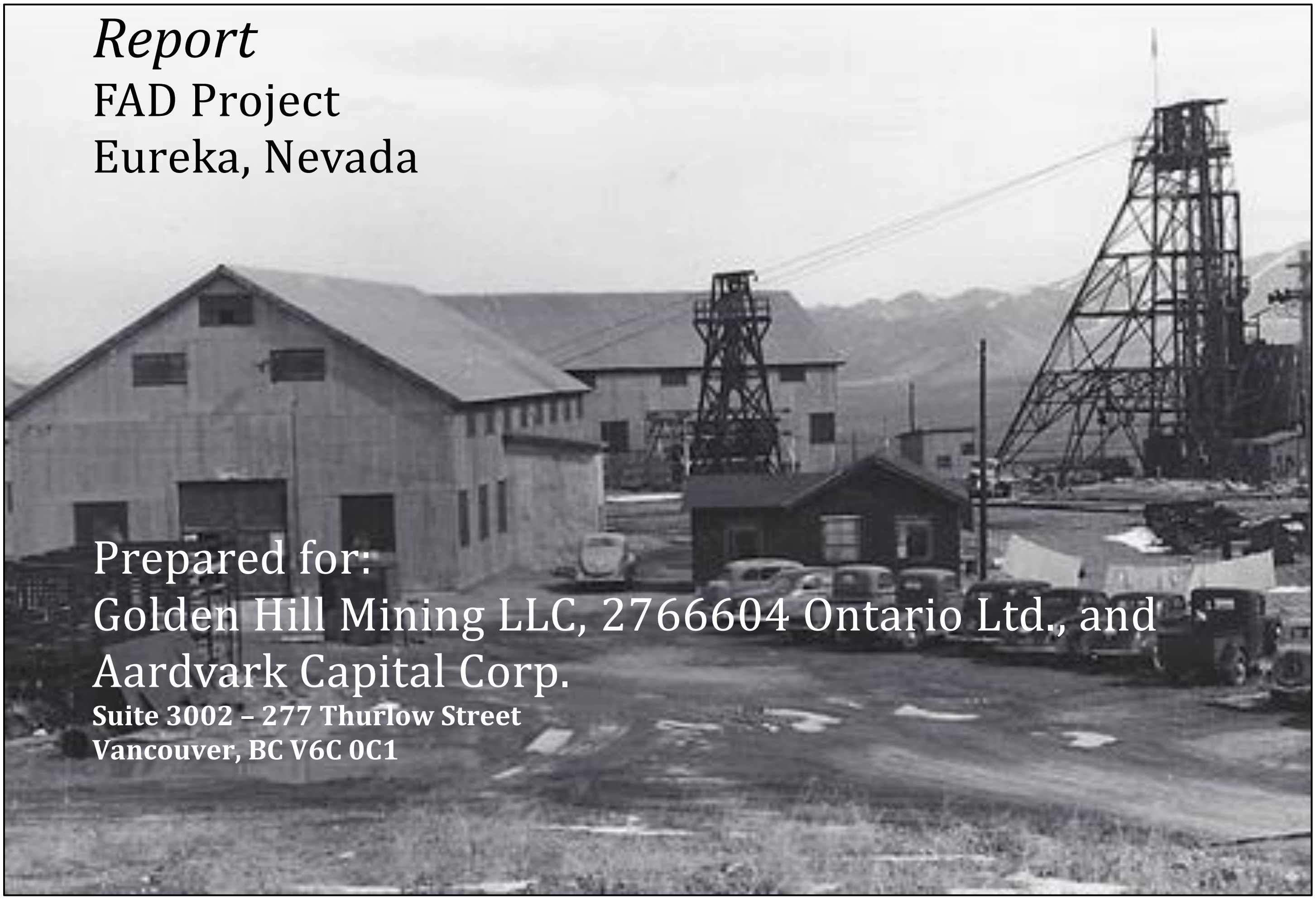
Amended and Restated NI 43-101 Technical Report

FAD Project
Eureka, Nevada



Prepared for:
Golden Hill Mining LLC, 2766604 Ontario Ltd., and
Aardvark Capital Corp.
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Effective Date: April 7, 2022
Amended and Restated Date: February 1, 2023

Prepared by

Global Resource Engineering, Ltd
Qualified Persons
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Larry Breckenridge, PE, CO No. 38048

Date and Signature Page

This Technical Report on the FAD Project is submitted to Golden Hill Mining LLC and is effective April 7, 2022, amended and restated February 1, 2023.

The Qualified Persons and Responsible Report Sections follow:

Qualified Person	Responsible for Report Sections
Dr. Hamid Samari	1.3, 1.4, 1.5, 1.6, 1.7, 7.0, 8.0, 9.0, 10.0, 11.0, 12.0, 17.0, and 18.0.
Mr. Larry Breckenridge	1.1,1.2, 2.0, 3.0, 4.0, 5.0, 6.0, 13.0, 14.0, 15.0, 16.0, and 19.0

(Signed) "Hamid Samari"
Signature Dr. Hamid Samari

4/7/2022
Date

(Signed) "Larry Breckenridge"
Signature Mr. Larry Breckenridge, P.E.

4/7/2022
Date

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF PHOTOS

1.0 EXECUTIVE SUMMARY

1.1 Overview

The FAD Property ("**the Project**" or "**the Property**") is located in Eureka County, Nevada USA, in the Prospect mountains. The Property is situated approximately 1.5 miles (2.3 km) east of the town of Eureka, Nevada. The Property consists of 156 unpatented lode mining claims, and 110 fee land parcels (also called patented claims), totaling approximately 3,627 acres (1,467 ha). Nevada has a long history of gold and base metals mining from the Eureka district. Nevada accounts for nearly 80% of annual gold production in the United States and was recently ranked number one in 2021 as the most attractive jurisdiction globally for mining investment by the Fraser Institute. The FAD Property exploration is primarily situated on patented claims which historically has a shorter permitting time.

