0.003	0.003	0.003	0.017	0.050	0.050	0.050
<b>25%</b>	0.076	0.123	0.112	0.128	1.500	1.553	1.454	1.546
<b>50%</b>	0.274	0.322	0.309	0.317	4.114	4.600	4.529	4.450
<b>75%</b>	0.686	0.812	0.795	0.755	11.425	12.115	12.127	11.775
<b>max</b>	211.700	128.668	128.668	128.668	1353.800	750.139	662.635	750.139

#### 14.4.5 Declustering

It is typical to collect data in a manner that preferentially samples high valued areas over low valued areas. This preferential sampling is an acceptable practice; however, it produces closely spaced measurements that are likely statistically redundant, which results in sparse data being under-represented compared to the closer spaced data. It is therefore desirable to have spatially representative (i.e., declustered) statistics for global resource assessment and to check estimated models. Declustering techniques calculate a weight for each datum that results in sparse data having a higher weight than closely spaced data. The calculated declustering weights allow declustered summary statistics to be calculated, such as a declustered mean.

Cell declustering is performed globally on all composites within the estimation domains that calculates a declustering weight for each composite. Cell declustering works by discretizing a 3D volume. The sum of all weights within each cell must equal 1; therefore, the weight assigned to each composite is proportional to the number of composites within each cell. For example, if there are four composites within a cell, they are all assigned a declustering weight of 0.25.

As a general rule of thumb, the cell size used to calculate declustering weights will ideally contain one composite per cell in the sparsely sampled areas. Visual evaluation of the sparsely sampled areas in a 3D visualization software gives a rough idea of this size. Also, by calculating the distance to the nearest composite for each cell in a block model (that has a cell size that is much lower than the final declustering cell size) can help guide what the declustering cell size should be. The 90th percentile of the distance block model approximates the optimal cell size. Finally, plotting a series of declustered

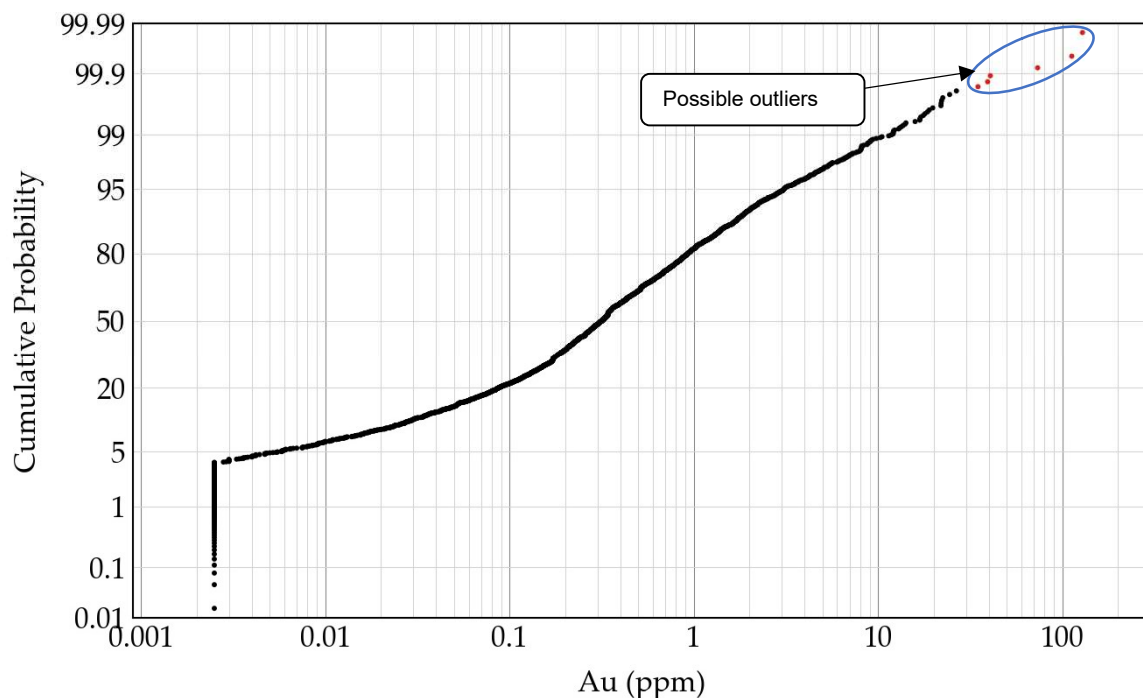
means for a range of declustering cell sizes will help determine the optimal cell size. The optimal cell size will likely be when the declustered mean in the plot is locally low or high at a cell size that is very close to the two potential cell sizes that were determined from the visual review and calculated 90th percentile distance. Preferential sampling in high-grade zones results in a declustered mean that is likely within a local minimum. In contrast, preferential sampling in low-grade zones results in a declustered mean that is likely within a local maximum.

#### 14.4.6 Capping

To ensure gold and silver grade is not overestimated by including outlier values during estimation, composites are capped to a specified maximum value. Probability plots illustrating all values are used to identify outlier values that appear higher than expected relative to the estimation domains gold composite population.

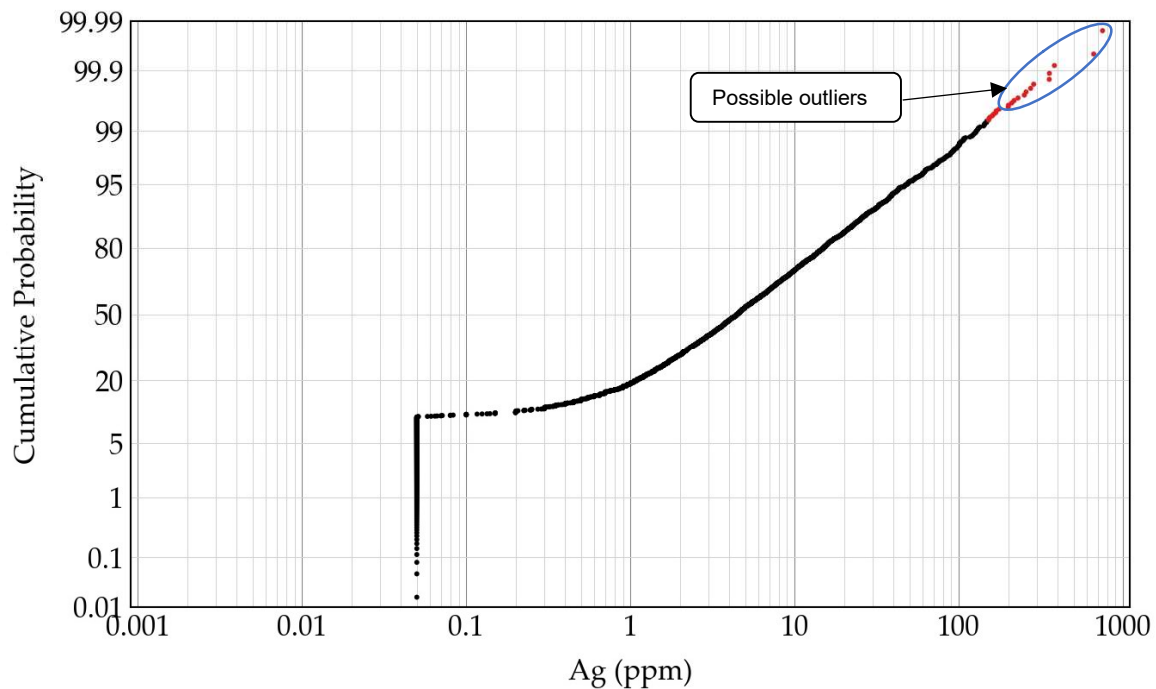
The probability plot of composited gold and silver grades (Figure 14.13 and 14.14) suggest there are 6 outlier composites that have gold values > 30.0 ppm (0.875 oz/st) and 22 outlier composites that have silver values > 200.0 ppm (8.750 oz/st). Visual inspection of the potential outliers revealed they have no spatial continuity with each other. Therefore, a capping level of 30 ppm Au and 200 ppm Ag was applied to composites used to calculate the Lewis resource estimate. The resulting gold and silver grade distribution of the capped composites is illustrated in Figures 14.15 and 14.16, with summary statistics detailed in Table 14.3.

**Figure 14.13. Probability plot of the composited gold values before capping.**





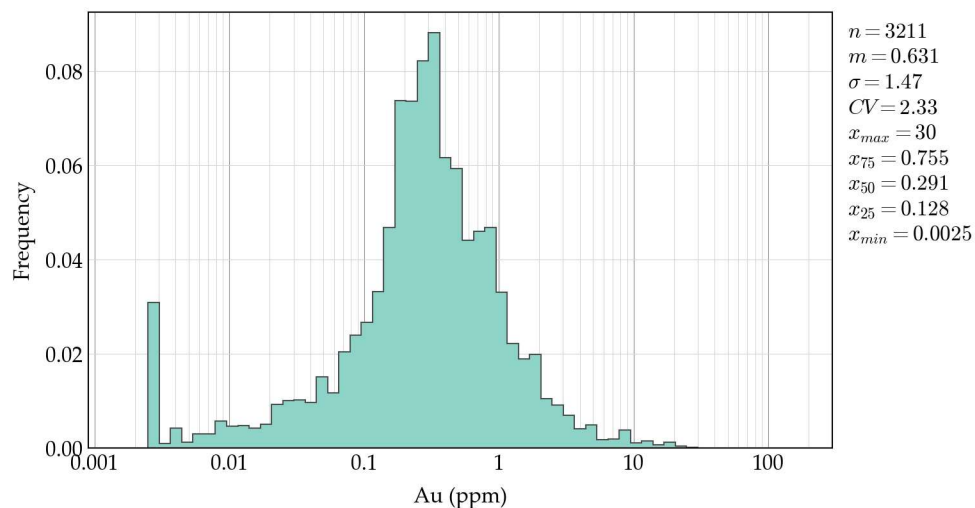
**Figure 14.14. Probability plot of the composited silver grade before capping.**



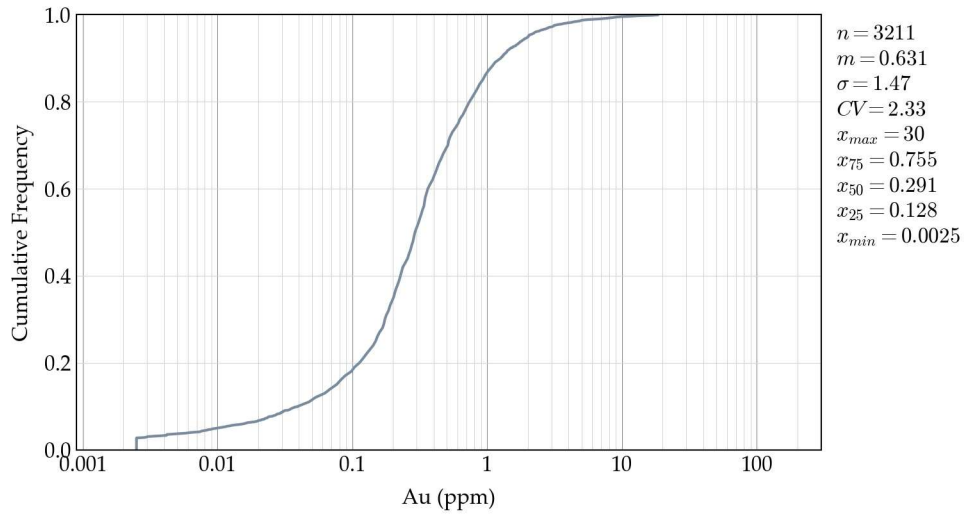
#### 14.4.7 Final Composite Statistics

Histograms, cumulative histograms and summary statistics for the final gold and silver composites used for estimation (without orphans less than 1.5 m) that are contained within the interpreted estimation domains are presented in Figures 14.15 to 14.18 and tabulated in Table 14.3. The global gold and silver assays generally exhibit a single population.

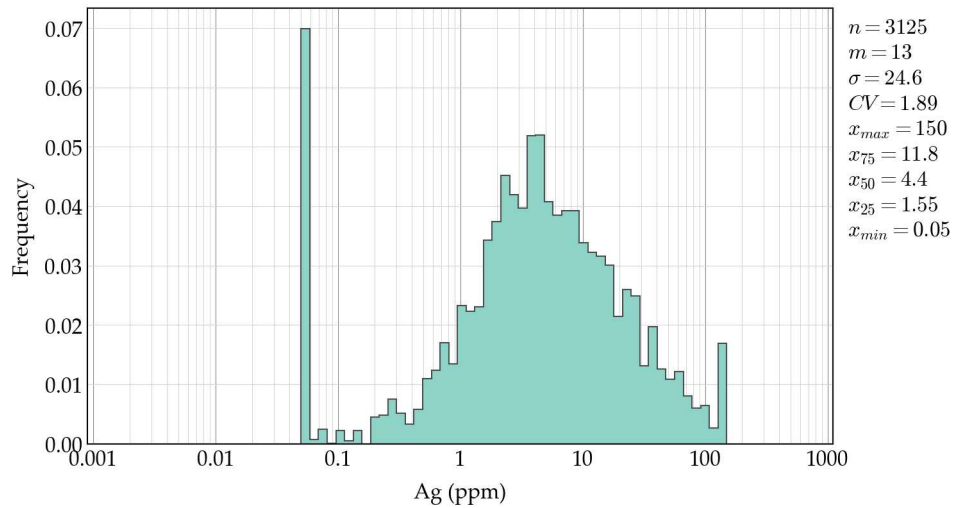
**Figure 14.15. Histogram of the capped and declustered gold composites (without orphans less than 1.5 m) contained within the estimation domains.**



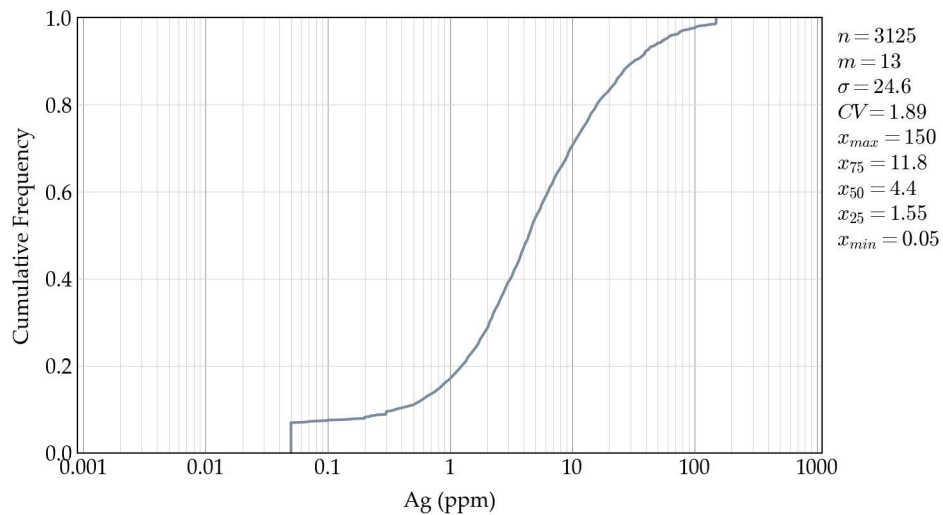
**Figure 14.16. Cumulative histogram of the capped and declustered gold composites (without orphans less than 1.5 m) contained within the estimation domains.**



**Figure 14.17. Histogram of the capped and declustered silver composites (without orphans less than 1.5 m) contained within the estimation domains.**



**Figure 14.18. Cumulative histogram of the capped and declustered silver composites (without orphans less than 1.5 m) contained within the estimation domains.**



**Table 14.3. Summary statistics of the capped and declustered silver composites (without orphans less than 1.5 m) contained within the estimation domains.**

	<b>Au (ppm)</b>	<b>Ag (ppm)</b>
count	3,211	3,125
mean	0.631	13.047
std	1.471	24.590
var	2.163	604.677
CV	2.330	1.885
min	0.003	0.050
25%	0.128	1.546
50%	0.317	4.450
75%	0.755	11.775
max	30.000	150.000

#### 14.4.8 Variography and Grade Continuity

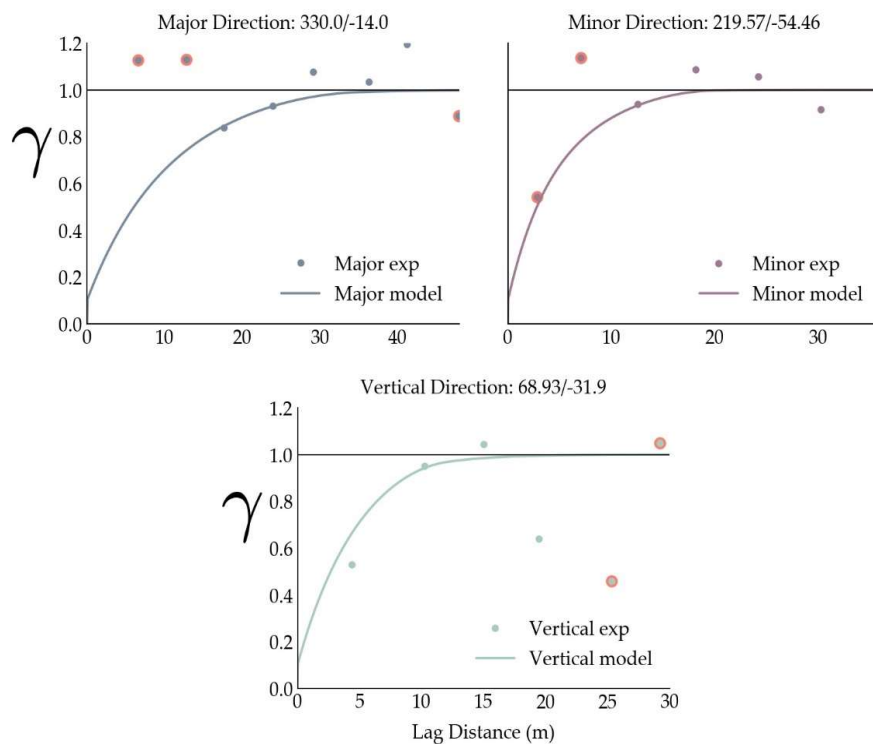
Experimental semi-variograms for each lode are calculated along the major, minor, and vertical principal directions of continuity that are defined by three Euler angles. Euler angles describe the orientation of anisotropy as a series of rotations (using a left-hand rule) that are as follows:

1. A rotation about the Z-axis (azimuth) with positive angles being clockwise rotation and negative representing counter-clockwise rotation;
2. A rotation about the X-axis (dip) with positive angles being counter-clockwise rotation and negative representing clockwise rotation; and

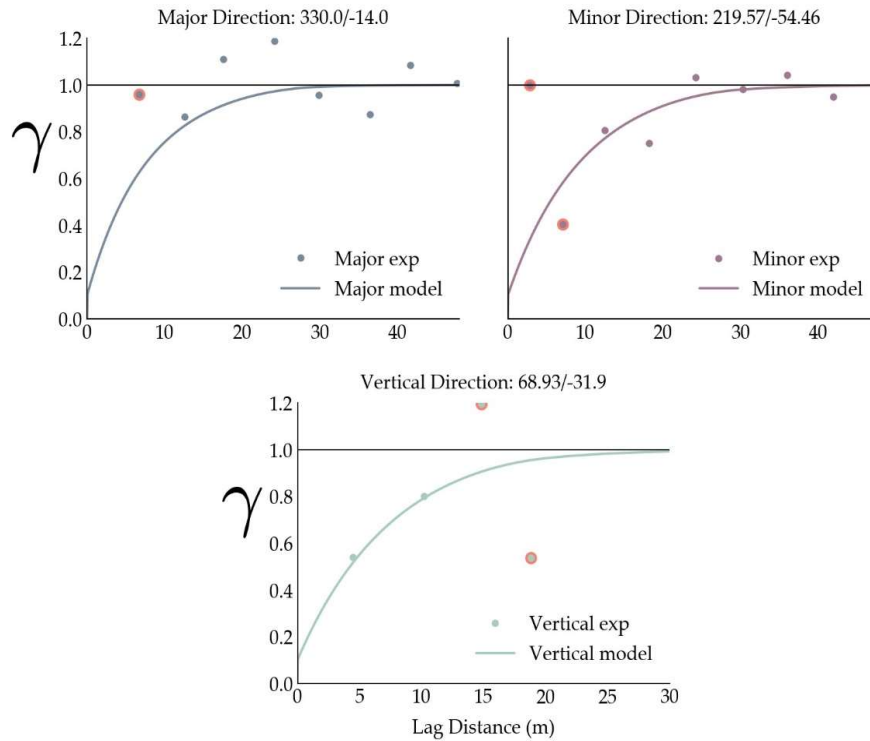
3. A rotation about the Y-axis (tilt) with positive angles being clockwise rotation and negative representing counter-clockwise rotation.