Global Resource Engineering ("**GRE**") was engaged by Golden Hill Mining LLC ("**Golden Hill**") and 2766604 Ontario Ltd. (the "**Parent**", and together with Golden Hill, the "**Optionees**") to complete a National Instrument (NI) 43-101 Technical Report ("**the Report**") for the Optionees and Aardvark Capital Corp. (the "**Issuer**") summarizing the geology, exploration history, and acquisition of the FAD property.

Golden Hill is a limited liability company existing under the laws of the State of Delaware as an indirect, wholly-owned subsidiary of the Parent. The following chart sets out the material intercorporate relationships of GoldCo as at the date of this Technical Report:

The Technical Report includes a summary of exploration activities and historical mining conducted on the Property to date and recommendations for future work. The Report has been written on behalf of the Optionees and the Issuer in order to support a transaction whereby the Parent will "go public" by way of a "reverse take-over" of the Issuer under the policies of the TSX Venture Exchange and has been prepared in accordance with the guidelines set out by the Canadian Securities Association and NI 43-101 Standards of Disclosure for Mineral Projects (2011).

The FAD deposit is located south of the i-80 Gold Corp's Ruby Hill project (which includes the Archimedes pit and was operated by Placer/Barrick). Unless otherwise indicated, the term "Ruby Hill", as used throughout this Report, refers to the historic Ruby Hill mine and its associated mineral claims (Ruby Hill 1, Ruby Hill 2, and Ruby Hill FR – see Table 4-1), which are located on the Property and are part of the FAD mineral concession, and does not refer to the project operated by i-80 Gold Corp under the same name. The i-80 Gold Corp project is discussed in Section 15.0 of this Report.

Geologically, the FAD deposit is a continuation of the historic Ruby Hill mineral deposit that has been down-dropped and offset by post-mineralization faults. However, the exact mineralization between Ruby Hill and FAD are not the same. Ruby Hill is an oxide deposit, and FAD is sulfide-hosted associated with carbonate replacement.

This particular region of the Eureka-Battle-Mountain trend has a history of base metal deposits which are associated with Carbonate Replacement deposits of lead-silver-zinc-gold mineralization which were discovered in the Eureka district in 1864 with substantial production primarily from 1870 to 1890.

The existence of the FAD deposit was hypothesized in the 19th century when miners noticed the abrupt termination of the Ruby Hill deposit at the Ruby Hill Fault. Due to the fact that Ruby Hill was so productive -- indeed, mines in the region dominated the late-19th century lead metals market, the idea that the deposit continued was attractive to large-scale mining companies (lead by Hecla). As a result, in the mid-20th century, they began a large-scale exploration effort which cost $3M in 1950 (about $20M today). This effort discovered the FAD deposit, an underground high-grade sulfide polymetallic mineral body containing lead, zinc, copper, silver, and gold. As hypothesized, Hecla confirmed that a series of post-mineralization normal faults has down-dropped a portion of the original Ruby Hill mineralization deposit down to ~2,500 feet below ground surface, with a second normal fault further offsetting the deposit a total of 3,000 feet below ground surface. Due to challenges with groundwater and drilling, and due to the high cost of the project, the exploration efforts were terminated, and the mine was never put into production.

However, sufficient drilling was conducted to prove the existence of the FAD deposit, and to perform preliminary non-compliant calculations of the potential tonnage and grade of mineralized rock. This historic work indicated that FAD may be an attractive high-grade underground mineral exploration target which could potentially be turned into a profitable mining operation.

It is important to note that the FAD deposit is adjacent to, and in some cases, beneath the Ruby Hill deposit, but it has been separated from the Ruby Hill claims because of the differing mining methods and process methods required to process the FAD versus the Ruby Hill deposits.

The following technical report presents the FAD deposit according to the requirements of NI 43-101. It presents the site conditions, legal framework, geology, historical exploration results, and describes the ongoing exploration occurring at the site at the date of submittal of this report.

1.2 Property Ownership and Description

Figure 1-1 shows the location of the FAD project. The Property consists of 156 unpatented lode mining claims, and 110 patented mine claims. The claims are located in the Eureka County, Nevada, in Sections 14, 15, 16, 17, 20, 21, 22, 23, 26, 27, 28, 29 Township 0190N, Range 053E. Ten patented lode mining claims meet the requirements for classification as unpatented dependent mill site claims (Henry and Sherman, 2012). These claims are in four claim blocks within the core of the patented claim block. The remainder of the unpatented claims and fee land parcels are generally contiguous. The total area of the unpatented claims is 2,844.8 acres, and the total area of the patented mine claims is 316.6 acres. The total area of the mill site claims is 46.3 acres, and this area has been included in the prior calculation of total patented claims.

Figure 1-1: Location of the FAD Property

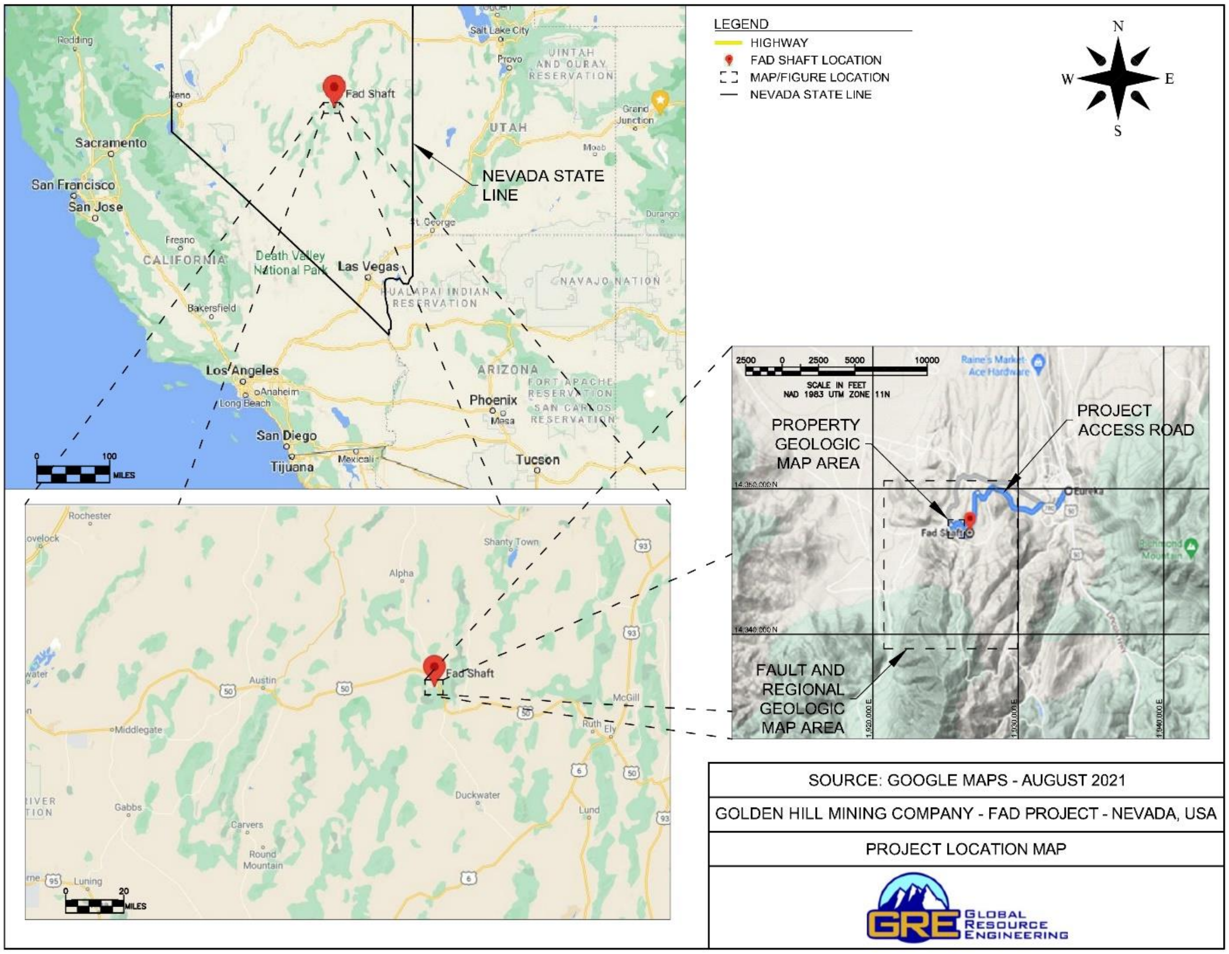
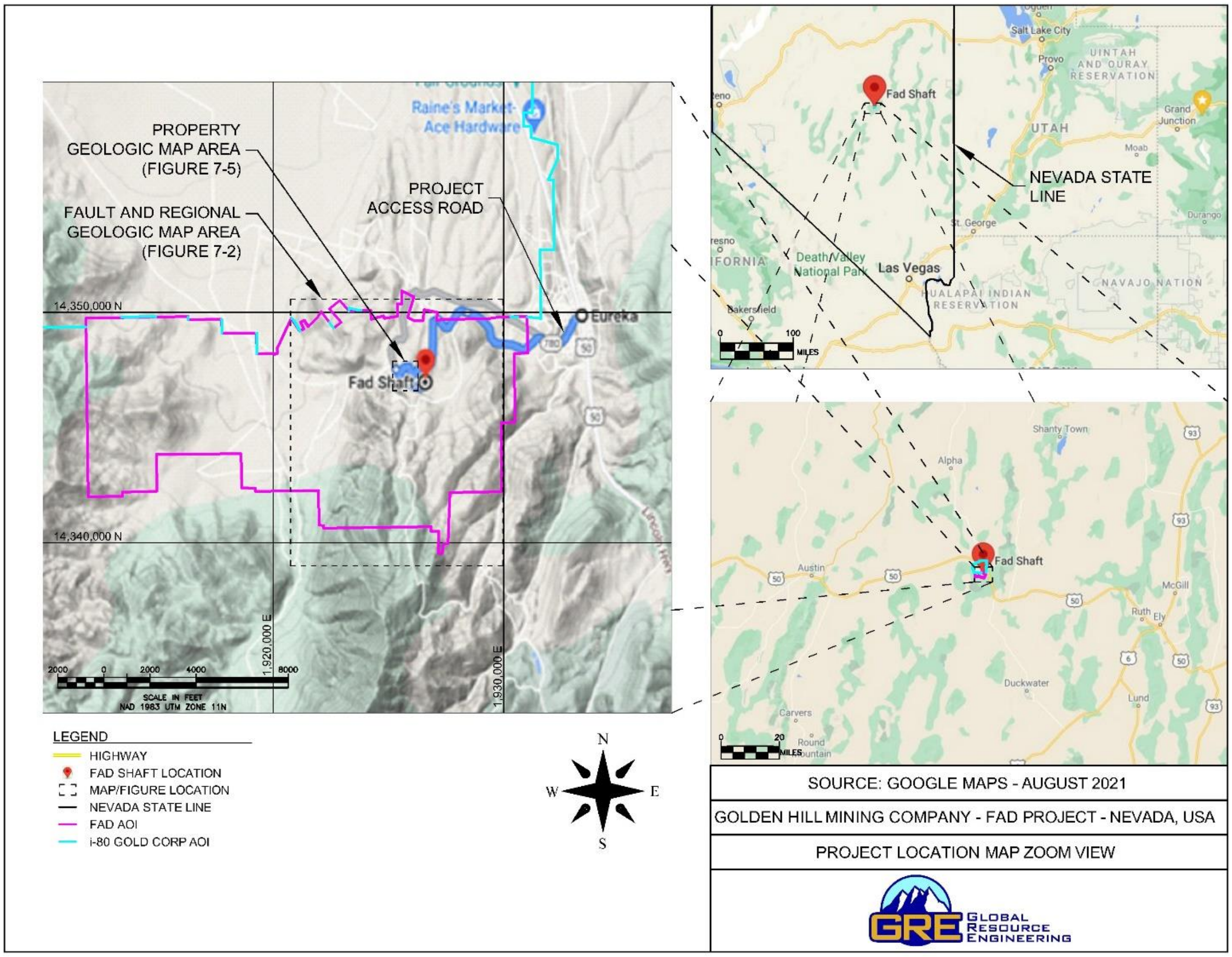