APEX calculated and modelled semi-variograms for gold using the 3.05 m (10 ft) composites within each of the estimation domains. Only lodes 2, 3, and 4 had enough composites to confidently calculate representative experimental variograms. Parameters of the modelled semi-variograms are documented in Table 14.4, and the calculated experimental semi-variogram and models used for resource estimation for the different lodes are illustrated in Figures 14.19 to 14.24. The variogram parameters used when estimating blocks in lodes 1, and 5-16 are calculated by scaling the standardized covariance contribution and nugget effect from lode 4 to each lode's respective variance. Lode 4 is selected for scaling as it has the most composites and considered the most robust variogram.

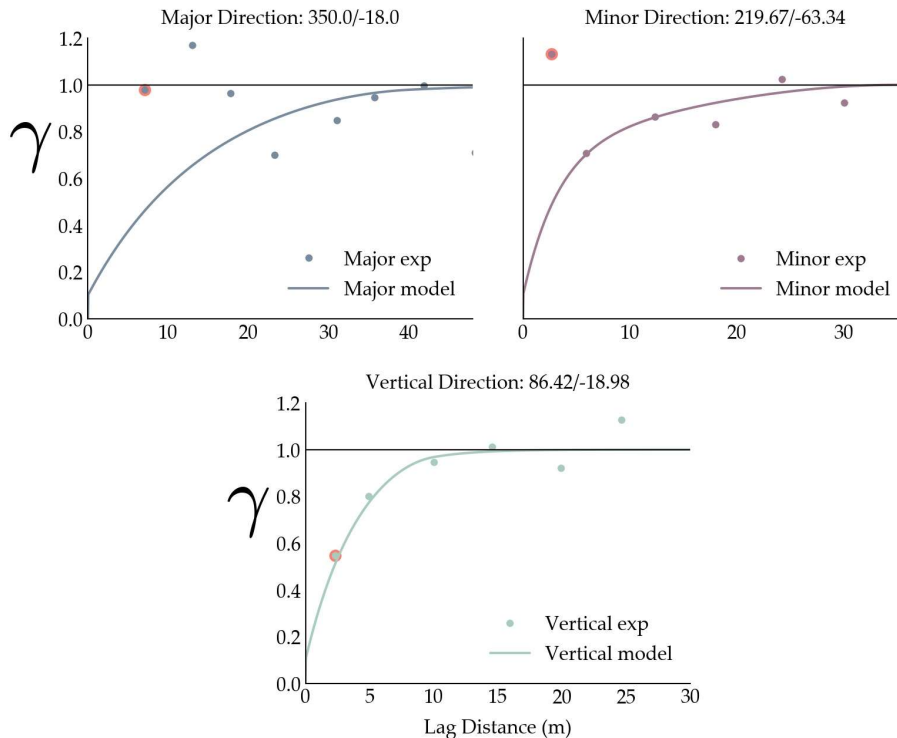
**Figure 14.19. Standardized experimental and modelled semi-variogram of gold composites in Lode 2. Dip direction and dip for each principal direction is detailed in the subplot title.**



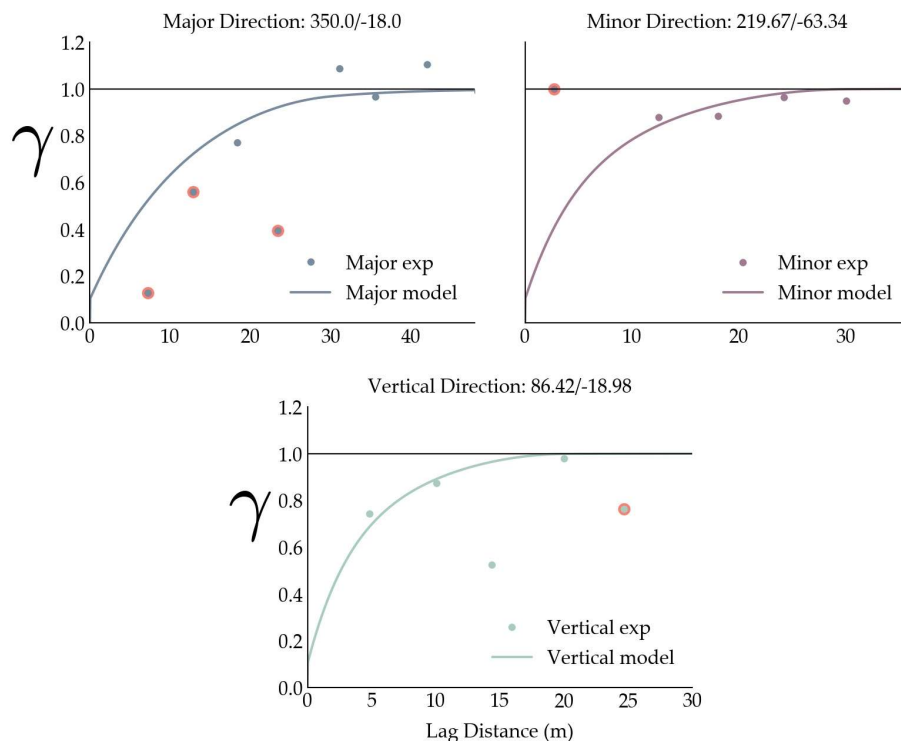
**Figure 14.20. Standardized experimental and modelled semi-variogram of silver composites in Lode 2. Dip direction and dip for each principal direction is detailed in the subplot title.**



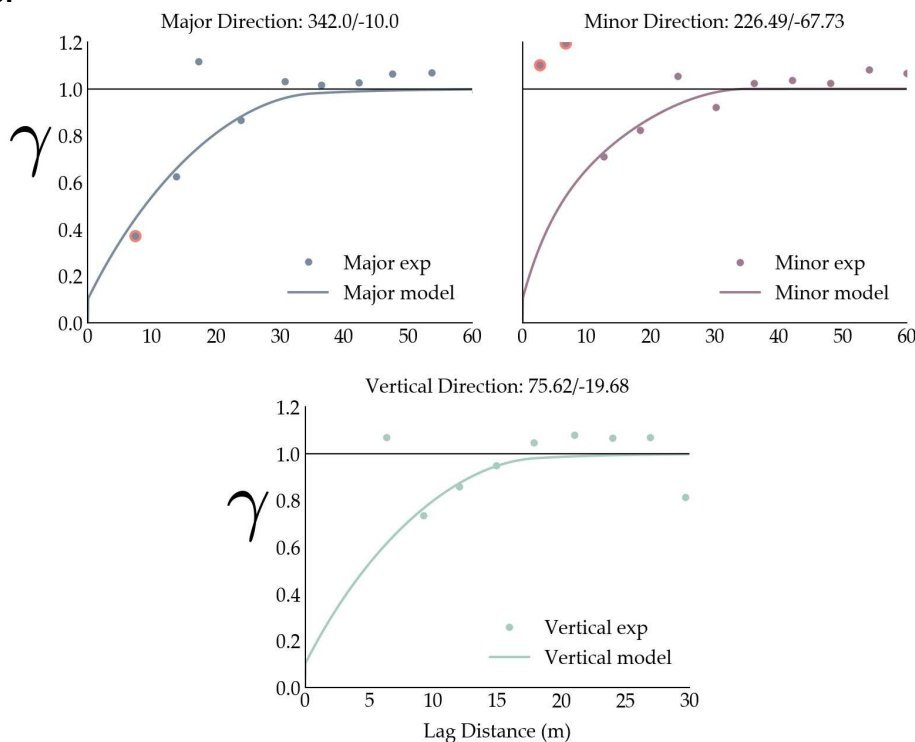
**Figure 14.21. Standardized experimental and modelled semi-variogram of gold composites in Lode 3. Dip direction and dip for each principal direction is detailed in the subplot title.**



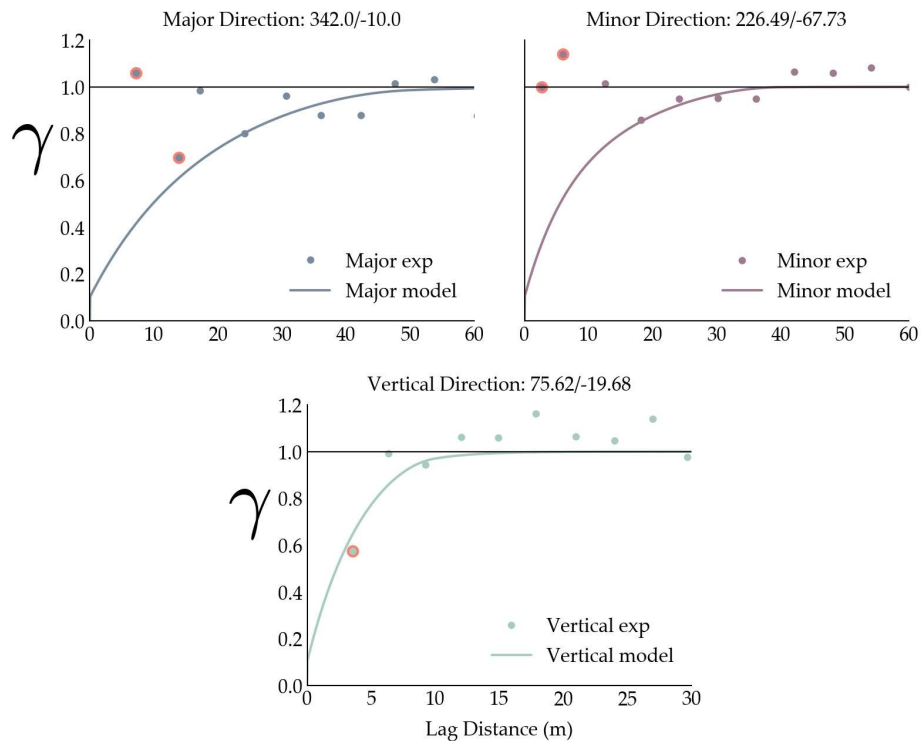
**Figure 14.22. Standardized experimental and modelled semi-variogram of silver composites in Lode 3. Dip direction and dip for each principal direction is detailed in the subplot title.**



**Figure 14.23. Standardized experimental and modelled semi-variogram of gold composites in Lode 4. Dip direction and dip for each principal direction is detailed in the subplot title.**



**Figure 14.24. Standardized experimental and modelled semi-variogram of silver composites in Lode 4. Dip direction and dip for each principal direction is detailed in the subplot title.**



**Table 14.4. Gold and silver variogram model parameters used for resource estimation (azm: azimuth, sph: spherical, exp: exponential; C0: nugget effect; C1: covariance contribution of structure 1; C2: covariance contribution of structure 2.).**

Variable	Lode	C0	Sill	Azm	Dip	Tilt	Structure 1					Structure 2				
							Type	C1	Ranges (m)			Type	C2	Ranges (m)		
									Major	Minor	Vertical			Major	Minor	Vertical
Au	2	0.21	2.13	LVA	LVA	LVA	exp	1.38	25	11	12	Sph	0.533	35	20	12
	3	0.22	2.17	LVA	LVA	LVA	exp	1.41	35	10	10	Sph	0.541	40	35	10
	4	0.54	5.37	LVA	LVA	LVA	exp	2.15	35	15	18	Sph	2.685	35	35	18
Ag	2	71.04	710.39	LVA	LVA	LVA	exp	532.79	20	25	20	Sph	106.56	30	30	20
	3	17.45	174.48	LVA	LVA	LVA	exp	113.41	30	15	10	Sph	43.62	30	30	20
	4	14.84	148.42	LVA	LVA	LVA	exp	89.05	40	20	10	Sph	44.53	50	40	10

## 14.5 Lewis Block Model

### 14.5.1 Block Model Parameters

The block model used for the calculation of the Lewis Project Mineral Resource Estimate fully encapsulates the estimation domains used for resource estimation described in Section 14.3. When determining block model parameters, data spacing is the primary consideration in addition to ensuring the volume of the 3D estimation

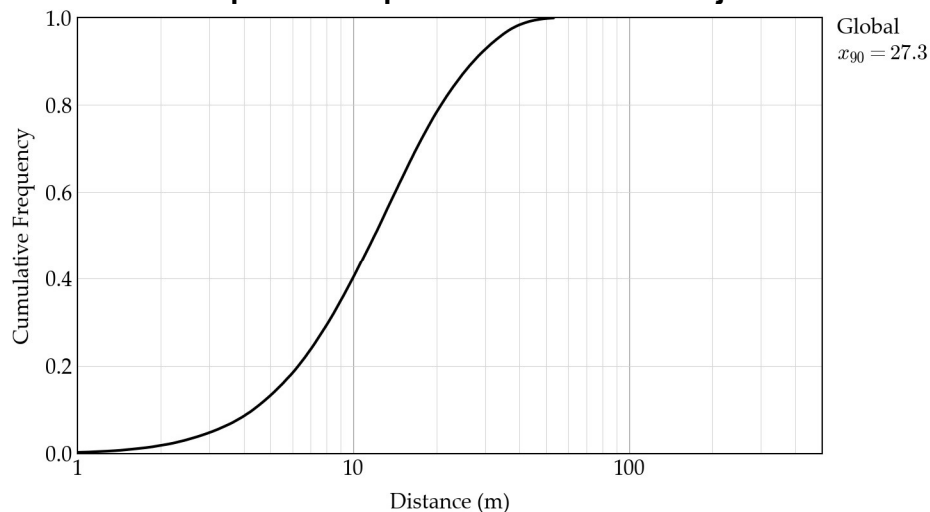
domain wireframes is reasonably reproduced while considering potential mining equipment parameters.

The data spacing of irregularly spaced drilling can be approximated by calculating the 90th percentile of a high-resolution block model of the distance from each blocks centroid to the nearest sample. Estimation errors are introduced when kriging is used to estimate a grade for blocks with a size larger than 25% of the data spacing. As illustrated in Figure 14.25, the 90th percentile is 27.3 m (89.6 ft).

The final block model is 726 m (2,382 ft) long in the North-South direction; 375 m (1,230 ft) wide in the East-West direction; and 354 m (1,161 ft) deep (Table 14.5). A block factor (BF) was calculated that represents the percentage of the volume of each block that lies within each lode. The calculated block factors are used to:

- flag what the dominant lode is for each block;
- calculate the volume of mineralized material and waste for each block; and
- calculate the tonnes of mineralized material of each block when calculating the mineral resource estimate.

**Figure 14.25. Cumulative frequency plot illustrating the distance from each block’s centroid to the nearest composite sample within the Lewis Project.**



**Table 14.5. Lewis Project block model size and extents.**

Axis	Number of Blocks	Block Size (m)	Minimum Extent (m)	Maximum Extent (m)
X (Easting)	125	3	488894.5	489269.5
Y (Northing)	242	3	4489222.5	4489948.5
Z (Elevation)	118	3	1686.5	2040.5



### 14.5.2 Volumetric Checks

A comparison of wireframe volume versus block model volume is performed to ensure there is no considerable over- or understating of tonnages (Table 14.6). The calculated block factor for each block is used to scale its volume when calculating the total volume of the block model within each lode.

**Table 14.6. Wireframe versus block-model volume comparison.**

Wireframe	Wireframe Volume (m3)	Block Model Volume with Block Factor (m3)	Volume Difference (%)
Lode 01	487,929	487,943	0.00%
Lode 02	1,025,833	1,025,629	-0.02%
Lode 03	532,775	532,686	-0.02%
Lode 04	934,462	934,376	-0.01%
Lode 05	300,993	301,144	0.05%
Lode 06	567,033	567,049	0.00%
Lode 07	225,260	225,482	0.10%
Lode 08	183,527	183,469	-0.03%
Lode 09	46,552	46,525	-0.06%
Lode 10	4,303	4,297	-0.14%
Lode 11	27,328	27,317	-0.04%
Lode 12	6,018	6,028	0.16%
Lode 13	5,036	5,035	-0.02%
Lode 14	4,119	4,123	0.11%
Lode 15	1,859	1,852	-0.36%
Lode 16	2,337	2,333	-0.19%
<b>Total</b>	<b>4,355,363</b>	<b>4,355,288</b>	<b>0.00%</b>

### 14.6 Grade Estimation Methodology

Ordinary Kriging (OK) was used to estimate gold and silver grades for the Lewis block models. Grade estimates are only calculated for blocks that contain more than 3.7% mineralized material by volume.

A three-pass method was utilized that uses three different variogram model, search ellipsoid and kriging parameter configurations (Table 14.7). Volume-variance corrections are enforced by restricting the maximum number of conditioning data to 15 and the maximum number of composites from each drillhole by 3. These restrictions are implemented to ensure the estimated models are not over smoothed, which would lead to inaccurate estimation of global tonnage and grade. These corrections cause local conditional bias but ensure the global estimate of grade and tonnes is accurately estimated.

Estimation of blocks is completed with locally varying anisotropy (LVA), which uses different rotation angles to define the principal directions of the variogram model and search ellipsoid on a per-block basis. Blocks within the estimation domain are assigned rotation angles using a trend surface wireframe. This method allows structural complexities to be reproduced in the estimated block model. Variogram and search ranges are defined by the variogram model described in Section 14.4.8.

There are a few instances where inflections in the lode wireframes created areas that required large search ellipsoids to capture enough data for a block to be estimated. Because the lode wireframes do not extend unreasonably from drillhole data, the large search ellipsoids required to ensure these blocks receive an estimate does not represent the distance of these blocks from drillholes data. The need for so many passes is an artifact of using trend surfaces that assign a search ellipsoid orientation that is parallel to the tangent of the inflection point of bends in the lode wireframes. While not ideal, the benefit of using LVA far outweighs this issue. Future iterations of the 3D lode wireframes that consider the downstream use of LVA will help reduce this issue.