Figure 1-2 shows a closer view of the FAD project; specifically, the FAD Area of Interest (AOI) is the boundary around all patented and unpatented mining claims held by Golden Hill. Figure 1-2 also shows the i-80 Gold Corp project immediately to the north and adjacent to the FAD AOI.

Figure 1-2: Location of the FAD Property Zoom View



1.3 Geology and Mineralization

The Eureka mining district occupies the southern tip of the Battle Mountain – Eureka trend of Carlin-type gold and base metal mineralization in east-central Nevada, and contains a series of gold and base metals deposits (Nolan, 1962). The Eureka district is characterized by gold-silver-lead polymetallic carbonate replacement and Carlin-type gold deposits, which are the two-primary deposit-types within the district.

The stratigraphic section exposed in the Eureka district consists of a thick section of Early Cambrian to Early Cretaceous carbonate and clastic rocks that have been intruded or overlain by numerous intrusive plugs, stocks, dikes, sills, lava flows, and tuffs ranging from Cretaceous to Oligocene in age.

More than 2,100 m (>7,000 feet) of Cambrian rocks underlie the Eureka district, although, because of deformation, in no place is the complete Cambrian section intact. Cambrian rocks comprise, from oldest to youngest, Prospect Mountain Quartzite, Pioche Shale, Eldorado Dolomite, Geddes Limestone, Secret Canyon Shale, Hamburg Dolomite, Dunderberg Shale, and the Windfall Formation (Nolan and others, 1956). The Cambrian siliciclastic and carbonate rocks are overlain by Ordovician through Early Cretaceous sedimentary strata, Oligocene volcanic rocks, and Quaternary colluvium.

Middle and Late Cambrian Eldorado Dolomite and Hamburg Dolomite are the important host rocks for the carbonate replacement and Windfall gold deposits. Lesser amounts of replacement mineralization and some gold deposits occur in carbonate rocks of the Late Cambrian Windfall Formation and Early and Middle Ordovician Pogonip Group. The characterization provided below summarizes more detailed descriptions by earlier workers (Hague, 1892; Nolan et al., 1956; Nolan, 1962) and emphasizes those units which are demonstrated gold mineralization hosts in the Eureka district.

Although most part of the FAD property is covered by Quaternary alluvium, geological maps, sections, and holes presented by Nolan (1962), Nolan and others (1956), Vikre (1998), and Hoge et al. (2015) show that Cambrian-Ordovician sedimentary rocks, Cretaceous granodiorite and Quartz porphyry, and Tertiary Volcanic rocks around the property overlain by Quaternary alluvium. More than 1,000 m of litho-stratigraphic units were defined and mapped within the property. Sedimentary rocks are the most abundant in the study area. In the north part of Ruby Hill and around the property, a part of the stratigraphic column includes the lower Paleozoic formations exposed on the surface. Sedimentary rocks within the property in drill holes and in underground opening of the Ruby Hill area and the property include, from oldest to youngest, Prospect Mountain Quartzite, Eldorado Dolomite, Geddes Limestone, Secret Canyon Shale, Hamburg Dolomite, Windfall Formation, and Pogonip Group.

Igneous activity in the heart of the Eureka district occurred in at least two discrete periods, mid-Cretaceous and mid-Cenozoic (Blake et al., 1975; Mortensen et al., 2000). The Cretaceous Ruby Hill or Mineral Hill stock, a granodiorite, is exposed immediately south of Ruby Hill. Nolan (1962) and Vikre (1998) have attributed carbonate replacement mineralization at Ruby Hill to fluid circulation related to emplacement of the Ruby Hill stock. There are numerous preexisting K-Ar ages with scattered results, whereas 40Ar/39Ar dating of igneous biotite and alteration muscovite yields ages of ~105–108 Ma (Vikre,1998). Mortensen et al. (2000) report a definitive U-Pb zircon age of 106.0 ± 1.6 Ma.

Sulfide replacement deposit on FAD property consists mainly of subequal amounts of pyrite, sphalerite, and galena, with subordinate amounts of hydrothermal dolomite, calcite, arsenopyrite, tennantite, pyrrhotite, quartz, and chalcopyrite. Locally, relatively pure pods of pyrite, galena, and sphalerite with dimensions of tens of centimeters exist within sulfide replacement masses north of Ruby Hill and in Prospect Mountain. Grain size of pyrite, sphalerite, and galena and hydrothermal dolomite ranges from – 1.0 to 4.0 mm in Ruby Hill deposits; sulfide aggregates in quartz porphyry tend to be slightly coarser grained. Gold, unobserved microscopically, occurs mostly in pyrite, based on metallurgical tests.

Jackson fault, Adams Fault, and Ruby fault are main structures around the FAD property. Workers in the northern Eureka district have entertained hypotheses that many faults possibly were conduits for fluids that produced base-metal mineralization, yet it is now established that many of the faults clearly offset the Ruby Hill stock and base-metal mineralization, as is also supported by data from ground magnetics and drilling (Vikre, 1998).

The northwest-striking, down-to-the-northeast Ruby Hill normal fault, along with the Martin and perhaps the Office faults, is one of the earliest normal faults to cut and offset the Ruby Hill stock and mid-Cretaceous carbonate-hosted base metal mineralization. The Jackson branch cuts and offsets the Ruby Hill fault. Thus, the Jackson fault system is probably mid-Cenozoic in age, postdating the Ruby Hill fault.

Existing data shows that the FAD deposit is a mid-Cretaceous disseminated carbonate-hosted base metal type deposit. The Eldorado dolomite (middle Cambrian) is the primary host rock. Ruby Hill stock, which was emplaced in the late Early Cretaceous, was a source of hydrothermal fluids, a source of sulfide deposits. However, none of the faults around the FAD deposit show that they acted as conduits for hydrothermal fluids. In contrast, Eldorado dolomite and the FAD deposit were both cut and offset by surrounding faults.

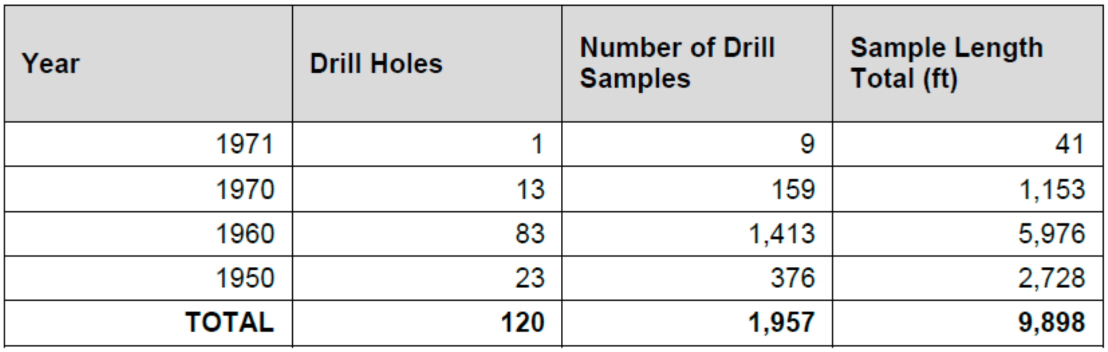
Because drilling and assaying are ongoing to the effective date of this report, only a part of assay results are available. 959 assay tests were available at the effective date of the report belonging to holes GH21-01, GH21-02, GH21-03, GH21-04, and GH21-05. The assay results have confirmed the existence of gold mineralization within the Eldorado dolomite. It is possible that a carlin-type deposit also exists on the FAD site (in addition to the sulfide deposit discussed above), but GRE believes still more studies are needed to determine if a carlin-type deposit or any overprinting mineralization has occurred within the FAD property.

1.4 Exploration History

As mentioned above, the FAD deposit was extensively explored by several prior leaseholders in the mid-20th century, with a consortium led by Hecla doing the greatest quantity of work (see Section 6.0). This exploration effort included the creation of two shafts to access the deposit (the Locan and FAD shafts), ~120 borings, and ~10,000 feet of exploration drilling. Historical exploration was a mixture of surface and underground drilling augmented by channel samples from drifts off of the FAD shaft, and 10,192 feet of development drilling, some of which was sampled. This effort occurred during an exploration period of approximately 20 years (with most of the work from between 1948 and 1963).

Since acquiring the FAD mineral concessions, the Spring Valley project, and the Ruby Hill Mine in 2015, and to date, Waterton has not undertaken or conducted any exploration work or exploration drilling on the FAD property. However, Waterton commissioned SRK to calculate a preliminary estimate of available tonnage at a selected Zinc Equivalent grade utilizing only historic data created by prior owners. Table 1-1 shows the sample set used for this preliminary calculation.

Table 1-1: Resource Database for SRK Calculation



Year	Drill Holes	Number of Drill Samples	Sample Length Total (ft)
1971	1	9	41
1970	13	159	1,153
1960	83	1,413	5,976
1950	23	376	2,728
TOTAL	**120**	**1,957**	**9,898**

Table 1-2 shows the preliminary resource across three mineral-bearing domains (underground regions defined by drilling and geology) assuming a 3% Zinc Equivalent cutoff grade.

Figure 1-3 shows the plan view of the three domains of mineralization as defined by the SRK study.