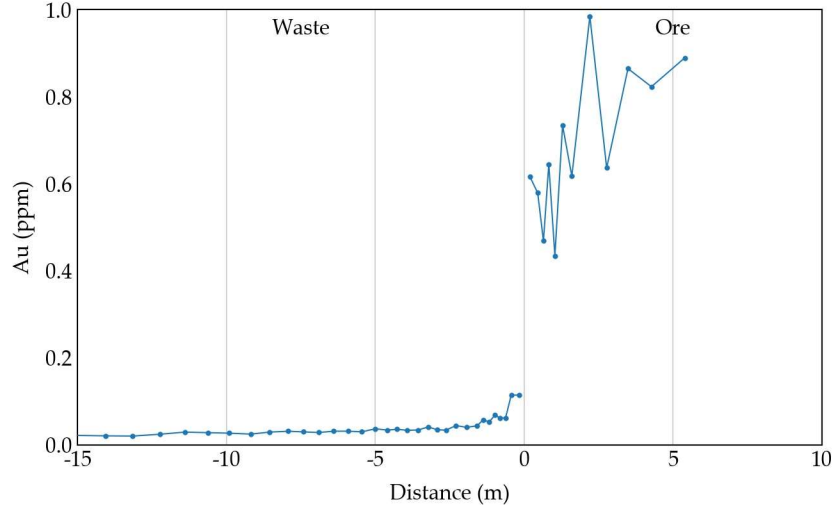
**Table 14.7. Estimation search and kriging parameters (LV – locally varying).**

Pass	Lode(s)	Variogram and Search Orientations (Dip Dir/Dip)			Max Variogram and Search Range			Min No. Holes	Max Comps Per Hole	Min No. Comps	Max No. Comps
		Major	Minor	Vertical	Major	Minor	Vertical				
1	1, 4-12	LV	LV	LV	35	35	18	1	3	1	15
	2	LV	LV	LV	35	20	12	1	3	1	15
	3	LV	LV	LV	40	35	10	1	3	1	15
2	1, 4-12	LV	LV	LV	70	70	36	1	3	1	15
	2	LV	LV	LV	70	40	24	1	3	1	15
	3	LV	LV	LV	80	70	20	1	3	1	15
3	1, 4-12	LV	LV	LV	102	105	54	1	3	1	15
	2	LV	LV	LV	105	60	36	1	3	1	15
	3	LV	LV	LV	120	105	30	1	3	1	15

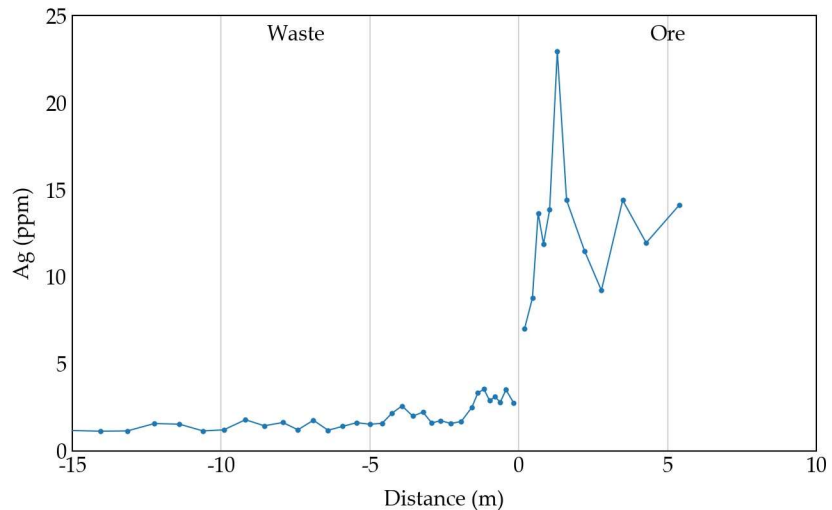
If possible, the final block model should reproduce the mineralization profile observed at the ore-waste contact in the drillhole data. Estimating a waste value for blocks that lie on the contact, which are not entirely within the estimation domains, can help reproduce the mineralization profile. By diluting blocks that contain more than or equal to 3.7% waste by volume using the volume-weight average of the estimated waste and ore values, the contact profile of the diluted block model can better reproduce the mineralization profile observed in the drillhole data. As illustrated in Figures 14.26 and 14.27, gold and silver behave in a statistically hard to semi-hard manner, where the grade of the composite centroids flagged within the estimation domains trends down as the contact is approached, but abruptly transitions from mineralized to waste grades at the contact. Therefore, the only composites used to

estimate the waste value for blocks must be within the waste rock and within 20 m of the ore/waste contact.

**Figure 14.26. Contact analysis of gold grade at the boundary between the estimation domains and waste.**



**Figure 14.27. Contact analysis of silver grade at the boundary between the estimation domains and waste.**



## 14.7 Model Validation

### 14.7.1 Visual Validation

The block model was visually validated in plan view and in cross-section to compare the estimated gold and silver grades versus the conditioning composites. Overall the model compares well with the composites. There is some local over- and under-estimation observed. Due to the limited number of conditioning data available for the estimation in those areas, this is an expected result. Overall, the estimated block values compare well with the composite gold and silver grades (Figures 14.28-14.31).

Figure 14.28. Cross-section along 4489350N illustrating the gold estimated block model and estimation domains.

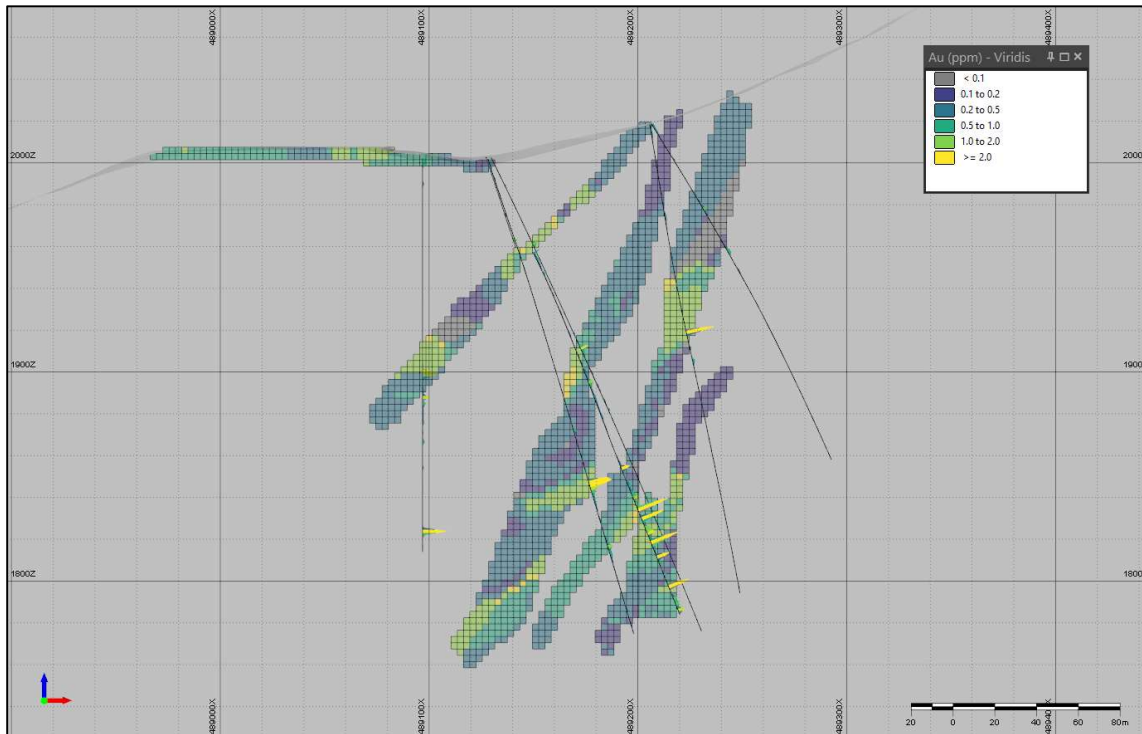


Figure 14.29. Cross-section along 4489500N illustrating the gold estimated block model and the estimation domains.

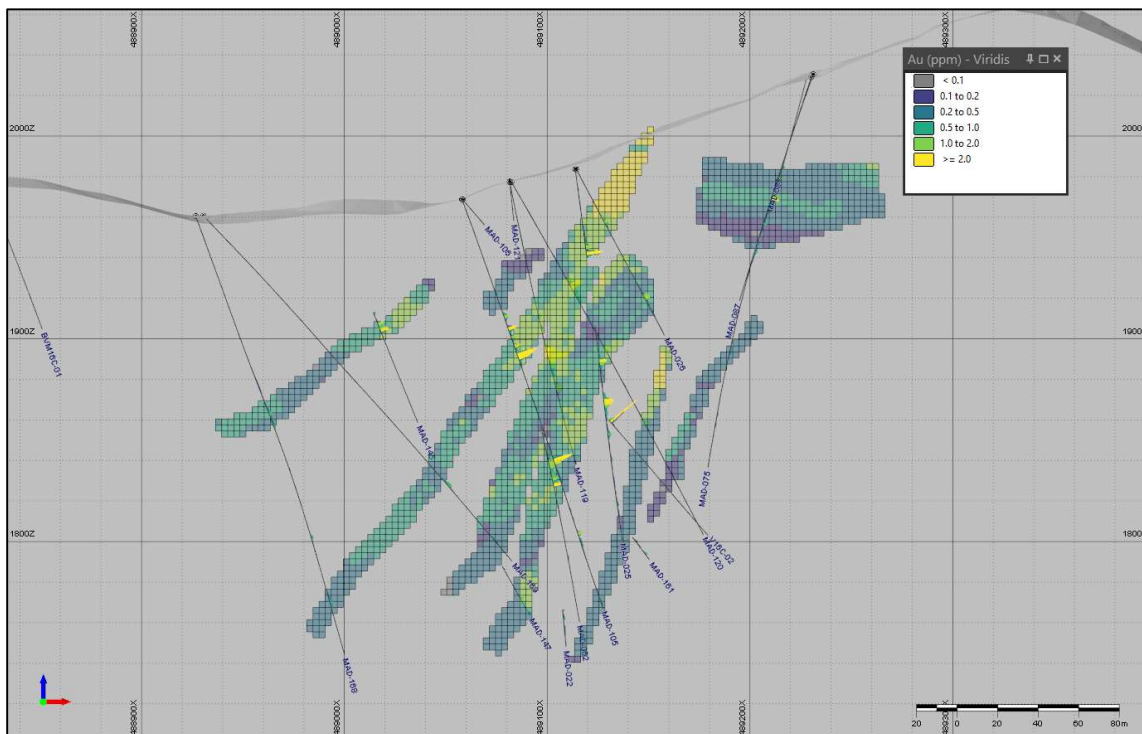


Figure 14.30. Cross-section along 4489350N illustrating the silver estimated block model and the estimation domains.

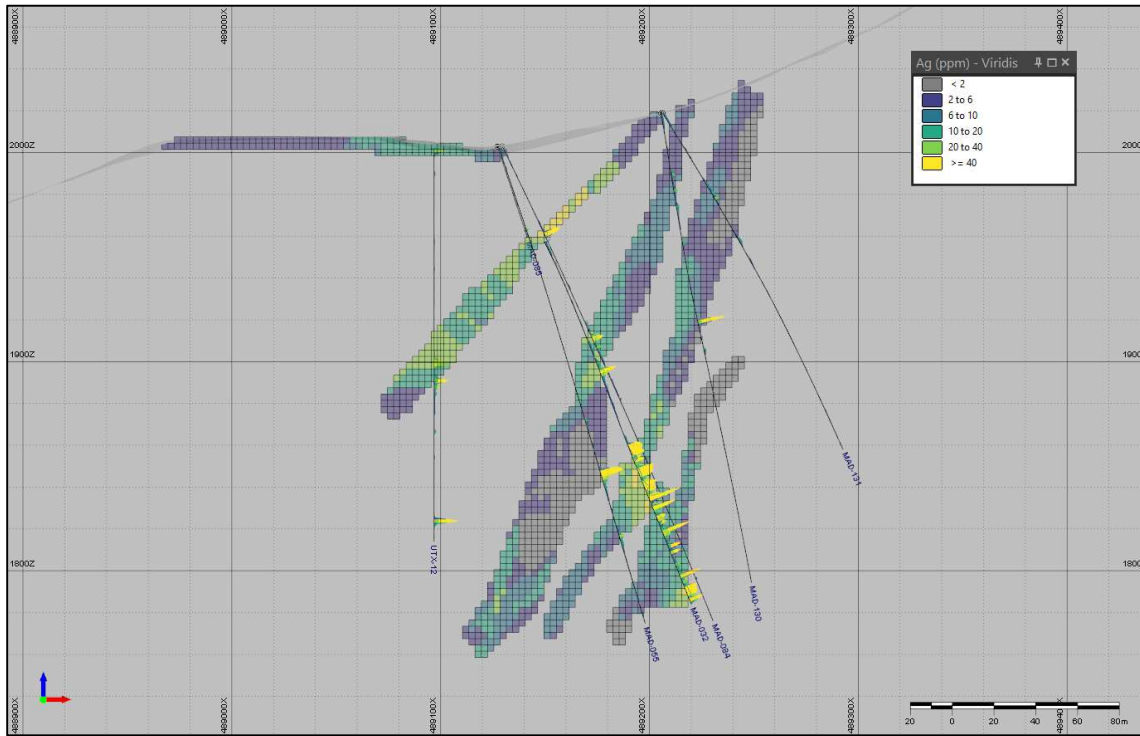
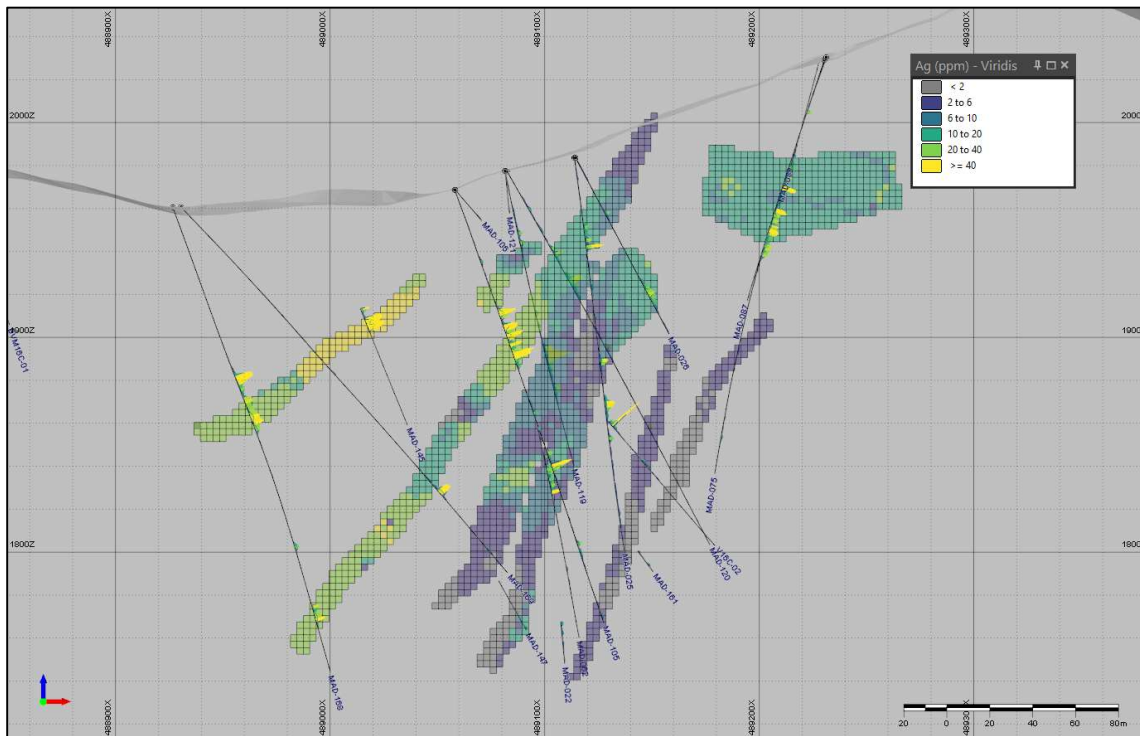


Figure 14.31. Cross-section along 4489500N illustrating the silver estimated block model and the estimation domains.



### **14.7.2 Statistical Validation**

Swath plots are used to verify that directional trends are honoured in the estimated block model and to identify potential areas of over- or under-estimation. They are generated by calculating the average gold and silver grades of composites and estimated block models within directional slices. A window of 80 m (459 ft) used in east-west slices, 80 m (1,148 ft) in north-south slices, and 40 m (984 ft) in vertical slices.

Swath plots for the gold and silver estimates are illustrated in Figures 14.32 and 14.33, respectively. There are minor instances of localized over- and under-estimation; however, it is believed to be a product of a lack of conditioning data in those areas and the smoothing effect of kriging. Overall, the block model adequately reproduces the trends observed in both metals' composites in all three directions.

As described in Section 14.6, volume-variance corrections are used to ensure the estimated models are not over-smoothed, which would lead to inaccurate estimation of global tonnage and grade. To verify that the correct level of smoothing is achieved, theoretical histograms that indicate the anticipated variance and distribution of gold and silver grades at the selected block model size are calculated and plotted against estimated final block model in Figures 14.34 and 14.35, respectively. Some smoothing is observed; however, further restrictions to the estimation search strategy would result in an unacceptable increase in estimation error.

As described in Section 14.11.1, blocks within the block model that contain more than or equal to 1.56% waste by volume are diluted using the estimated waste gold/silver and ore gold/silver values. Ideally, the nature of mineralization at the ore/waste contact observed in the composites is reproduced in the block model. Contact analysis plots checking contact profile reproduction for the Lewis model are illustrated in Figures 14.36 and 14.37, respectively.

## **14.8 Mineral Resource Classification**

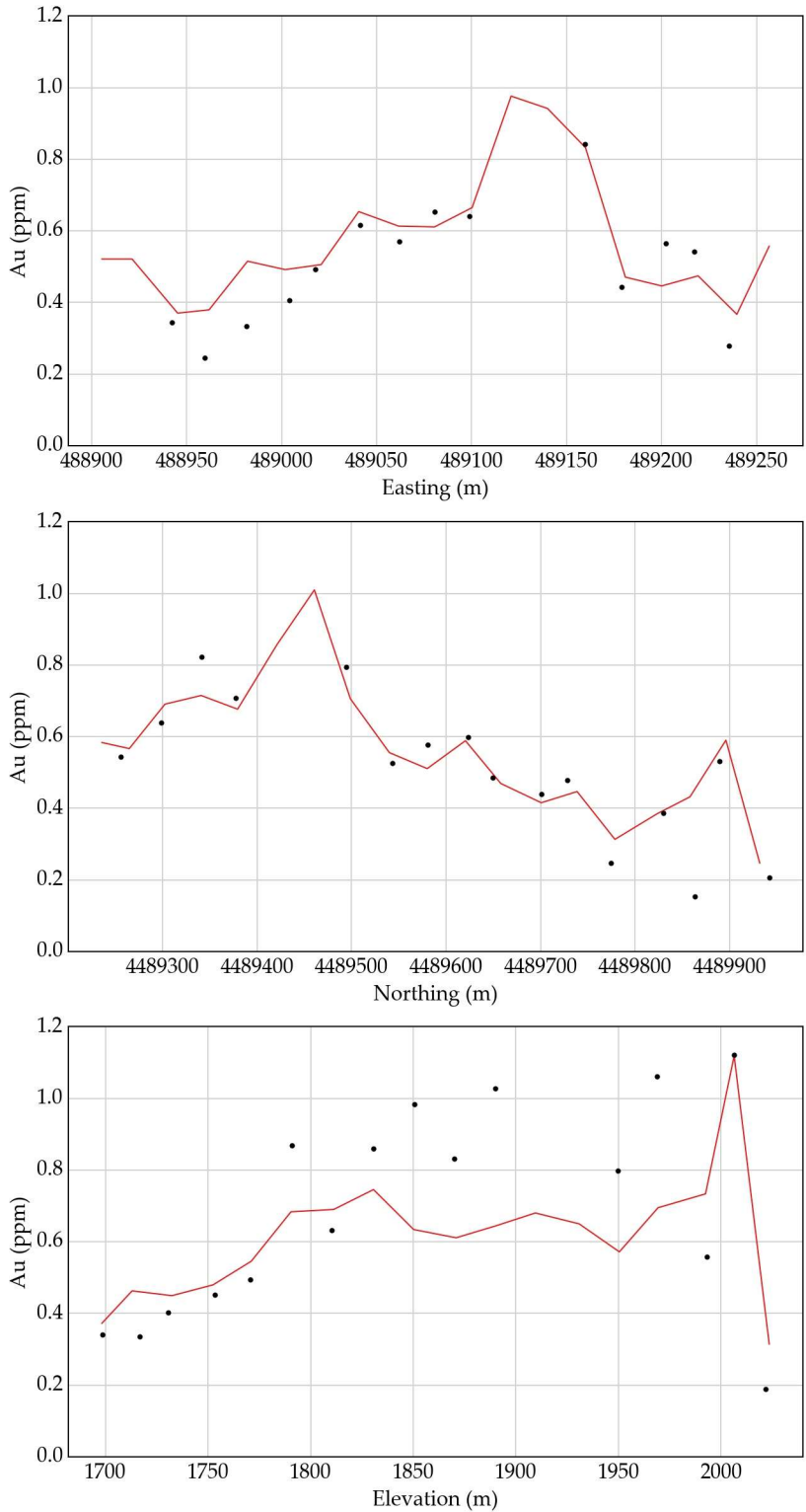
### **14.8.1 Classification Methodology**

The Lewis Project mineral resource estimate discussed in this report has been classified in accordance with guidelines established by the CIM "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines" dated November 29, 2019 and CIM "Definition Standards for Mineral Resources and Mineral Reserves" dated May 14th, 2014.

A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques

from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough to confirm both geological and grade continuity.

**Figure 14.32. Swath plots comparing composite versus estimate gold grade block model.**



**Figure 14.33. Swath plots comparing composite versus estimate silver grade block model.**

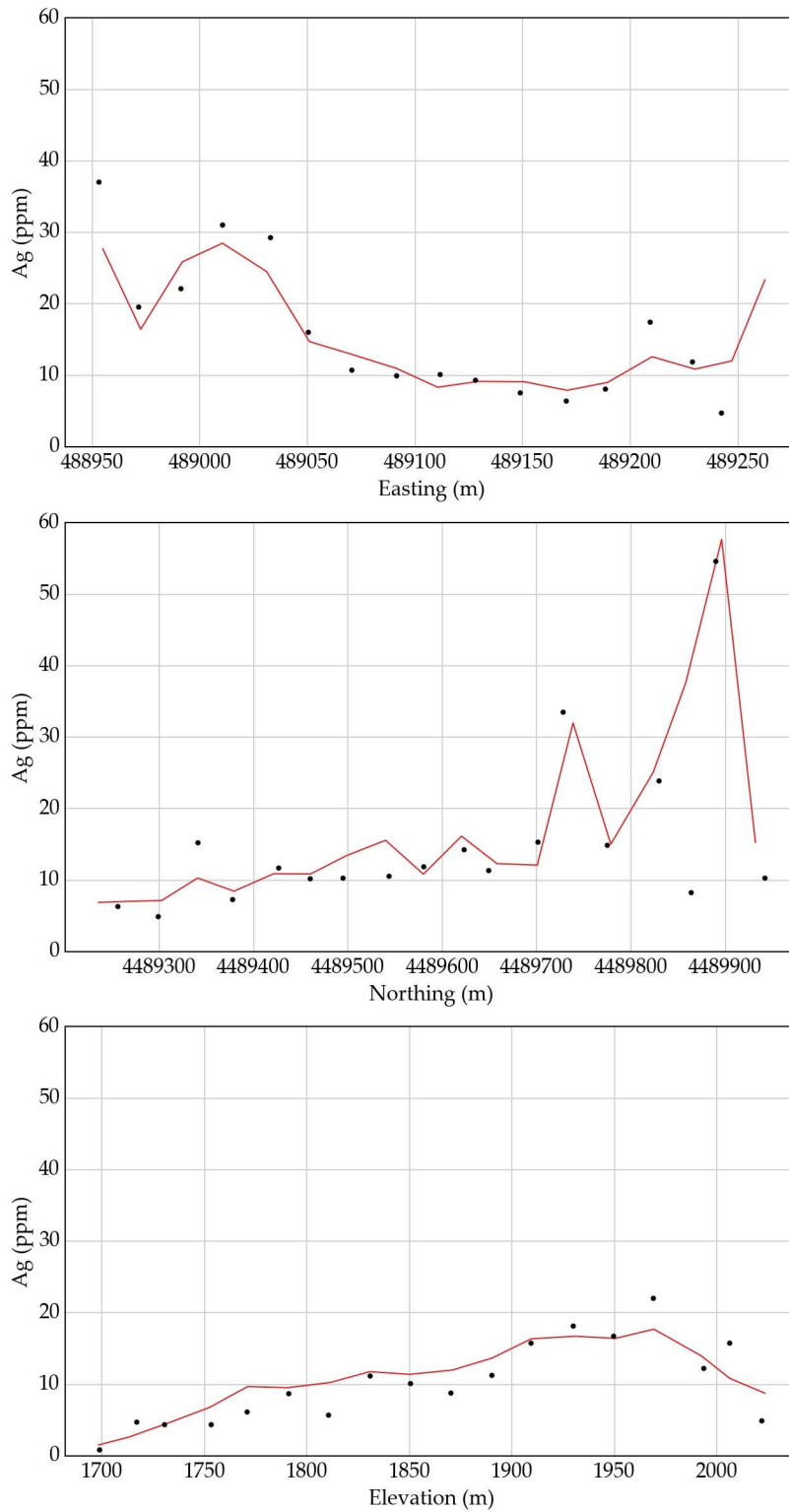




Figure 14.34. Volume variance check of the calculated gold block model.

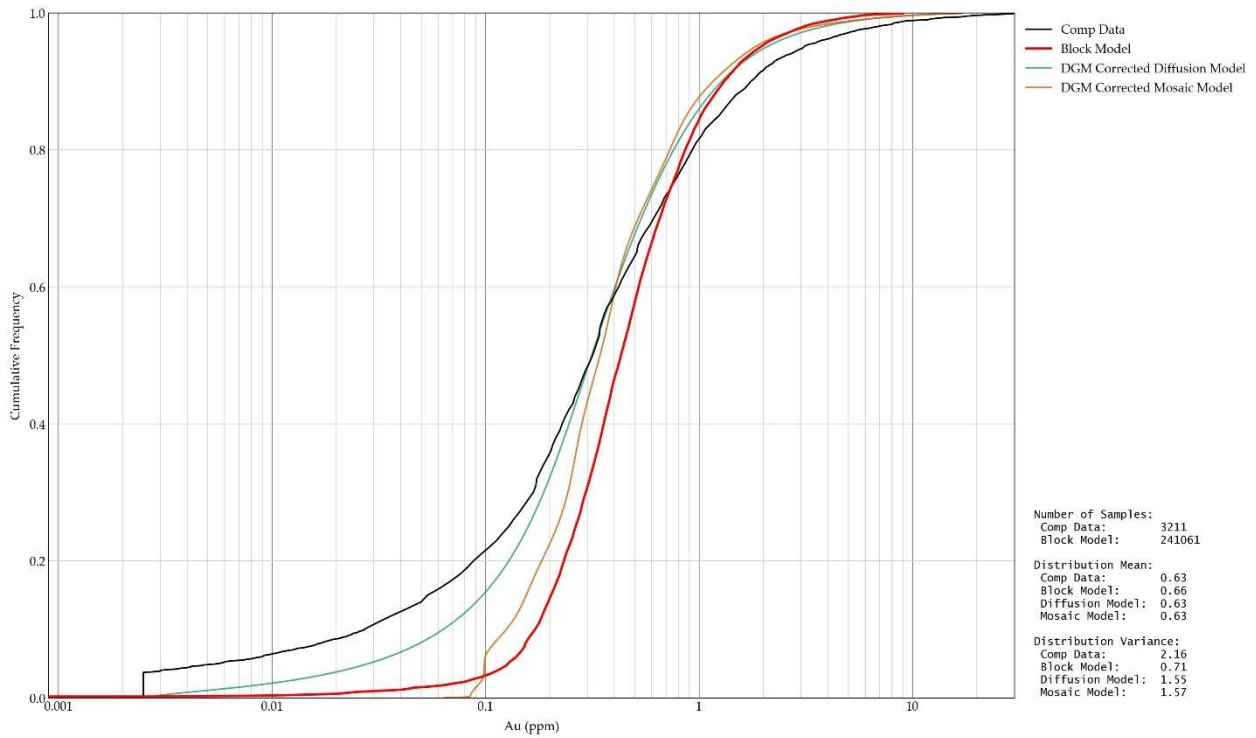
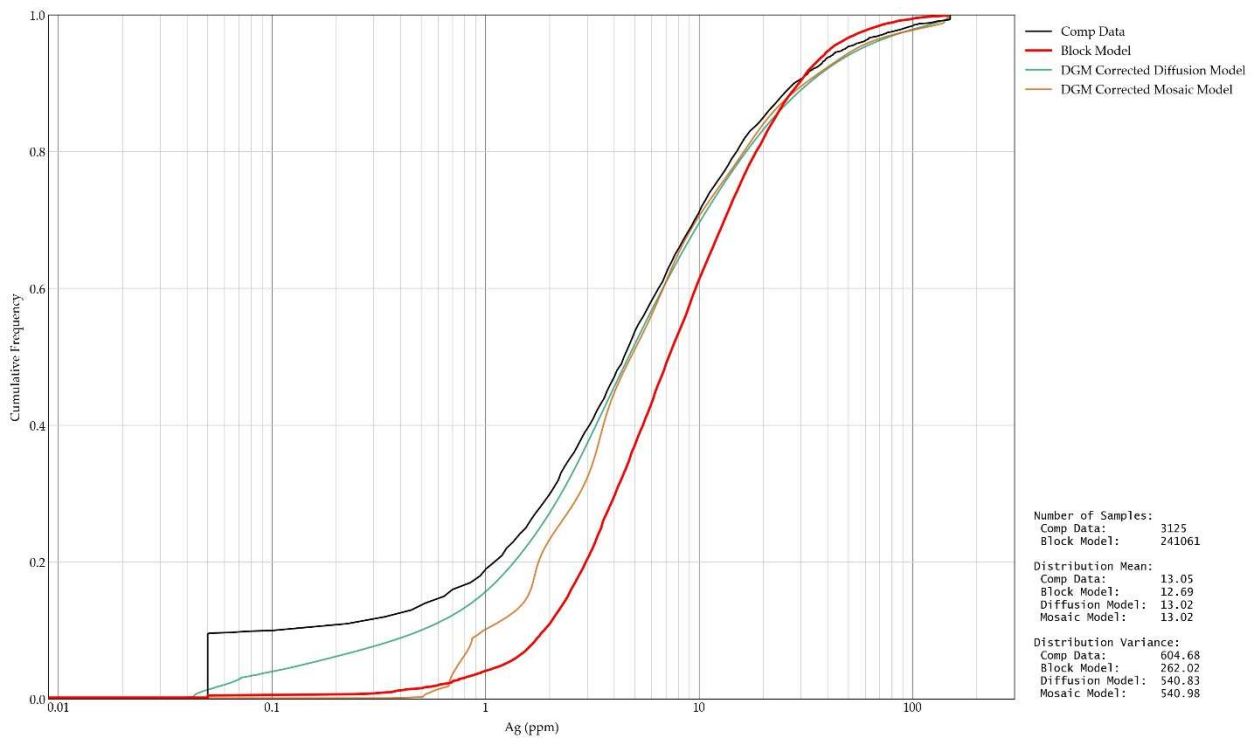
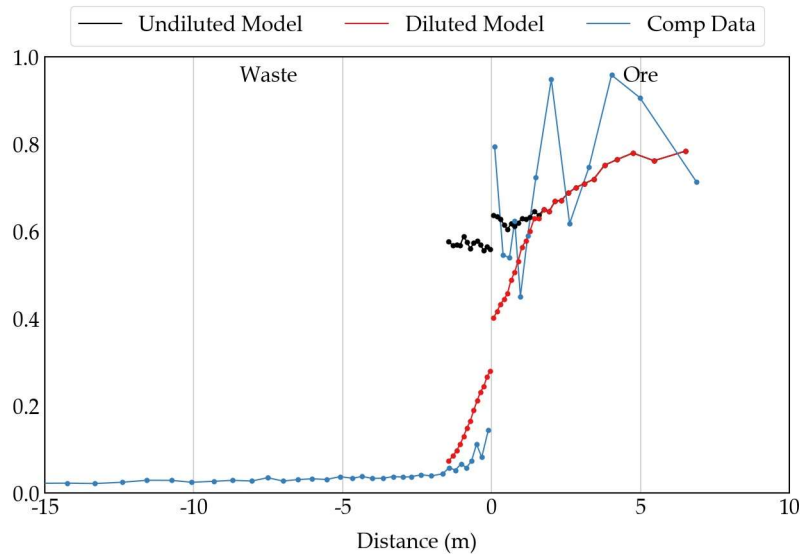


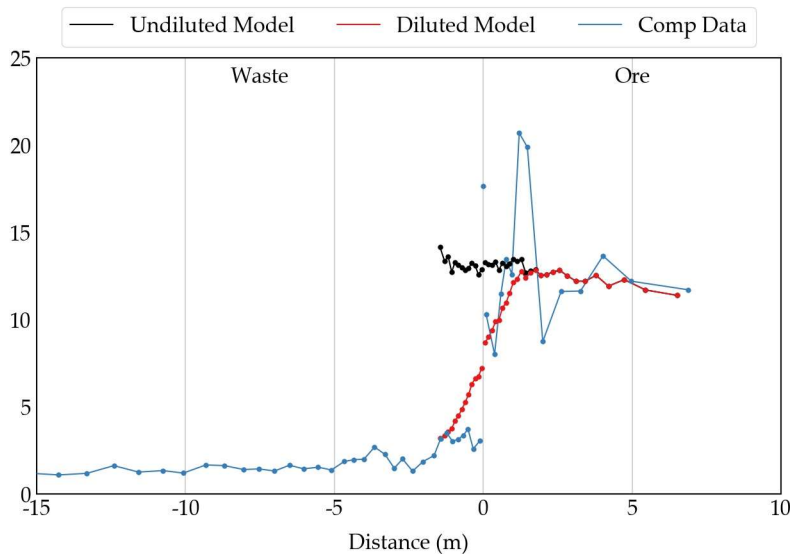
Figure 14.35. Volume variance check of the calculated silver block model.



**Figure 14.36. Contact analysis comparing the composites and diluted block model gold grade at the boundary between the estimation domains and waste.**



**Figure 14.37. Contact analysis comparing the composites and diluted block model silver grade at the boundary between the estimation domains and waste.**



An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes.

The 2020 Lewis Project Maiden Mineral Resource Estimate is classified as an Inferred Resource according to the CIM definition standards. The classification of the Lewis Resource does not include Indicated or Measured resources as it does not have:

- sufficient data density for a number of the interpreted and modelled zones;
- high enough confidence in the geological interpretation including the modelled zones, density, oxidation and metallurgical profile; and
- high enough confidence in the areas of historical drilling with a lack of downhole surveys to understand hole deviation.

#### 14.9 Evaluation of Reasonable Prospects for Eventual Economic Extraction

To demonstrate whether the Lewis Project may have the potential for eventual future economic extraction, the unconstrained resource block model was diluted and subjected to several whittle pit optimization scenarios. The criteria used in the Whittle pit optimizer were considered reasonable for Nevada precious metal deposits. Heap leach only, to combination heap leach, gravity, flotation and tank leach methods were examined strictly for the purposes of establishing a reasonable pit shell and evaluating prospects for eventual economic extraction. All mineral resources reported below are reported within an optimized pit shell using \$US1,500/ounce for gold and \$US18/ounce for silver. The criteria used for the \$1,500/ounce gold pit shell optimization are shown in Table 14.8. The volume and tonnage for the reported resources within the \$1,500/ounce optimized pit shell represents approximately 77.5% of the total volume and tonnage of the unconstrained block model, which utilized a lower gold cut-off of 0.2 g/t Au.

The authors of this MRE consider the Whittle Pit parameters appropriate to evaluate the reasonable prospects for eventual future economic extraction of the Lewis Project MRE. The resources presented herein are not a mineral reserve, and they do not have demonstrated economic viability. There has been an insufficient level of exploration to define the indicated and inferred resources as measured mineral resources, and it is uncertain if further exploration will result in upgrading them to a measured resource category. There is no guarantee that any part of the resources identified herein will be converted to mineral reserves in future.

#### 14.10 Risks and Uncertainties

There has been little to no metallurgical work conducted on samples from the Lewis Property and in particular the Virgin Deposit. This represents a bit of an unknown and represents some risk for the Project. However, perhaps partly mitigating this risk is that

the Phoenix Mine borders the Virgin Resource area, and, in fact, the mining by Newmont and now NGM was significant in the Virgin Structural Zone right up to the Lewis Property boundary.

**Table 14.8. Parameters for Whittle Pit optimization for Mineral Resource Estimate.**

Parameter	Unit	Cost
Gold price	\$US/ounce	1,500
Gold recovery	%	90.0
Silver price	\$US/ounce	18
Silver recovery	%	80.0
Pit wall angles	degrees	52
Ore Mining Cost	US\$/ton	1.70
Waste Mining Cost	US\$/ton	1.50
Ore Density	Kg/m3	2.68
Waste Density	Kg/m3	2.68
Processing Rate	Mtpa	1.5
Processing Cost	\$US/tonne	6.00
G & A Cost	\$US/tonne	0.50
Selling Cost	\$US/ounce	0.75
Royalty	%	1

Little work has been conducted on the interpretation of mineralization that is oxidized and is potentially easily heap leachable versus sulphide based material, that still may be heap leachable, but may also be better suited to other metallurgical processes such as gravity, flotation and/or tank leach. The recoveries and processing costs utilized in the pit optimization uses a blended combination of heap leach, gravity, flotation and tank leach based upon process methodologies currently available and being employed by NGM at the Phoenix operation.