Figure 1-3: SRK Study – Mineralization Domain Map

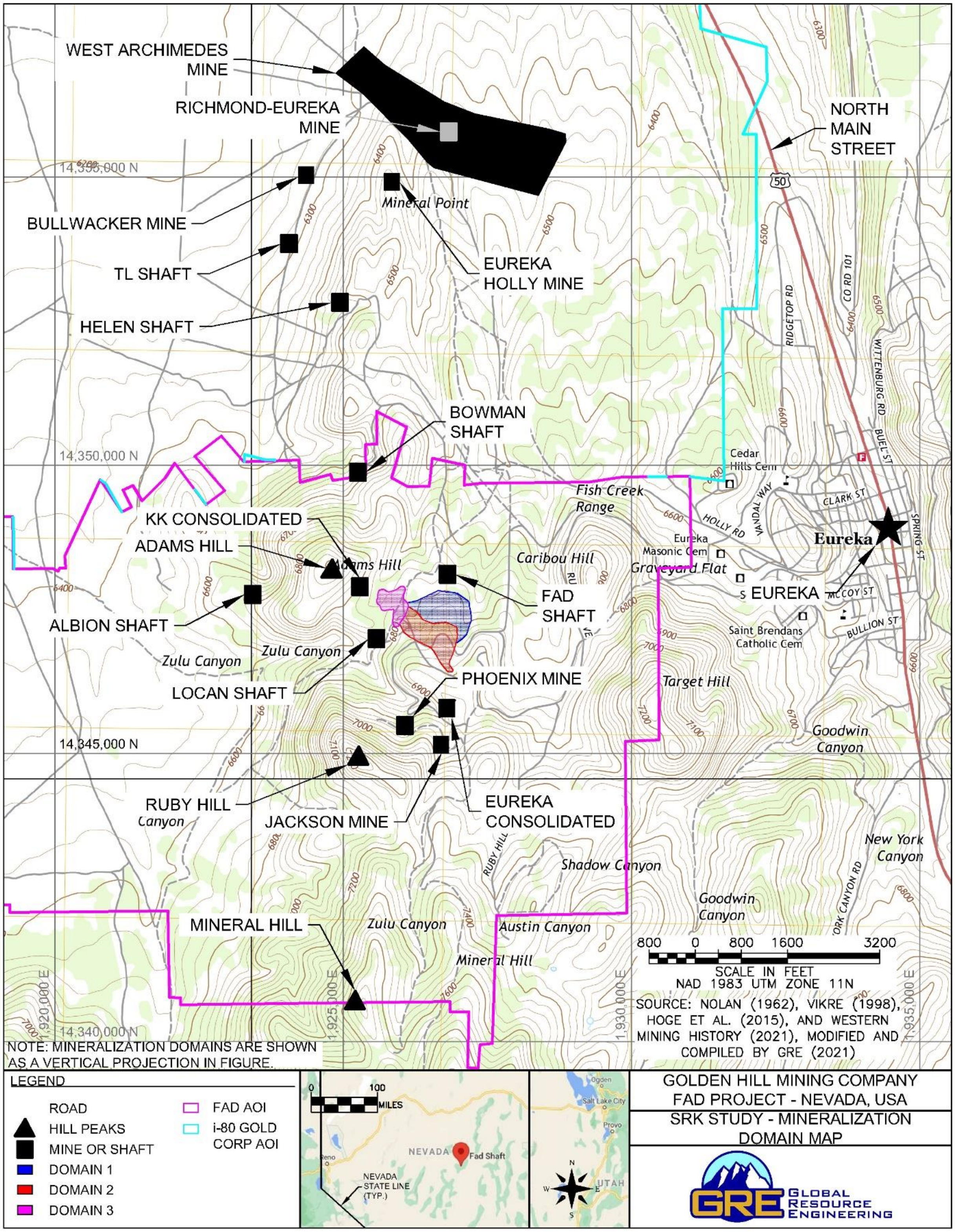
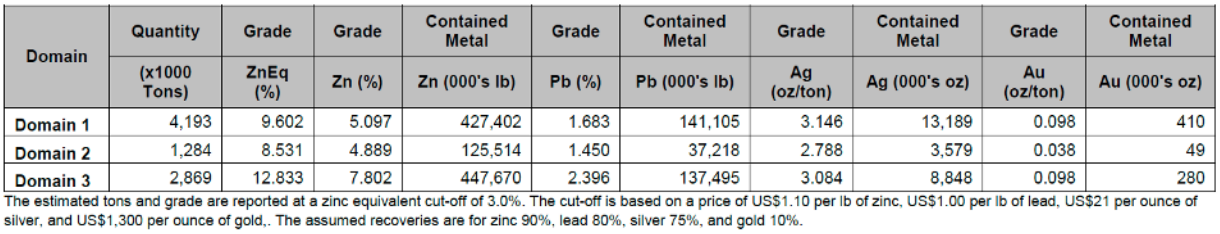


Table 1-2: Internal Historic Calculation of Tonnage and Grade at 3% ZnEq Cutoff



Domain	Quantity	Grade	Grade	Contained Metal	Grade	Contained Metal	Grade	Contained Metal	Grade	Contained Metal
	(x1000 Tons)	ZnEq (%)	Zn (%)	Zn (000's lb)	Pb (%)	Pb (000's lb)	Ag (oz/ton)	Ag (000's oz)	Au (oz/ton)	Au (000's oz)
Domain 1	4,193	9.602	5.097	427,402	1.683	141,105	3.146	13,189	0.098	410
Domain 2	1,284	8.531	4.889	125,514	1.450	37,218	2.788	3,579	0.038	49
Domain 3	2,869	12.833	7.802	447,670	2.396	137,495	3.084	8,848	0.098	280

The estimated tons and grade are reported at a zinc equivalent cut-off of 3.0%. The cut-off is based on a price of US$1.10 per lb of zinc, US$1.00 per lb of lead, US$21 per ounce of silver, and US$1,300 per ounce of gold,. The assumed recoveries are for zinc 90%, lead 80%, silver 75%, and gold 10%.