In general, there is little metallurgical data and the authors have relied upon information from the adjacent NGM Phoenix Pit and operations for assumptions related to reasonable prospects of future economic extraction. In addition, the size of the current resource dictates that there may be a strong dependence on eventually processing any material through the Phoenix operation rather than constructing any significant stand alone operation and processing plant.

In the kind of a scenario envisioned, the authors see that there will be risk in being able to come to commercial terms with NGM in order to utilize the Phoenix operation processing facility as a 3<sup>rd</sup> Party facility. There also will be risk in any potential future mining of the Virgin Resource, as this would likely necessitate a cut back of the current north wall of NGM's Phoenix Pit. There could be geotechnical risk and certain liabilities incurred in what would be effectively a cut back of NGM's Phoenix Pit. This would likely have to be discussed, negotiated and permitted with NGM at minimum.

The authors of this report are not aware of any other unusual risks or uncertainties, other than those that are inherent with all mineral exploration and development projects, with respect to the MRE discussed in this report for the Virgin Deposit.

#### 14.11 Mineral Resource Reporting

The Lewis Project Initial MRE for the Virgin Resource area is reported in accordance with the CSA NI 43-101 rules for disclosure and has been estimated using the CIM “Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines” dated November 29, 2019 and CIM “Definition Standards for Mineral Resources and Mineral Reserves” dated May 10th, 2014.

The Virgin resource area MRE was estimated within three-dimensional (3D) solids that were created from the cross-sectional lode interpretation of geology and alteration. The upper contact has been cut by the topographic surface. There is only minor overburden present at the Lewis Property. Grade was estimated into a block model with a block size of 3 m (9.84 ft) (X) by 3 m (9.84 ft) (Y) by 3 m (9.84 ft) (Z). A total of 506 bulk density measurements were available in the drillhole database to assess the mineralized zones and waste rock. A total of 49 bulk density samples were situated within the mineralized wireframes. The bulk density samples situated within the mineralized zones were examined on a lode by lode basis. All blocks within the Virgin block model were assigned a density of 2.68 g/cm<sup>3</sup>. Grade estimation of gold and silver was performed using Ordinary Kriging (OK) and locally varying anisotropy to ensure grade continuity in various directions is reproduced in the block model for each individual domain. For the purposes of pit optimization review, the blocks that contain waste were diluted by estimating a waste value using composites within a transition zone along the outer boundary of the estimation domains. The final gold and silver grade assigned to each block for the pit optimization is a volume-weighted average of the estimated gold and silver grade for the mineralized domain and waste domain grade values. The reported undiluted MRE only reports the volume of the blocks within the hard boundary mineralized domains. The Inferred MRE is constrained within a drilled area that extends approximately 5.4 km along strike to the north-northwest, 800 m across strike to the east and 550 m down dip.

The Virgin area MRE is reported at a range of gold cut-off grades in Table 14.9 and is classified as Inferred only. The Lewis Project Virgin area Inferred MRE is reported undiluted and uses a cut-off grade of 0.20 g/t Au (0.006 opt), which was constrained within an optimized pit shell constructed using a diluted resource and includes 7.74 million tonnes at 0.83 g/t (0.024 opt) gold for 205,800 oz, an average of 14.22 g/t (0.42 opt) silver for 3,537,300 ounces of silver, and an average of 1.00 g/t (0.029 opt) gold equivalent (AuEq uses an 80:1 silver to gold ratio) for 248,300 oz AuEq. The base case lower cut-off of 0.2 g/t Au is highlighted in Table 14.9. Other cut-off grades are presented for review ranging from 0 g/t Au to 0.5 g/t (0.015 oz/t) Au. The block modelled resource is shown with the \$1,500/ounce per gold pit shell in Figure 14.38 below.

**Table 14.9. Sensitivity analysis of the undiluted Virgin Area Inferred Mineral Resource Estimate constrained within a US\$1,500 pit shell with varying Au cut-offs.**

Au Cut-off (g/t)	Au Cut-off (opt)	Tonnes (million tonnes)	Tons (million tons)	Au Grade (g/t)	Au Grade (opt)	Contained Au (troy oz) <sup>***</sup>	Ag Grade (g/t)	Ag Grade (opt)	Contained Ag (troy oz) <sup>***</sup>	AuEq Grade (g/t)	AuEq Grade (opt)	Contained AuEq (troy oz) <sup>***</sup>
<b>*Inferred Mineral Resource (MRE)</b>												
0	0.000	9.01	9.94	0.73	0.021	211,200	13.49	0.393	3,909,700	0.89	0.026	258,100
0.1	0.003	8.67	9.56	0.76	0.022	210,600	13.82	0.403	3,850,500	0.92	0.027	256,800
0.14	0.004	8.43	9.29	0.77	0.023	209,600	13.92	0.406	3,773,100	0.94	0.027	254,900
<b>0.2**</b>	<b>0.006</b>	<b>7.74</b>	<b>8.53</b>	<b>0.83</b>	<b>0.024</b>	<b>205,800</b>	<b>14.22</b>	<b>0.415</b>	<b>3,537,300</b>	<b>1.00</b>	<b>0.029</b>	<b>248,300</b>
0.3	0.009	6.43	7.08	0.95	0.028	195,300	14.85	0.433	3,068,900	1.12	0.033	232,100
0.4	0.012	5.14	5.66	1.09	0.032	180,800	15.58	0.454	2,574,100	1.28	0.037	211,700
0.5	0.015	4.14	4.57	1.25	0.036	166,400	16.29	0.475	2,171,300	1.44	0.042	192,500

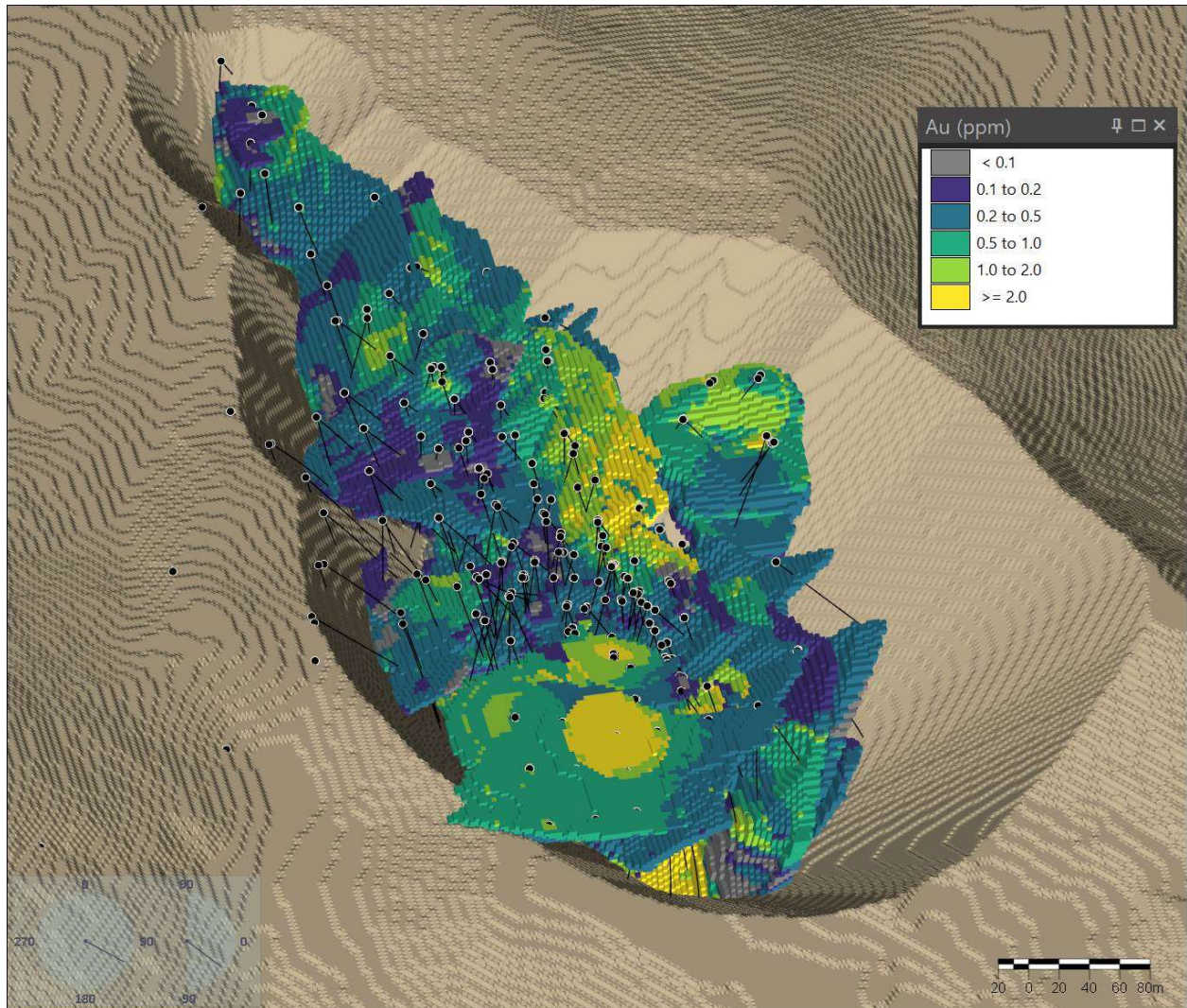
*\*Inferred Mineral Resources are not Mineral Reserves. Mineral resources which are not mineral reserves do not have demonstrated economic viability. There has been insufficient exploration to define the inferred resources tabulated above as an indicated or measured mineral resource, however, it is reasonably expected that the majority of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. There is no guarantee that any part of the mineral resources discussed herein will be converted into a mineral reserve in the future. The estimate of mineral resources may be materially affected by metallurgical, commercial, environmental, permitting, legal, marketing or other relevant issues. The mineral resources have been classified according to the Canadian Institute of Mining Definition Standards for mineral resources and mineral reserves (May, 2014).*

*\*\*The recommended reported resources are highlighted in bold and have been constrained within a \$US1,500/ounce of gold optimized pit shell.*

*\*\*\*Contained ounces may not add due to rounding.*

The 2020 Lewis Project Virgin area Resource has been classified as comprising Inferred mineral resources according to recent CIM definition standards (Table 14.9). The classification of the Lewis resources was based on geological confidence, data quality and grade continuity. All reported mineral resources occur within a pit shell optimized using values of \$US1,500 per ounce for gold. Mineral resources are not mineral reserves and do not have demonstrated economic viability.

**Figure 14.38. Oblique view of the block modelled mineral resource within the \$1,500/oz Au pit shell.**



## 15 Adjacent Properties

The Lewis Property is bordered on all sides by mineral claims held mostly by Nevada Gold Mines LLC (NGM) the largest landholder in the area. The Phoenix Mine is held by NGM and is located adjacent to the southeast boundary of the Lewis Property (Figure 15.1 and 15.2). The north wall of the Phoenix Pit is within 50 to 100 m of the southeast boundary of the Lewis Property. The authors of this report have not independently verified the information pertaining to the adjacent Phoenix Mine. The reader is cautioned that the information about the Phoenix Mine is not necessarily indicative of the mineralization on the Lewis Property that is the subject of this Technical Report.

The bounding north pit wall of the Phoenix Mine is almost in contact with the southeast boundary of the Lewis Property. A historical low-grade dump straddles the boundary of the Lewis Property and the Phoenix Pit edge in the vicinity of the Virgin Resource area (Figures 15.1 and 15.2). The Virgin Resource are mineralization continues to the edge of the Lewis Property and is within 50 m of the Phoenix Pit wall as shown in Figure 15.1. Based upon Figure 15.1, past mining by Newmont and drillhole assay data, mineralization associated with the Virgin Structural Zone continues from the Virgin Resource area into the Phoenix Pit.

In addition, deep skarn mineralization intersected in historical drilling at the Lewis Property is similar to material mined from the historical Lower Fortitude deposit of the Phoenix Mine. Due to the type of mineralization intersected on the Lewis Property, the proximity to the Phoenix Mine, and the paucity of metallurgical data available for the Virgin mineralization the authors have relied upon information from the Phoenix Pit and operations for assumptions related to reasonable prospects of potential future economic extraction of the Virgin Deposit. Additionally, the size of the current Virgin resource dictates that there may be a strong dependence on eventually processing any material through the Phoenix Operation rather than constructing a stand alone operation and processing plant. Consequently, a summary of the adjacent Phoenix Property is discussed below. It is important to note that the Phoenix Mine is located outside of the Lewis Property boundary and the author's have not verified the information pertaining to the Phoenix Property. Furthermore, the reader is cautioned that the similarity of geological information and styles of precious metal mineralization between the Phoenix Mine deposits and the adjoining Lewis Property is not necessarily indicative that a mineral deposit of similar size or grade exists or will be found on the Lewis Property.

**Figure 15.1. Phoenix Pit and the Virgin Resource area Photograph.**

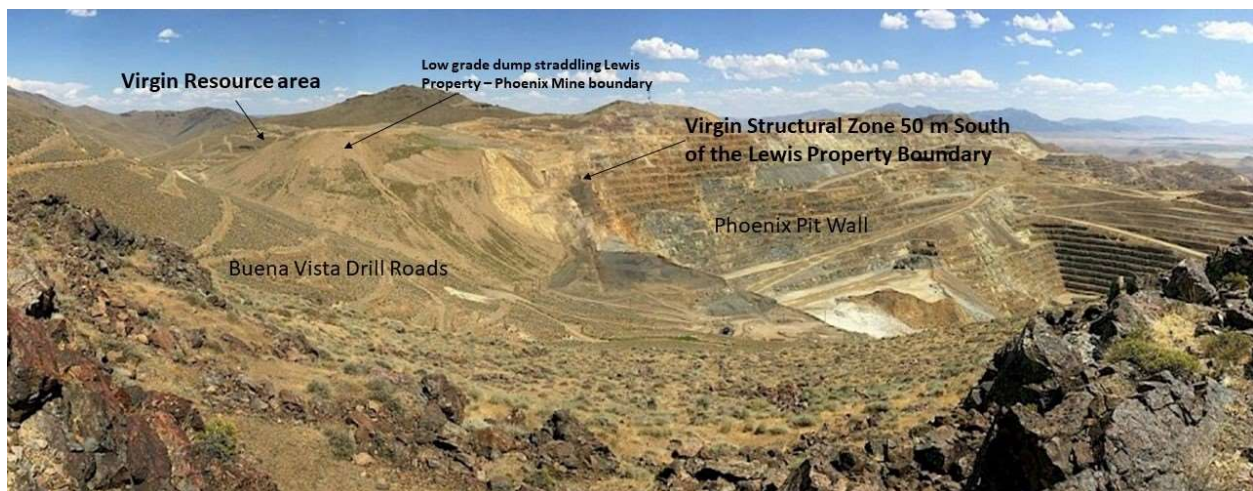
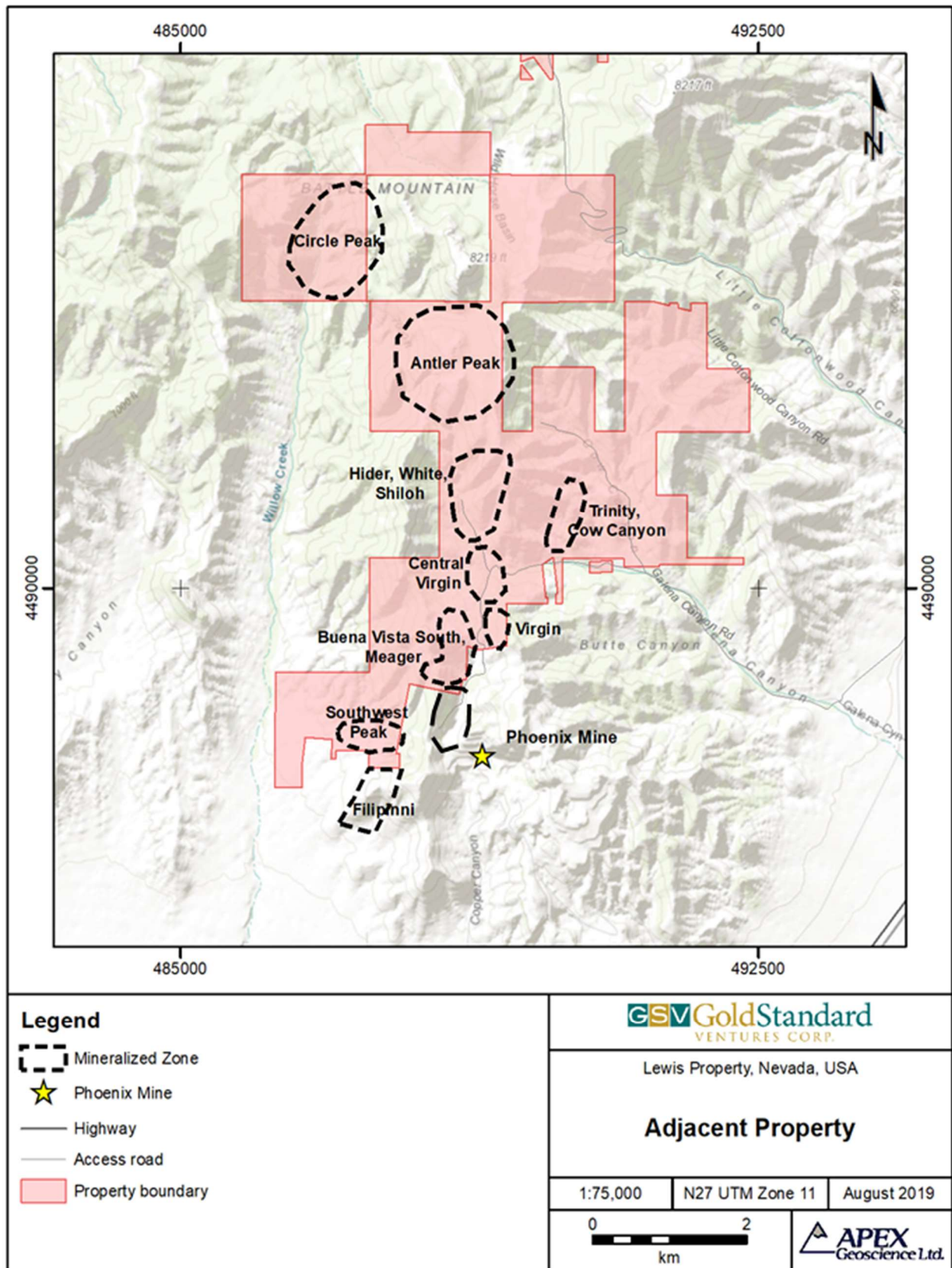




Figure 15.2. Location of the adjacent Phoenix Gold Mine.



## 15.1 Nevada Gold Mines' Phoenix Mine

In 2019, Newmont and Barrick established the Nevada Gold Mines joint venture encompassing both company's assets across Nevada, including the Phoenix Mine. The joint venture company, Nevada Gold Mines LLC (NGM), ownership is split 61.5% Barrick and 38.5% Newmont, with Barrick remaining as the operator.

The Phoenix Deposit was a prospect located on the Copper Canyon properties which were initially mined by underground methods for copper in the early 1900's. The Copper Canyon properties were acquired by Duval Corp. (Duval) in the early 1960's from American Smelting and Refining Co. (ASARCO). Duval mined the deposits as an open pit Cu-Au-Ag mine from 1967 to 1984. During the late 1970's with depressed copper prices and rising precious metal prices the mine was gradually converted to a gold producer. Subsequently, gold-silver skarn mineralization was discovered at the Tomboy and Minnie deposits. In 1984, Battle Mountain Gold Co. (BMGC) was formed to assume the gold mining operations of Duval. BMGC adopted the name Phoenix project for the gold prospects in the area surrounding the old copper mines, particularly in the Copper Canyon area. The Phoenix Mine was acquired by Newmont in January 2001 and commenced production in late 2006.

Newmont characterized Phoenix as a skarn-hosted polymetallic massive sulphide replacement deposit. The Phoenix Mine produces approximately 241,000 oz. gold and 32 million lbs. of copper annually. As of December 31, 2018, the Proven and Probable Reserves at the Phoenix Mine were 146.4 million tons (132.8 million tonnes) at 0.019 oz/t (0.66 g/t) Au for 2,820,000 total ounces gold, 243,100,000 tons (220,536,000 tonnes) at 0.18% Cu for 890 million lbs Cu and 146,400,000 tons (132,812,000 tonnes) at 0.22 opt (7.54 g/t) Ag for 31,910,000 oz Ag (Newmont Goldcorp Corporation, 2019a; 2019b). The authors of this Technical Report have not verified the mineral reserves and resources reported for the Phoenix Property. However, the resources were prepared by qualified persons in accordance with NI43-101 guidelines and the authors have no reason to question their validity. The reserves presented above are not necessarily indicative of the mineralization at the Virgin Resource area or on the Lewis Property.

The mineral deposit type(s) discovered to date at the Phoenix Property are high-grade, structurally controlled fault/veins and low-grade, disseminated precious metals skarns and replacements associated with north-trending structures and Tertiary intrusives. This type of mineralization has been documented and mined at the Copper Canyon-Fortitude-Phoenix Mine including at the Upper and Lower Fortitude, Nex, Tomboy-Minnie, Reona, West and East deposits (Kennedy, 2000).

In Nevada Bureau of Mines and Geology Bulletin 109, Jeff L. Doebrich (1995) writes:

*"Late Eocene granodioritic stocks and dikes were emplaced, primarily in north and northwest-striking structural zones. Some of these, particularly the granodiorite of Copper Canyon and the northwest-trending granodiorite porphyry dikes at the Buffalo Valley mine, were responsible for significant gold, silver and base-metal skarn, replacement and vein deposits. The Copper Canyon area alone has produced about 112 metric tons (3.6 million ounces) of gold and 663*

metric tons (21.3 million ounces) of silver (Wotruba et al, 1988). Deposits related to the Copper Canyon porphyry copper mineralizing system exhibit concentric metal zonation away from the intrusive centre of the granodiorite of Copper Canyon (Roberts and Arnold, 1965; Theodore et al, 1990). Copper and copper-gold deposits are proximal to the intrusive centre, gold-silver deposits are present in a zone outward from these, and lead-zinc-silver deposits are present in a distal zone. Gold-silver deposits include the Fortitude skarn deposits (Wotruba et al, 1988; Meyers and Meinert, 1991). Three factors were important in localizing the deposition of ores: (1) proximity to an intrusive body, (2) faults which served as conduits for magma and hydrothermal fluids, and (3) reactive (calcareous) host rocks.

The Fortitude gold-silver skarn deposit is to date the most economically significant producer of the Copper Canyon area, having produced 71.5 metric tons (2.3 million ounces) of gold and 336 metric tonnes (10.8 million ounces) of silver. The deposit included upper and lower ore zones that formed in place on opposite sides of the north-striking, west-dipping Virgin Fault and the granodiorite porphyry dike that intruded it. The upper ore zone, located east of and in the ft. wall of the fault, formed in calcareous siltstone and conglomerate of the Battle Formation. Ore of the upper zone was largely discontinuous due to strong structural control and selective sulphide replacement of thin calc-silicate pods and lenses aligned along faults and fault intersections (Wotruba et al, 1988). The lower ore zone, which constituted the bulk of the deposit, formed in the Antler Peak Limestone that was located west of and in the hanging wall of the Virgin Fault. The lower ore zone was stratiform and stratabound and consisted of a prograde clinopyroxene-garnet skarn assemblage overprinted by a retrograde skarn assemblage of actinolite, chlorite and epidote and late-stage calcite. Common sulphides included pyrrhotite, pyrite, marcasite, arsenopyrite, chalcopyrite, sphalerite and bismuthinite. Bi-tellurides (for example, hedleyite) and hessite were present in much lesser amounts. Native gold and electrum were present as inclusions in pyrrhotite and in late-stage calcite cutting garnet, suggesting more than one episode of gold deposition. North- and northeast-trending high-grade zones merged into one zone toward the south end of the deposit. These zones corresponded to mapped faults and zones of garnetiferous clinopyroxene skarn. Garnetiferous zones in the pervasive clinopyroxene skarn are believed to represent higher temperature assemblages that formed proximal to structures that channelled hydrothermal fluids, possibly antithetic to the Virgin Fault.”

Sulphide mineralization at the Phoenix Mine is vertically and concentrically zoned around intrusions and along northward trending structural corridors. The mineral zones roughly correspond to the silicate mineral alteration zones with an inner copper-gold, middle gold-silver, outer lead-zinc-silver-gold and possible distal arsenic-antimony zonation.

## 16 Other Relevant Data and Information

The author is unaware of any other relevant data or information related to the Property beyond that discussed in the preceding sections of this Technical Report.

## 17 Interpretation and Conclusions

The Lewis Property is located in north-central Nevada in Lander County within the Battle Mountain Mining District. The Lewis Property comprises 378 unpatented, 7 patented active BLM mining claims and two fee land parcels comprising approximately 5,369 acres (2,173 ha). The Property adjoins and lies immediately north of NGM's Phoenix Mine, a large open pit copper-gold-silver producer.

The Lewis Property has been historically mined for high-grade silver, gold, and base metals. Mineralization on the Property consists of a variety of apparent styles and types of mineralization including intrusion related, sediment-hosted, precious metal skarn and structurally controlled (epithermal or mesothermal) silicified fault/vein type. Several major mining companies have explored the Property since 1980, completing geological mapping, geochemical sampling, geophysical surveying, remote sensing and drilling. The majority of historical work has been completed at the Virgin Resource area. Historical drilling has outlined a similar geological environment to that underlying the northernmost part of the adjacent Phoenix Mine area, including direct on-strike extensions of the Antler Sequence stratigraphy, the Virgin Fault and mineralization styles. The Lewis Property covers approximately 3 miles (4.8 km) of highly prospective ground northward along this structural-stratigraphic corridor.

A total of 490 holes have been drilled on the Lewis Property, with a total of 230 at the Virgin Resource area. An additional 260 holes have been completed at a number of other target areas, including the Virgin to Hider, White & Shilo area, the Buena Vista – Meagher corridor, the Southwest Peak area, the Antler North target area and the Trinity Trend along the eastern portion of the Property. All of these targets have yielded significant intersections and warrant at least a review and potentially follow-up exploration including drilling.

This Technical Report has been prepared by APEX. The intent and purpose of this Technical Report is to detail an initial MRE for the Virgin Resource area and to summarize recent exploration completed on the Property by Gold Standard from 2016 to 2018. In the opinion of the authors of this Technical Report, exploration techniques and sampling and analytical techniques employed by the Company are consistent with industry standards and are appropriate for the types of mineral deposit(s) being explored. Based upon the author's site visit, the currently identified MRE present at the Property, and the results of the exploration work discussed in this report, it is the opinion of the authors of this Technical Report that the Lewis Project warrants continued exploration work.

### 17.1 2016 to 2018 Exploration

Exploration work completed by Gold Standard at the Lewis Property from 2016 to 2018 consists of geological mapping, geochemical sampling, geophysical surveying and drilling.

In 2016 a helicopter-borne magnetic and radiometric survey was flown over the project and ground gravity survey was completed. The results from the airborne magnetics indicate zones of high magnetic intensity over known intrusions. In addition, these results delineate two major east-northeasterly-trending lineaments that coincide locally with the distribution of variably clay-pyrite-altered, Tertiary dikes and fracture zones. These dikes and fracture zones are associated with gold-silver mineralization in the southern part of the Lewis Property and in the northern portion of the Fortitude deposit. The radiometric results show a good spatial coincidence between gold-silver bearing fault zones and radiometric gradients. The results of the ground gravity survey indicate that some of the major gold-silver-bearing fault zones coincide with gravity gradients. Many of the gravity gradients coincide with gradients observed in the magnetic- and radiometric-results and mapped faults.

Detailed geological mapping and geochemical rock sampling are ongoing at the Lewis Property. Recent work has focused on the eastern portion of the claim block, along a northerly-trending, gold-silver-arsenic-bearing structural corridor that extends from the inactive Iron Canyon gold-silver mine in the south through the historical Apex antimony mine to the Antimony King mine in the north. This style of mineralization is associated with northerly-trending, clay-altered Tertiary dikes of similar composition to those that occur in the Fortitude - Phoenix Mine area.

The grid-soil sampling was completed over portions of the southwestern part of the Property in 2016. Previous work by GSV indicates that gold-silver-bearing target zones, contained within reactive, Antler Sequence host-rocks beneath the Golconda Thrust, are typically expressed by multi-element anomalies in the Havallah/Pumpnickle Formation at surface. These surface anomalies are characterized by elevated arsenic, bismuth, low-level gold and silver, and other pathfinder elements.

Gold Standard conducted drilling between 2016 to 2018 at the Lewis Property. The drill programs focused on exploration, as well as resource delineation/expansion drilling at the Virgin Resource area. Gold Standard completed 15 drillholes: 7 core, 3 RC holes with core tails, and 5 RC holes totaling 23,735 ft (7,234 m) on the Lewis Property during the period. The drilling tested the Buena Vista South, Southwest Peak, Virgin Central and Virgin Resource areas. In addition to significant intersections at the Virgin Resource area, anomalous results were also obtained outside the resource area at Virgin Central with 0.45 grams per tonne (g/t) gold (Au) and 47.04 g/t silver (Ag) over 20 ft (6.1 m) core length, at Buena Vista South with 0.78 g/t Au over 35 ft (10.7 m) core length and Southwest Peak with 0.631 g/t Au and 3.62 g/t Ag over 25 ft (7.6 m) core length.

## **17.2 2020 Mineral Resource Estimate – Virgin Resource Area**

This Technical Report details an initial MRE for the Virgin Resource area on the Lewis Property based on recent and historical drilling and exploration work.

The Virgin Resource area MRE is reported at a range of gold cut-off grades in Table 17.1 and is classified as Inferred only. The Virgin Resource area Inferred MRE is

reported undiluted and uses a cut-off grade of 0.20 g/t Au (0.006 opt), which was constrained within an optimized pit shell constructed using a diluted resource. The Inferred MRE is comprised of 7.74 million tonnes at 0.83 g/t (0.024 opt) gold for 205,800 ounces of gold, an average of 14.22 g/t (0.42 opt) silver for 3,537,300 ounces of silver, and an average of 1.00 g/t (0.029 opt) gold equivalent (AuEq uses an 80:1 silver to gold ratio) for 248,300 oz AuEq. The base case lower cut-off of 0.2 g/t Au is highlighted in Table 17.1 below. Other cut-off grades are presented for review ranging from 0 g/t Au to 0.5 g/t (0.015 oz/t) Au.

**Table 17.1 Sensitivity analysis of the undiluted Virgin Area Inferred MRE constrained within a US\$1,500 pit shell with varying Au cut-offs.**

Au Cut-off (g/t)	Au Cut-off (opt)	Tonnes (million tonnes)	Tons (million tons)	Au Grade (g/t)	Au Grade (opt)	Contained Au (troy oz) <sup>***</sup>	Ag Grade (g/t)	Ag Grade (opt)	Contained Ag (troy oz) <sup>***</sup>	AuEq Grade (g/t)	AuEq Grade (opt)	Contained AuEq (troy oz) <sup>***</sup>
<b>*Inferred Mineral Resource (MRE)</b>												
0	0.000	9.01	9.94	0.73	0.021	211,200	13.49	0.393	3,909,700	0.89	0.026	258,100
0.1	0.003	8.67	9.56	0.76	0.022	210,600	13.82	0.403	3,850,500	0.92	0.027	256,800
0.14	0.004	8.43	9.29	0.77	0.023	209,600	13.92	0.406	3,773,100	0.94	0.027	254,900
<b>0.2**</b>	<b>0.006</b>	<b>7.74</b>	<b>8.53</b>	<b>0.83</b>	<b>0.024</b>	<b>205,800</b>	<b>14.22</b>	<b>0.415</b>	<b>3,537,300</b>	<b>1.00</b>	<b>0.029</b>	<b>248,300</b>
0.3	0.009	6.43	7.08	0.95	0.028	195,300	14.85	0.433	3,068,900	1.12	0.033	232,100
0.4	0.012	5.14	5.66	1.09	0.032	180,800	15.58	0.454	2,574,100	1.28	0.037	211,700
0.5	0.015	4.14	4.57	1.25	0.036	166,400	16.29	0.475	2,171,300	1.44	0.042	192,500

*\*Inferred Mineral Resources are not Mineral Reserves. Mineral resources which are not mineral reserves do not have demonstrated economic viability. There has been insufficient exploration to define the inferred resources tabulated above as an indicated or measured mineral resource, however, it is reasonably expected that the majority of the Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. There is no guarantee that any part of the mineral resources discussed herein will be converted into a mineral reserve in the future. The estimate of mineral resources may be materially affected by metallurgical, commercial, environmental, permitting, legal, marketing or other relevant issues. The mineral resources have been classified according to the Canadian Institute of Mining Definition Standards for mineral resources and mineral reserves (May, 2014).*

*\*\*The recommended reported resources are highlighted in bold and have been constrained within a \$US1,500/ounce of gold optimized pit shell.*

*\*\*\*Contained ounces may not add due to rounding.*

The 2019 Lewis Project MRE has been classified as comprising Inferred resources according to recent CIM definition standards. The classification of the Lewis resource was based on geological confidence, data quality and grade continuity. All reported mineral resources occur within a pit shell optimized using values of \$US1,500 per ounce for gold. Mineral resources are not mineral reserves and do not have demonstrated economic viability.

The Lewis Property MRE and statistics were completed in 2020 by Mr. Black, M.Sc., P.Geo. under the direct supervision and direction of Mr. Nicholls, BA.Sc., MAIG and Mr. Dufresne, M.Sc., P. Geol., P.Geo. all QPs as defined by NI 43-101. The Lewis Virgin area drillhole database utilized by APEX for resource estimation, including the recently completed GSV 2016 - 2018 drillholes, consists of 148,716 ft (45,328 m) in 230 holes, including 53 historic drillholes (pre-2000) and 177 post-2000 modern and fairly complete holes in terms of information. The database includes 123,235 ft (37,562 m) in 197 RC

holes and 25,481 ft (7,767 m) in 33 core holes completed between 2003 and 2018. The core holes represent 14.3% of the drillhole population by number of holes and 17.1% by footage. This is deemed an acceptable number of core holes for the purposes of constructing and MRE. The historic drillholes were completed between the early 1980's and 1997 with no core drilling.

The exported assay database provided to APEX by GSV contained 45,967 sample/assay interval entries. The assay database was trimmed down to the Lewis Virgin Resource area drillholes. The Virgin Resource area database consists of 29,512 sample intervals, with 4,217 intervals for the historic drillholes and 25,295 intervals for the GSV and related company drilling for the 2002 to 2018 drillholes. The sample database contains 599 entries of NS and/or blanks, approximately 2% of the database. Most of these entries are attributed to unsampled intervals, especially most of the >5 ft intervals (70 samples), and the collar/overburden top of hole intervals. The remaining dominantly 5 ft sample intervals without samples are attributed to mostly poor recovery, a few lost samples or missing data.

The Virgin resource area MRE was estimated within three-dimensional (3D) solids that were created from the cross-sectional lode interpretation of geology and alteration. The upper contact has been cut by the topographic surface. There is only minor overburden present at the Lewis Property. Grade was estimated into a block model with a block size of 3 m (9.84 ft) (X) by 3 m (9.84 ft) (Y) by 3 m (9.84 ft) (Z). A total of 506 bulk density measurements were available in the drillhole database to assess the mineralized zones and waste rock. A total of 49 bulk density samples were situated within the mineralized wireframes. The bulk density samples situated within the mineralized zones were examined on a lode by lode basis. All blocks within the Virgin block model were assigned a density of 2.68 g/cm<sup>3</sup>. Grade estimation of gold and silver was performed using Ordinary Kriging (OK) and locally varying anisotropy to ensure grade continuity in various directions is reproduced in the block model for each individual domain. For the purposes of pit optimization review, the blocks that contain waste were diluted by estimating a waste value using composites within a transition zone along the outer boundary of the estimation domains. The final gold and silver grade assigned to each block for the pit optimization is a volume-weighted average of the estimated gold and silver grade for the mineralized domain and waste domain grade values. The reported undiluted MRE only reports the volume of the blocks within the hard boundary mineralized domains. The Inferred MRE is constrained within a drilled area that extends approximately 5.4 km (3.4 miles) along strike to the north-northwest, 800 m (2,565 ft) across strike to the east and 550 m (1,805 ft) down dip.

### 17.3 Other Exploration Targets

The authors of this Technical Report and the Virgin Resource area MRE have reviewed the drillhole information for not only the Virgin Resource area but also for a number of the surrounding target areas. The area on strike and north of the Virgin Resource area following the Virgin Structural zone, i.e. the Virgin to the Hider, White & Shiloh areas, is considered not well drilled and is prospective for additional discoveries.

A number of drillholes have yielded significant intersections in the area. Recent drilling of a single hole by GSV at Virgin Central yielded an intersection of 1.515 g/t Au over 13 ft (4.0 m).

In addition to the initial MRE at the Virgin Deposit and its possible extension to the north, high-value exploration targets on the Lewis Project include: 1) the Southwest skarn target where Barrick drillhole FWL-30 intersected 17 m of 5.7 g Au/t – an intercept that remains open in multiple directions; and 2) the Buena Vista - Meagher corridor immediately north of NGM's Phoenix Mine. The strong gravity gradient and historic shallow intercepts in upper plate Havallah Sequence rocks (including 27.4 m of 2.20 g Au/t in drill hole BVD-9A) may indicate that the structure and system should be present in the favorable Antler host rocks at depth. Recent drilling by GSV yielded an intercept of 1.22 g/t over 20 ft (6.1 m) at Buena Vista South and 0.63 g/t Au over 25 ft (7.6 m) at the Southwest Peak target area.