The reader is cautioned that the Waterton/SRK calculations presented above are neither a Resource nor a Reserve as defined by NI 43-101. The calculation did not follow standards set forth in NI 43-101 and current CIM standards for mineral resource estimation (as defined by the CIM Definition Standard on Mineral Resources and Reserves dated May 10, 2014). Golden Hill has not done sufficient work to classify this historical estimate as a current mineral resource and have referred to this estimate as a "historical resource"; they are not treating it, or any part it, as a current mineral resource. This historical resource estimate should not be relied upon and has only been included to demonstrate the mineral potential of the FAD Property.

Furthermore, the recoveries estimated at the bottom of Table 1-2 are estimated, and not based on metallurgical test data. Golden Hill has referred to these metallurgical studies as "historical metallurgical estimates" and are not treating it, or any part it, as a current assessment of metallurgical recovery. This historical study should not be relied upon, and this discussion has only been included to demonstrate the metallurgical potential of the FAD deposit.

However, prior exploration and SRK's non-compliant resource estimates indicate that future exploration of the FAD deposit is warranted.

1.5 Author's Site Visit

Dr. H. Samari conducted an on-site inspection of the project from the 16 to 17 August 2021. During the site visit, the QP conducted a general geological inspection of the FAD area, including checking the exposed formations, lithologies, and mineralization. Since there is no core sample from historical drilling campaigns, the site visit was focused on checking the existing core samples, which were collected by Golden Hill from one and a half holes out of eight designed holes for the 2021 drilling program. Because holes GH21-01 and GH21-02 did not have any specific visible mineralization intervals along with the core boxes and no completed assay data at the time of field visit, no check sample was taken by QP.

1.6 Recommendations

GRE believes that the FAD deposit is indeed the geologically-offset extension of the prolific Ruby Hill Deposit. Prior exploration and non-compliant resource calculations indicate that FAD may become an economically-viable high-grade underground sulfide polymetallic mineral deposit in the future. However, more exploration is required.

As seen in Table 1-3 below, the Phase I drilling program is nearly complete. This program is described in detail (with the best available information) in Section 10.0.

GRE recommends Phase 2 of exploration and resource estimation for the FAD project. In this phase, the FAD resource statement based on the historical data and reviewal of the SRK resource estimate in 2017, will be revised. This effort would rely heavily on the Hecla Mining Company feasibility studies dated 1974 resource but would be validated by the new Qualified Person and remodeled based on the requirements of NI 43-101. The recommended Phase 2 exploration totals $2,600,000 (Table 1-4).

Due to the FAD deposit type and its location (underground carbonate replacement deposit), evidence of mineralization (sulfide mineralization), and sanding alteration (see Section 7.5.4), a large scale and deep targeted drilling campaign is highly recommended for Phase 2.

1.7 Recommended Budget

Table 1-3: Phase 1 Ongoing Drilling Program, Costs, and Tasks

Phase 1: 2021-2022 Drilling (Complete, or Pending Assay Results)	
Activity Type	**Cost**
Exploration Geology (Staffing, Assay Lab, NI43-101 Report, Etc.)	$410,000
Exploration Drilling – 7 borings, 5,200m @ ~$409/meter	$2,121,235
Property and Claims Fees	$25,000
Phase 1 Activities Subtotal	**$2,566,235**

Source: Golden Hill, 2021

Phase 1: 2022 Drilling (Pending)	
Activity Type	**Cost**
Exploration Geology (Staffing, Assay Lab, NI43-101 Report, Etc.)	$77,575
Exploration Drilling – 1 boring, 300m @ ~$409/meter	$122,700
Phase 1 Activities Subtotal	**$200,275**

Table 1-4: Phase 2 Exploration and Resource Estimation

Phase 2: 2022 Exploration and Resource Estimation	
Activity Type	**Cost**
Data Compilation	$50,000
Delineation Drilling – 3,800m @ $575/meter	$2,185,000
Analytical (1,800 samples @ $75/sample)	$135,000
Earthworks	$30,000
Environmental	$100,000
Permitting	$100,000
Phase 2 Activities Subtotal	**$2,600,000**

2.0 INTRODUCTION

This Technical Report was amended and restated on February, 2023 from the original Report issued on April 7, 2022. The revision and amendments do not change the results presented in the Report.

Global Resource Engineering ("**GRE**") was engaged by the Optionees to complete the Report for the Optionees and the Issuer, summarizing the geology, exploration history and acquisition of the FAD property. The Technical Report includes a summary of exploration activities and historical mining conducted on the Property to date and recommendations for future work. The Report has been written on behalf of the Optionees and the Issuer in order to support a transaction whereby the Parent will "go public" by way of a "reverse take-over" of the Issuer under the policies of the TSX Venture Exchange and has been prepared in accordance with the guidelines set out by the Canadian Securities Association and NI 43-101 Standards of Disclosure for Mineral Projects (2011).

The FAD Property ("**the Project**" or "**the Property**") is located in Eureka County, Nevada USA, in the Prospect Mountains. The Property is situated approximately 1.5 miles (2.3 km) east of the town of Eureka, Nevada. The Project comprises 156 unpatented lode mining claims, and 110 fee land parcels (also called patented claims), totaling approximately 3,627 gross acres (1,467.8 hectares).

The FAD deposit is located south of the i-80 Gold Corp's Ruby Hill project (see Figure 1-2). Unless otherwise indicated, the term "Ruby Hill", as used throughout this Report refers to the historic Ruby Hill mine and its associated mineral claims (Ruby Hill 1, Ruby Hill 2, and Ruby Hill FR – see Table 4-1), which are located on the Property and are part of the FAD mineral concession and does not refer to the project operated by i-80 Gold Corp under the same name. The i-80 Gold Corp project is discussed in Section 15.0 of this Report.