#### 17.4 Risks and Uncertainties

The Virgin Resource area drilling is considered fairly extensive, however, the geological complexity of the Virgin Deposit with most of the gold and silver mineralization considered to be in zones that are structurally controlled and sub-vertical, dipping to the west combined with some zones considered shallow dipping stratabound mineralization also dipping to the west. The detailed domain interpretation of these zones in the core area is complex and difficult and therefore presents some risk in the accuracy of this interpretation.

Little work has been conducted on the interpretation of mineralization that is oxidized and is potentially easily heap leachable versus sulphide based material, that still may be heap leachable, but may also be better suited to other metallurgical processes such as gravity, flotation and/or tank leach. In general, there is little metallurgical data and the authors have relied upon information from the adjacent NGM Phoenix Pit and operations for assumptions related to reasonable prospects of potential future economic extraction. In addition, the size of the current resource dictates that there may be a strong dependence on eventually processing any material through the Phoenix operation rather than constructing any significant stand alone operation and processing plant. Therefore, in that kind of a scenario, there will be risk in being able to come to terms with NGM in order to utilize the Phoenix operation processing facility as a 3<sup>rd</sup> Party facility.

Potential future mining of the Virgin Deposit would likely necessitate a cut back of the current north wall of NGM's Phoenix Pit. There could be geotechnical risk and certain liabilities incurred in what effectively would be a cut back of the existing pit that would likely have to be discussed, negotiated and permitted with NGM at minimum.

The authors of this report are not aware of any other unusual risks or uncertainties, other than those that are inherent with all mineral exploration and development projects, and with respect to the MRE discussed in this report for the Lewis Property.



## 18 Recommendations

The newly identified MRE for the Virgin Resource area highlights the potential of the Lewis Property to identify new discoveries and mineral resources. Additional work, including a significant amount of drilling is warranted at the Lewis Property in order to expand upon the existing initial Virgin Deposit MRE, as well as at a number of additional exploration targets that could yield new discoveries and /or additional resources.

In the opinion of the authors of this Technical Report, the exploration techniques and the analytical and sampling procedures employed by Gold Standard at the Lewis Project are consistent with industry standards and are appropriate both with respect to the type of mineral deposit(s) being explored and with respect to ensuring overall data quality and integrity. Based upon the lead author's site visit, the currently identified resource present at the Property, and the results of the exploration work discussed in this report, it is the opinion of the authors of this Technical Report that the Lewis Project warrants continued exploration work.

Additional in-fill and step-out drilling is recommended for the currently defined MRE at the Virgin Resource area. New drilling should be conducted in order to obtain metallurgical samples and tighten drillhole spacing to provide information to update the complex geological model with priority given to areas that consist of predominately historical data points. If possible, an oxidation model should be constructed. With respect to potential expansion of the current MRE at the Property, continued drill testing of the respective stratigraphic and structural strike extensions, particularly to the north of the current Virgin Resource area (up to and including the Hider, White & Shilo areas) and at depth is recommended. Furthermore, additional drilling for metallurgical sampling and testing is recommended in order to provide the data necessary for a more thorough metallurgical characterization of the Virgin Deposit.

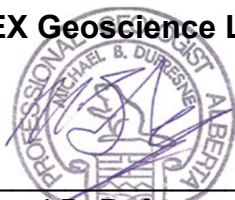
Regarding regional exploration, continued fieldwork comprising geological mapping, as well as geochemical sampling is recommended to refine the geological model for the Lewis Property and assist in drill target delineation. Soil geochemical sampling is recommended over and along strike of all defined target areas in order to prioritize targets for further detailed work and drilling. The fieldwork should be followed-up with exploration drilling at portions of the Buena Vista – Meagher Trend, the Southwest Peak area, the Antler North Target area and along the Trinity Trend, particularly where previous drilling has provided drill intersections of interest.

The estimated cost of the recommended work programs for the Lewis Property is itemized below and totals US\$3.36 million (Table 18.1). In the opinion of the authors of this report, all of the recommended work is warranted at this time and none of the different work programs are dependent upon the results of any of the others.

**Table 18.1. Summary of Estimated Costs for the Recommended Work Programs at the Lewis Project.**

Activity Type						Cost US\$
Continued Database Validation & Management						50,000
Geological Mapping, Prospecting & Sampling						50,000
Geochemical Soil Sampling						50,000
Metallurgical Testwork						100,000
Geological Modelling & Interpretation						50,000
Update & New Resource Modelling						50,000
Earthworks, Bonding & Environmental						100,000
					<b>Other Activities Subtotal</b>	<b>\$450,000</b>
<b>Drilling</b>						
Target	Cost/ft (All-in)	Cost/m (approx.)	Quantity (ft)	Quantity (m)	Cost US\$	
Virgin Resource Expansion (RC)	\$57/ft	\$187/m	13,125	4,000	750,000	
Virgin Infill PQ Core Met Work	\$150/ft	\$492/m	5,905	1,800	878,000	
Exploration Targets (RC)	\$57/ft	\$187/m	19,685	6,000	1,122,000	
<b>Drilling Subtotal</b>					<b>\$2,750,000</b>	
					<b>Activities Subtotal</b>	<b>\$3,200,000</b>
					<b>Contingency (~5%)</b>	<b>\$160,000</b>
					<b>Grand Total</b>	<b>\$3,360,000</b>

**APEX Geoscience Ltd.**



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 Signing Date: June 15<sup>th</sup>, 2020  
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## 20 Certificates of Authors

I, **Michael B. Dufresne**, M.Sc., P.Geol., P.Geo., do hereby certify that:

1. I am President of APEX Geoscience Ltd., Suite 100, 11450 – 160<sup>th</sup> Street NW, Edmonton, AB, Canada, T5M 3Y7.
2. I graduated with a B.Sc. Degree in Geology from the University of North Carolina at Wilmington in 1983 and a M.Sc. Degree in Economic Geology from the University of Alberta in 1987.
3. I am and have been registered as a Professional Geologist with the Association of Professional Engineers and Geoscientists (“APEGA”) of Alberta since 1989.
4. I have worked as a geologist for more than 30 years since my graduation from University and have extensive experience with exploration for, and the evaluation of, gold deposits of various types, including skarn and epithermal type precious metal mineralization.
5. I have read the definition of “Qualified Person” 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 or directly supervised and take responsibility for all sections of Technical Report titled “**Technical Report and Mineral Resource Estimate for the Lewis Project, Lander County, Nevada, USA**”, with an effective date of May 1, 2020 (the “Technical Report”). I personally conducted a site visit to the Lewis Property on August 17, 2019.
7. At the effective date of the Technical Report, to the best of my knowledge, information and belief, the report contains all the relevant scientific and technical information that is required to be disclosed, to make the Technical Report not misleading.
8. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
9. I am independent of the issuer and the Property applying all of the tests in section 1.5 of both NI 43-101 and 43-101CP.
10. I have not had any prior involvement with the Property that is the subject of the Technical Report.
11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files or their websites.

Effective date: May 1, 2020  
Edmonton, Alberta, Canada

*"Michael B. Dufresne"*

Michael B. Dufresne, M.Sc., P.Geol.

I, **Steven J. Nicholls**, BA Sc (Geology), M AIG., do hereby certify that:

1. I am a Senior Geological Consultant with APEX Geoscience Ltd., 2B Russell Street, Fremantle, WA, Australia, 6160.
2. I graduated with a Bachelor of Applied Science in Geology from the University of Ballarat in 1997.
3. I am and have been registered as a Member with the Australian Institute of Geoscientists, Australia (AIG) since 2007.
4. I have worked as a geologist for more than 19 years since my graduation from University and have extensive experience with exploration/resource estimation for, and the evaluation of, skarn and epithermal deposits.
5. I have read the definition of “Qualified Person” 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 made contributions to Sections 1, 17 and 18 and am responsible for Section 14 of the Technical Report titled “**Technical Report and Mineral Resource Estimate for the Lewis Project, Lander County, Nevada, USA**”, with an effective date of May 1, 2020 (the “Technical Report”). I have not performed a site visit to the Property.
7. At the effective date of the Technical Report, to the best of my knowledge, information and belief, the report contains all the relevant scientific and technical information that is required to be disclosed, to make the Technical Report not misleading.
8. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
9. I am independent of the issuer and the Property applying all of the tests in section 1.5 of both NI 43-101 and 43-101CP.
10. I have not had any prior involvement with the Property that is the subject of the Technical Report.
11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files or their websites.

Effective date: May 1, 2020

Perth, Western Australia, Australia

*"Steven J. Nicholls"*

Steven J. Nicholls, BA Sc (Geology), M AIG.



I, **Warren E. Black**, M.Sc., P.Geo., do hereby certify that:

1. I am a Senior Geologist and Consultant with APEX Geoscience Ltd., Suite 100, 11450 – 160<sup>th</sup> Street NW, Edmonton, AB, Canada, T5M 3Y7.
2. I graduated with a B.Sc. in Geology from the University of Alberta in Edmonton, Alberta in 2012 and with a M.Sc. in Civil Engineering from the University of Alberta in Edmonton, Alberta in 2016.
3. I am and have been registered as a Professional Geologist with the Association of Professional Engineers and Geoscientists (“APEGA”) of Alberta since 2018.
4. I have worked as a geologist and geostatistician for eight years since my graduation from university.
5. I have read the definition of “Qualified Person” 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, under the supervision of Steven J. Nicholls, B.A.Sc (Geology), MAIG and Michael B. Dufresne, M.Sc., P.Geo. am responsible for the preparation of Section 14 along with contributions to Sections 1, 17 and 18 of the Technical Report titled “**Technical Report and Mineral Resource Estimate for the Lewis Project, Lander County, Nevada, USA**”, with an effective date of May 1, 2020 (the “Technical Report”). I have not performed a site visit to the Property.
7. At the effective date of the Technical Report, to the best of my knowledge, information and belief, the report contains all the relevant scientific and technical information that is required to be disclosed, to make the Technical Report not misleading.
8. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
9. I am independent of the issuer and the Property applying all of the tests in section 1.5 of both NI 43-101 and 43-101CP.
10. I have not had any prior involvement with the Property that is the subject of the Technical Report.
11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files or their websites.

Effective Date: May 1, 2020  
Edmonton, Alberta, Canada

*"Warren E. Black"*

Warren E. Black, M.Sc., P. Geo.

## Appendix 1 - List of Units, Abbreviations and Measurements

<b>\$</b>	- Dollar amount
<b>%</b>	- Per cent
<b>'</b>	- Minutes (in the context of latitude and longitude coordinates)
<b>”</b>	- Seconds (in the context of latitude and longitude coordinates)
<b>”</b>	- inches (in the context of length measurement)
<b>°</b>	- Degrees
<b>°C</b>	- Degrees Celsius
<b>°F</b>	- Degrees Fahrenheit
<b>&lt;</b>	- less than
<b>&gt;</b>	- greater than
<b>1Q</b>	- 1 <sup>st</sup> quarter of the year
<b>2Q</b>	- 2 <sup>nd</sup> quarter of the year
<b>3Q</b>	- 3 <sup>rd</sup> quarter of the year
<b>4Q</b>	- 4 <sup>th</sup> quarter of the year
<b>3D/3-D</b>	- three dimensional
<b>AA/AAS</b>	- Atomic Absorption (Spectrometry)
<b>AACE</b>	- American Association of Cost Engineering
<b>AB</b>	- Alberta
<b>ac</b>	- Acre (0.0040469 km <sup>2</sup> )
<b>Ag</b>	- Silver
<b>AISC</b>	- all in sustaining costs
<b>ALS</b>	- ALS Global (analytical laboratories)
<b>APA</b>	- Asset Purchase Agreement
<b>APEX</b>	- APEX Geoscience Ltd.
<b>approx.</b>	- approximately
<b>As</b>	- Arsenic
<b>ATF</b>	- Bureau of Alcohol, Tobacco, Firearms, and Explosives
<b>ATS</b>	- automatic transfer system
<b>Au</b>	- Gold
<b>Azm</b>	- azimuth
<b>Ba</b>	- Barium
<b>BA.Sc.</b>	- Bachelor of Science
<b>BF</b>	- block factor
<b>bgs</b>	- below ground surface
<b>Bi</b>	- Bismuth
<b>BLM</b>	- Bureau of Land Management, U.S. Department of the Interior
<b>Boart</b>	- Boart Longyear
<b>B.S.</b>	- Bachelor of Science
<b>B.Sc.</b>	- Bachelor of Science
<b>cal.</b>	- calculated
<b>capex</b>	- capital expenditure
<b>CAPM</b>	- capital asset pricing method
<b>CDN</b>	- Canadian Laboratories
<b>CIC</b>	- carbon-in-column
<b>CIL</b>	- carbon-in-leach
<b>CIM</b>	- Canadian Institute of Mining
<b>CIP</b>	- carbon-in-pulp
<b>cm</b>	- Centimeter (0.3937 in)
<b>CN</b>	- Cyanide
<b>COC</b>	- Chain of Custody
<b>Corp.</b>	- Corporation
<b>CTGD</b>	- Carlin-type gold deposit
<b>Cu</b>	- Copper

<b>Cum</b>	- cumulative
<b>DDH</b>	- diamond drill hole
<b>e.g.</b>	- example
<b>EA</b>	- Exploration Approval
<b>EDA</b>	- Exploratory Data Analysis
<b>EM</b>	- Electromagnetic
<b>EPA</b>	- US Environmental Protection Agency
<b>et al.</b>	- and others
<b>EW</b>	- Electrowinning
<b>FA</b>	- Fire Assay
<b>FA-AA</b>	- Fire Assay with Atomic Absorption (Spectrometry) finish
<b>FCC</b>	- Federal Communications Commission
<b>Fe</b>	- Iron
<b>Fed.</b>	- federal
<b>FEIS</b>	- Final Environmental Impact Statement
<b>Fm</b>	- Formation
<b>FONSI</b>	- Finding of No Significant Impact
<b>ft</b>	- Feet (0.3048 m)
<b>ft<sup>2</sup></b>	- Square feet
<b>g</b>	- Gram
<b>G&amp;A</b>	- General and Administrative
<b>g/cm<sup>3</sup></b>	- Grams per centimeter cubed
<b>g/L</b>	- Grams per liter
<b>g/t</b>	- Grams per tonne (equivalent to ppm, 1 g/t Au = 0.029167 oz/ton Au)
<b>Ga</b>	- Billion years
<b>GIS</b>	- Geographic Information System
<b>gpm</b>	- Gallons per minute
<b>GPS</b>	- Global Positioning System
<b>GSV</b>	- Gold Standard Ventures Inc.
<b>ha</b>	- Hectare (2.471 acres)
<b>Hg</b>	- Mercury
<b>HL</b>	- Heap leach
<b>hrs.</b>	- hours
<b>HW</b>	- Hanging wall
<b>Hz</b>	- Hertz (cycles per second)
<b>ICP</b>	- Inductively Coupled Plasma geochemical analysis (ICP-AES, Atomic Emissions Spectrometry and ICP-MS, Mass Spectrometry)
<b>ID2</b>	- Inverse Distance Squared
<b>in</b>	- Inch (2.54 cm)
<b>Inc.</b>	- Incorporated
<b>incl</b>	- included
<b>IP</b>	- Induced Polarization
<b>IRR</b>	- Internal Rate of Return
<b>ISO</b>	- International Standards Organization
<b>JV</b>	- Joint Venture
<b>kg</b>	- Kilogram (2.2046 lbs)
<b>km</b>	- Kilometers (0.6214 mi)
<b>km<sup>2</sup></b>	- Square Kilometers (247.105 acres)
<b>kV</b>	- Kilovolts
<b>lb(s)</b>	- Pound(s)
<b>LG</b>	- Low Grade
<b>LME PM</b>	- London Metal Exchange Precious Metals
<b>LOM</b>	- Life of Mine
<b>Ltd.</b>	- Limited
<b>LV</b>	- Locally varying
<b>m</b>	- Meter (3.2808 ft)

<b>m<sup>3</sup></b>	- Meters cubed
<b>M</b>	- Million
<b>M.Sc.</b>	- Master of Science
<b>M+I</b>	- Measured and Inferred
<b>Ma</b>	- Million years
<b>MAIG</b>	- Member of the Australian Institute of Geoscientists
<b>Max</b>	- Maximum
<b>MD</b>	- Municipal District
<b>MDA</b>	- Mine Development Associates Inc.
<b>MDBM</b>	- Mount Diablo Base and Meridian
<b>mi</b>	- Mile (1.6093 km)
<b>Min</b>	- minimum
<b>MIK</b>	- Multiple Indicator Kriging
<b>ml</b>	- Milliliters
<b>MLA</b>	- Mineral Liberation Analysis
<b>mm</b>	- Millimeters
<b>Mn</b>	- Manganese
<b>MRE</b>	- Mineral Resource Estimate
<b>MSHA</b>	- Mine Safety and Health Administration
<b>Mt</b>	- Million tonnes
<b>MW</b>	- Megawatts
<b>N</b>	- North
<b>n</b>	- number of samples
<b>NAD</b>	- North American Datum (NAD27 – 1927 datum, NAD83 – 1983 datum)
<b>NDEP</b>	- Nevada Division of Environmental Protection
<b>NEPA</b>	- National Environmental Policy Act
<b>NI</b>	- National Instrument
<b>No.</b>	- number
<b>NOI</b>	- Notice of Intent
<b>NPV</b>	- Net Profit Interest
<b>NSR</b>	- Net Smelter Returns Royalty
<b>NV</b>	- Nevada
<b>OK</b>	- Ordinary Kriging
<b>Op</b>	- operations
<b>OREAS</b>	- Ore Research and Exploration Pty Ltd.
<b>oz</b>	- ounce (always referring to troy ounce when referring to gold grade)
<b>oz/st</b>	- troy ounce(s) (eg. Gold) per short ton (equivalent to ounce per ton – opt or 1 oz/st = 34.2857 g/t or ppm)
<b>opt</b>	- ounce(s) per short ton
<b>P.Eng.</b>	- Professional Engineer
<b>P.Geol.</b>	-Professional Geologist
<b>P.Geo.</b>	-Professional Geoscientist
<b>Pb</b>	- Lead
<b>PC</b>	- Principal Component
<b>PCA</b>	- Principal Component Analysis
<b>Pd</b>	- Palladium
<b>PEA</b>	- Preliminary Economic Assessment
<b>PLSS</b>	- Public Land Survey System
<b>PoO</b>	- Plan of Operations
<b>ppb</b>	- Parts per billion
<b>ppm</b>	- Parts per million (equivalent to grams per tonne, 1 g/t Au = 0.029167 oz/ton Au)
<b>Prod</b>	- Production
<b>Pt</b>	- Platinum
<b>QA/QC</b>	- Quality Assurance and Quality Control
<b>QC</b>	- Quality Control
<b>QP</b>	- Qualified Person

<b>R</b>	- Range (as in T15N, R56E)
<b>RC</b>	- Reverse Circulation Drilling
<b>Recl</b>	- Reclamation
<b>RSD</b>	- Relative Standard Deviation
<b>S</b>	- Sulfur
<b>Sb</b>	- Antimony
<b>SAD</b>	- Surface Area Disturbance
<b>SD</b>	- Standard Deviation
<b>SG</b>	- Specific Gravity or Density
<b>SME</b>	- Society for Mining, Metallurgy and Exploration
<b>st</b>	- short ton (2,000 lbs)
<b>Sph</b>	- Spherical
<b>stpd</b>	- short tons per day
<b>t</b>	- metric tonne (1000 kg = 2,204.6 lbs)
<b>T</b>	- Township (as in T15N, R56E)
<b>Te</b>	- Tellurium
<b>TI</b>	- Thallium
<b>tpd</b>	- Tons per day
<b>TR</b>	- Technical Report
<b>tr oz</b>	- troy ounce
<b>ton</b>	- Imperial ton or short ton (2,000 lbs)
<b>TSF</b>	- Tailings storage facility
<b>TSX</b>	- Toronto Stock Exchange
<b>US or USA</b>	- United States of America
<b>USD/US\$</b>	- US Dollar
<b>usgpm</b>	- US Gallons per Minute
<b>USGS</b>	- United States Geological Survey
<b>UTM</b>	- Universal Transverse Mercator
<b>wt%</b>	- Weight percentage
<b>XRD</b>	- X-ray Diffraction
<b>XRF</b>	- X-ray Fluorescence
<b>yr.</b>	- Year
<b>Zn</b>	- Zinc

## Appendix 2 – Madison Enterprises (Nevada) Inc. Claims

### Appendix 1A – Madison Enterprises (Nevada) Inc. Patented Mining Claims

Patented Claim Name	U.S. Mineral Survey No.	Lander County APN
New Silver Dream #6	5048	098-703-44
Robert Emmet	59	098-702-21
Eureka	60	098-702-22
October	4380	098-702-41
Alps Mine and Company	3742	098-701-94
Weimer Burr	3074	098-702-37
Hoosac Lode and Company	3742	098-701-95

## Appendix 1B – Madison Enterprises (Nevada) Inc. Unpatented Mining Claims

Count	Claim Name	BLM Serial No.
1	DRISCOL HIGH GRADE	NMC70523
2	DRISCOL # 1	NMC70524
3	DRISCOL # 2	NMC70525
4	DRISCOL # 3	NMC70526
5	DRISCOL # 4	NMC70527
6	DRISCOL # 5	NMC70528
7	DRISCOL # 6	NMC70529
8	DRISCOL # 7	NMC70530
9	DRISCOL # 8	NMC70531
10	DRISCOL # 9	NMC70532
11	DRISCOL # 10	NMC70533
12	DRISCOL # 12	NMC70534
13	DRISCOL # 13	NMC70535
14	DRISCOL # 14	NMC70536
15	DRISCOL # 14	NMC70537
16	DRISCOL # 15	NMC70538
17	PERSPIRATION # 1	NMC97903
18	PERSPIRATION # 2	NMC97904
19	PERSPIRATION # 3	NMC97905
20	APRIL	NMC97906
21	BEAR PAW	NMC102415
22	BEAR PAW # 1	NMC102416
23	BEAR PAW # 4	NMC102417
24	BEAR PAW # 5	NMC102418
25	BEAR PAW # 6	NMC102419
26	GOLDFIELD CONC MS	NMC102449
27	SILVER DREAM # 9	NMC151241
28	SILVER DREAM # 10	NMC151242
29	SILVER DREAM # 11	NMC151243
30	DRISCOLL EXT # 8	NMC151260
31	DRISCOLL EXT # 9	NMC151261
32	DRISCOLL EXT # 10	NMC151262
33	DRISCOLL EXT # 11	NMC151263
34	DRISCOLL EXT # 12	NMC151264
35	DRISCOLL EXT # 13	NMC151265
36	DRISCOLL EXT # 14	NMC151266
37	DRISCOLL EXT # 15	NMC151267
38	BUENA VISTA # 1	NMC151268

Count	Claim Name	BLM Serial No.
39	BUENA VISTA # 2	NMC151269
40	BUENA VISTA # 3	NMC151270
41	BUENA VISTA # 4	NMC151271
42	BUENA VISTA # 5	NMC151272
43	BUENA VISTA # 6	NMC151273
44	BUENA VISTA # 7	NMC151274
45	BUENA VISTA # 8	NMC151275
46	BUENA VISTA # 9	NMC151276
47	BUENA VISTA # 10	NMC151277
48	BUENA VISTA # 11	NMC151278
49	BUENA VISTA # 12	NMC151279
50	BUENA VISTA # 13	NMC151280
51	SURPRISE # 5	NMC159540
52	SURPRISE # 6	NMC159541
53	SURPRISE # 7	NMC159542
54	SURPRISE # 8	NMC159543
55	BUENA VISTA # 14	NMC159544
56	BUENA VISTA # 15	NMC159545
57	BUENA VISTA # 16	NMC159546
58	SURPRISE # 9	NMC166987
59	SURPRISE # 10	NMC166988
60	ANTLER # 1	NMC181854
61	ANTLER # 2	NMC181855
62	ANTLER # 3	NMC181856
63	ANTLER # 4	NMC181857
64	ANTLER # 5	NMC181858
65	ANTLER # 6	NMC181859
66	ANTLER # 7	NMC181860
67	ANTLER # 8	NMC181861
68	ANTLER # 9	NMC181862
69	ANTLER # 10	NMC181863
70	ANTLER # 11	NMC181864
71	ANTLER # 12	NMC181865
72	ANTLER # 13	NMC181866
73	ANTLER # 14	NMC181867
74	ANTLER # 15	NMC181868
75	ANTLER # 16	NMC181869
76	ANTLER # 17	NMC181870
77	ANTLER # 18	NMC181871



Count	Claim Name	BLM Serial No.
78	ANTLER # 19	NMC181872
79	ANTLER # 20	NMC181873
80	ANTLER # 21	NMC181874
81	ANTLER # 22	NMC181875
82	ANTLER # 23	NMC181876
83	ANTLER # 24	NMC181877
84	ANTLER # 25	NMC181878
85	ANTLER # 26	NMC181879
86	ANTLER # 27	NMC181880
87	BUENA VISTA # 17	NMC181887
88	BUENA VISTA # 18	NMC181888
89	BUENA VISTA # 19	NMC181889
90	BUENA VISTA # 20	NMC181890
91	BUENA VISTA # 21	NMC181891
92	BUENA VISTA # 22	NMC181892
93	BUENA VISTA # 23	NMC181893
94	DRISCOL EXT 16	NMC183430
95	DRISCOL EXT 17	NMC183431
96	DRISCOL EXT 18	NMC183432
97	DRISCOL EXT 19	NMC183433
98	DRISCOL EXT 20	NMC183434
99	DRISCOL EXT 21	NMC183435
100	DRISCOL EXT 22	NMC183436
101	DRISCOL EXT 23	NMC183437
102	DRISCOL EXT 24	NMC183438
103	DRISCOL EXT 25	NMC183439
104	DRISCOL EXT 26	NMC183440
105	DRISCOL EXT 27	NMC183441
106	DRISCOL EXT 28	NMC183442
107	DRISCOL EXT # 29	NMC183443
108	DRISCOL EXT # 30	NMC183444
109	DRISCOL EXT # 31	NMC183445
110	DRISCOL EXT # 32	NMC183446
111	DRISCOL EXT # 33	NMC183447
112	DRISCOL EXT # 34	NMC183448
113	DRISCOL EXT # 37	NMC183449
114	DRISCOL EXT # 38	NMC183450
115	DRISCOL EXT # 39	NMC183451
116	DRISCOL EXT # 40	NMC183452

Count	Claim Name	BLM Serial No.
117	DRISCOL EXT 41	NMC183453
118	DRISCOL EXT # 42	NMC183454
119	PERSPIRATION # 4	NMC183455
120	PERSPIRATION # 5	NMC183456
121	PERSPIRATION # 6	NMC183457
122	PERSPIRATION # 7	NMC183458
123	PERSPIRATION # 8	NMC183459
124	PERSPIRATION # 9	NMC183460
125	PERSPIRATION # 10	NMC183461
126	PERSPIRATION # 11	NMC183462
127	PERSPIRATION # 12	NMC183463
128	PERSPIRATION # 13	NMC183464
129	PERSPIRATION # 14	NMC183465
130	PERSPIRATION # 15	NMC183466
131	PERSPIRATION # 16	NMC183467
132	PERSPIRATION # 17	NMC183468
133	PERSPIRATION # 18	NMC183469
134	PERSPIRATION # 19	NMC183470
135	PERSPIRATION # 20	NMC183471
136	PERSPIRATION # 21	NMC183472
137	PERSPIRATION # 22	NMC183473
138	PERSPIRATION # 23	NMC183474
139	PERSPIRATION # 24	NMC183475
140	PERSPIRATION # 25	NMC183476
141	PERSPIRATION # 26	NMC183477
142	PERSPIRATION # 27	NMC183478
143	PERSPIRATION # 28	NMC183479
144	PERSPIRATION # 29	NMC183480
145	PERSPIRATION # 30	NMC183481
146	PERSPIRATION # 31	NMC183482
147	PERSPIRATION # 32	NMC183483
148	PERSPIRATION # 33	NMC183484
149	PERSPIRATION # 34	NMC183485
150	PERSPIRATION # 35	NMC183486
151	PERSPIRATION # 36	NMC183487
152	PERSPIRATION # 37	NMC183488
153	PERSPIRATION # 38	NMC183489
154	PERSPIRATION # 39	NMC183490
155	NKP # 1	NMC183860

Count	Claim Name	BLM Serial No.
156	NKP # 2	NMC183861
157	NKP # 3	NMC183862
158	NKP # 4	NMC183863
159	NKP # 5	NMC183864
160	NKP # 6	NMC183865
161	NKP # 7	NMC183866
162	NKP # 8	NMC183867
163	NKP # 9	NMC183868
164	NKP # 10	NMC183869
165	NKP # 11	NMC183870
166	NKP # 12	NMC183871
167	NKP # 13	NMC183872
168	NKP # 14	NMC183873
169	NKP # 15	NMC183874
170	NKP # 16	NMC183875
171	NKP # 17	NMC183876
172	NKP # 19	NMC183878
173	NKP # 20	NMC183879
174	NKP # 21	NMC183880
175	NKL # 1	NMC183881
176	NKL # 2	NMC183882
177	NKL # 3	NMC183883
178	NKL # 4	NMC183884
179	NKL # 5	NMC183885
180	NKL # 6	NMC183886
181	NKL # 7	NMC183887
182	NKL # 8	NMC183888
183	NKL # 9	NMC183889
184	NKL # 10	NMC183890
185	NKL # 11	NMC183891
186	NKL # 12	NMC183892
187	NKL # 13	NMC183893
188	NKL # 14	NMC183894
189	NKL # 15	NMC183895
190	NKL # 16	NMC183896
191	NKL # 17	NMC183897
192	NKL # 19	NMC183899
193	NKL # 20	NMC183900
194	NKL # 21	NMC183901

Count	Claim Name	BLM Serial No.
195	ANTLER # 28	NMC200025
196	ANTLER # 29	NMC200026
197	ANTLER # 30	NMC200027
198	ANTLER # 31	NMC200028
199	ANTLER # 32	NMC200029
200	ANTLER # 33	NMC200030
201	ANTLER # 34	NMC200031
202	ANTLER # 35	NMC200032
203	ANTLER # 36	NMC200033
204	DRISCOL EXT # 5	NMC241287
205	DRISCOL EXT # 6	NMC241288
206	DRISCOL EXT # 7	NMC241289
207	BATTLE	NMC241290
208	BATTLE # 1	NMC241291
209	BATTLE # 2	NMC241292
210	BEAR PAW # 2	NMC241293
211	BEAR PAW # 3	NMC241294
212	LC # 1	NMC241315
213	LC # 2	NMC241316
214	LC # 3A	NMC241317
215	LC # 3B	NMC241318
216	LC # 4	NMC241319
217	LC # 5	NMC241320
218	LC # 6	NMC241321
219	LC # 7	NMC241322
220	LC # 8	NMC241323
221	LC # 9	NMC241324
222	LC # 10	NMC241325
223	LC # 11	NMC241326
224	LC # 12	NMC241327
225	LC # 13	NMC241328
226	LC # 14	NMC241329
227	LC # 15	NMC241330
228	LC # 16	NMC241331
229	LC # 17	NMC241332
230	LC # 18	NMC241333
231	LC # 19	NMC241334
232	LC # 20	NMC241335
233	LC # 21	NMC241336

Count	Claim Name	BLM Serial No.
234	LC # 22	NMC241337
235	LC # 23	NMC241338
236	LC # 24	NMC241339
237	LC # 25	NMC241340
238	LC # 26	NMC241341
239	AP # 1	NMC241342
240	AP # 2	NMC241343
241	AP # 3	NMC241344
242	AP # 4	NMC241345
243	AP # 5	NMC241346
244	DRISCOL EXT # 43	NMC241347
245	NKL # 22	NMC241348
246	NKL # 23	NMC241349
247	NKP # 22	NMC241350
248	NKP # 23	NMC241351
249	BVD # 1	NMC241352
250	BVD # 2	NMC241353
251	BVD # 3	NMC241354
252	BVD # 4	NMC241355
253	BVD # 5	NMC241356
254	BVD # 6	NMC241357
255	BVD # 7	NMC241358
256	BVD # 8	NMC241359
257	BVD # 9	NMC241360
258	BVD # 10	NMC241361
259	BVD # 11	NMC241362
260	SILVER DREAM # 1	NMC243533
261	SILVER DREAM # 4	NMC243536
262	SILVER DREAM # 5	NMC243537
263	SILVER DREAM # 7	NMC243538
264	SILVER DREAM # 8	NMC243539
265	NKL # 22	NMC245418
266	NKL # 23	NMC245419
267	SURPRISE FRAC # 1	NMC245420
268	SURPRISE FRAC # 2	NMC245421
269	SURPRISE FRAC # 3	NMC245422
270	SURPRISE FRAC # 4	NMC245423
271	SURPRISE FRAC # 5	NMC245424
272	SURPRISE FRAC # 6	NMC245425

Count	Claim Name	BLM Serial No.
273	SURPRISE FRAC # 7	NMC245426
274	BUENA VISTA FRAC 1	NMC245427
275	BUENA VISTA FRAC 2	NMC245428
276	HONEY BEAR # 1	NMC251629
277	HONEY BEAR # 2	NMC251630
278	HONEY BEAR # 3	NMC251631
279	HONEY BEAR # 4	NMC251632
280	HONEY BEAR # 5	NMC251633
281	HONEY BEAR # 6	NMC251634
282	HONEY BEAR # 7	NMC251635
283	HONEY BEAR # 8	NMC251636
284	HONEY BEAR # 9	NMC251637
285	HONEY BEAR # 10	NMC251638
286	HONEY BEAR # 11	NMC251639
287	HONEY BEAR # 12	NMC251640
288	HONEY BEAR # 13	NMC251641
289	HONEY BEAR # 14	NMC251642
290	HONEY BEAR # 15	NMC251643
291	HONEY BEAR # 16	NMC251644
292	HONEY BEAR # 17	NMC251645
293	HONEY BEAR # 18	NMC251646
294	HONEY BEAR # 19	NMC251647
295	HONEY BEAR # 20	NMC251648
296	HONEY BEAR # 21	NMC251649
297	HONEY BEAR # 22	NMC251650
298	HONEY BEAR # 23	NMC251651
299	HONEY BEAR # 24	NMC251652
300	BUENA VISTA FRAC # 3	NMC260267
301	BUENA VISTA FRAC # 4	NMC260268
302	BUENA VISTA FRAC # 5	NMC260269
303	BUENA VISTA FRAC # 6	NMC260270
304	BUENA VISTA FRAC # 7	NMC260271
305	DRISCOL EXT # 44	NMC271305
306	DRISCOL EXT # 45	NMC271306
307	DRISCOL EXT # 46	NMC271307
308	DRISCOL EXT # 47	NMC271308
309	DRISCOL EXT # 48	NMC271309
310	DRISCOL EXT # 49	NMC271310
311	LC # 27	NMC271311

Count	Claim Name	BLM Serial No.
312	LC # 28	NMC271312
313	LC # 29	NMC271313
314	LC # 30	NMC271314
315	LC # 31	NMC271315
316	LC # 32	NMC271316
317	SC # 1	NMC271317
318	SC # 2	NMC271318
319	SC # 3	NMC271319
320	SC # 4	NMC271320
321	SC # 5	NMC271321
322	SC # 6	NMC271322
323	SC # 7	NMC271323
324	SC # 8	NMC271324
325	SC # 9	NMC271325
326	SC # 10	NMC271326
327	SC # 11	NMC271327
328	SC # 12	NMC271328
329	SC # 13	NMC271329
330	SC # 14	NMC271330
331	SC # 15	NMC271331
332	SC # 16	NMC271332
333	PERSPIRATION # 1	NMC385034
334	PERSPIRATION # 2	NMC385035
335	PERSPIRATION # 3	NMC385036
336	PERSPIRATION # 4	NMC385037
337	PERSPIRATION # 5	NMC385038
338	PERSPIRATION # 6	NMC385039
339	PERSPIRATION # 7	NMC385040
340	PERSPIRATION # 8	NMC385041
341	ANTLER EXT # 1	NMC385042
342	ANTLER EXT # 2	NMC385043
343	ANTLER EXT # 3	NMC385044
344	ANTLER EXT # 4	NMC385045
345	ANTLER EXT # 5	NMC385046
346	ANTLER EXT # 6	NMC385047
347	ANTLER EXT # 7	NMC385048
348	ANTLER EXT # 8	NMC385049
349	ANTLER EXT # 9	NMC385050
350	ANTLER EXT # 10	NMC385051

<b>Count</b>	<b>Claim Name</b>	<b>BLM Serial No.</b>
351	DUCK FRACTION	NMC387880
352	ROID # 1 FRAC	NMC418380
353	ROID # 2 FRAC	NMC418381
354	WILLOW FRAC	NMC418382
355	WILLOW FRAC # 1	NMC418383
356	WILLOW FRAC # 2	NMC418384
357	WILLOW FRAC # 3	NMC418385
358	NEW SILVER DREAM # 2	NMC589457
359	NEW SILVER DREAM # 3	NMC589458
360	MCBEAR #1	NMC700644



**Appendix 1C – Madison Enterprises (Nevada) Inc. Unpatented Mining Claims  
(formerly owned by Battle Mountain Gold (USA) Inc.)**

Count	Claim Name	BLM Serial No.
1	DEWITT 1	NMC1128030
2	DEWITT 2	NMC1128031
3	DEWITT 3	NMC1128032
4	WILLOW CLIFFS 1	NMC1128033
5	WILLOW CLIFFS 2	NMC1128034
6	WILLOW CLIFFS 3	NMC1128035
7	WILLOW CLIFFS 4	NMC1128036
8	WILLOW CLIFFS 5	NMC1128037
9	WILLOW CLIFFS 6	NMC1128038
10	WILLOW CLIFFS 7	NMC1128039
11	WILLOW CLIFFS 8	NMC1128040
12	WILLOW CLIFFS 9	NMC1128041
13	WILLOW CLIFFS 10	NMC1128042
14	WILLOW CLIFFS 11	NMC1128043
15	APEX EAST 1	NMC1130196
16	APEX EAST 2	NMC1130197
17	SILVER DREAM 12	NMC1130200
18	SURPRISE 11	NMC1131439