The FAD project is being assessed by Golden Hill for its carbonate-replacement polymetallic base metal mineralization potential. The Project is likely the physical offset of the prolific Ruby Hill deposit which produced 2 million tons of mineralized material with a value of $122 million, of which 80% was the Ruby Hill deposit (See Section 6.0, and Hecla 1966). The historic production report does not state if the dollars are inflation-adjusted or not. If adjusted to inflation, the Ruby Hill production equates to roughly $1B in 2021 dollars, but it is important to note that historic production estimates are frequently unreliable. The reader is further cautioned that the historical mineralization produced from deposits within Ruby Hill Mining District may not be necessarily indicative of mineralization at the FAD Property. Furthermore, some of this historic production came from mineral extraction within i-80 Gold Corp's concession located north of the FAD AOI.

The existence of the FAD deposit was hypothesized in the 19th century when miners noticed the abrupt termination of the Ruby Hill deposit at the Ruby Hill Fault. Due to the fact that Ruby Hill was so productive -- indeed, mines in the region dominated the late-19th century lead market, the idea that the deposit continued was attractive to large-scale mining companies (lead by Hecla). As a result, in the mid-20th century, they began a large-scale exploration effort which cost $3M in 1950 (about $20M today). This effort discovered the FAD deposit, a high-grade sulfide polymetallic mineral body containing lead, zinc, copper, silver, and gold. As hypothesized, Hecla confirmed that a series of post-mineralization thrust faults has down-dropped a portion of the original Ruby Hill mineralization deposit down to ~2500 feet below ground surface, with a second thrust fault further offsetting the deposit a total of y feet below ground surface. Due to challenges with groundwater and drilling, and due to the high cost of the project, the exploration efforts were terminated, and the mine was never put into production.

However, sufficient drilling was conducted to prove the existence of the FAD deposit, and to perform preliminary non-compliant calculations of the potential tonnage and grade of mineralized rock. This historic work indicated that FAD may be an attractive high-grade mineral exploration target which could ultimately be turned into a profitable mining operation.

Global Resource Engineering ("**GRE**") was engaged by the Optionees to complete the Report for the Optionees and the Issuer, summarizing the geology, exploration history and acquisition of the FAD property. The intent and purpose of this Technical Report is to provide a geological introduction to the Property, to summarize historical work completed on the Property from 1948 to 1974 and to provide recommendations for future exploration work programs. This Technical Report has been prepared in accordance with the Canadian Securities Administration's (CSA's) 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) "Best Practices and Reporting Guidelines" for disclosing mineral exploration. The effective date of this Technical Report is April 7, 2022.

2.1 Authors and Site Inspection

The authors of this Technical Report include Dr. Hamid Samari, Ph.D., MMSA 01519QP and Mr. Larry Breckenridge, PE, CO -- No. 38048 of Global Resource Engineering. Both authors are independent of Golden Mining Hill and are Qualified Persons (QPs) as defined by the CSA's NI 43-101. The CIM defines a Qualified Person 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." Both Dr. Samari and Mr. Breckenridge have worked on epithermal precious metals mining development projects in the United States, Mexico, Peru and elsewhere in Latin America including Gold Springs and Pinson in Nevada, Topia, and Santa Elena in Mexico, and the Corani silver project in Southern Peru.

Dr. Hamid Samari is a Principal Geologist with GRE and a member of the Mining and Metallurgical Society of America (MMSA 01519QP) with a special expertise in geology. Dr. Samari has worked in the geology, mining and civil industry for more than 20 years since his graduation from university.

Mr. Larry Breckenridge is a Principal Mine Water Engineer (Environmental Engineer) with GRE and is a Professional Engineer CO -- No. 38048. Mr. Breckenridge has over 25 years of experience as an environmental engineer for precious metals mines in the Western Hemisphere. Mr. Breckenridge was a critical member of the team that permitted and developed the Santa Elena Silver-Gold deposit in Sonora, Mexico, for SilverCrest Mines (now owned by First Majestic Silver).

Dr. Samari conducted a QP inspection of the FAD property on August 16th and 17th, 2021. The visit included a geological inspection of the Property, including the observation of geological formations and lithologies, and mineralization within the area and the core boxes of the hole GH21-01 and part of hole GH21-02.

2.2 Sources of Information

This Technical Report is a compilation of proprietary and publicly available information. The information, opinions, conclusions, and estimates presented in this Technical Report are based on the following:

- Information provided by Golden Hill.
- Information provided by Waterton.
- Historical information and data from previous owners of FAD property, including Hecla.
- Data, reports, and opinions from third-party entities such as the USGS or academic research; and
- Information gathered during the authors' site visit to the Property.

The background information in the history section was derived from historical reports and studies by Walter Andrew Paroni, Hecla Mining Company (Result of Stage I Investigation) dated 1966, and RK's studies dated 2017. Information on the regional geology of the FAD property is largely derived from previous reports completed by Nolan (1962), Vikre (1998), Fiori et al. (2014), and Hoge et al. (2015). All sources of information are listed in Section 19.0.

2.3 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) and 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) 1983;
- Currency in United States dollars (US$),
- 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));
- Lengths are quoted in feet (ft), kilometers (km), meters (m) or millimeters (mm).

3.0 RELIANCE ON OTHER EXPERTS

The authors are not qualified to provide an opinion or comment on issues related to legal agreements, royalties, permitting and environmental matters. This limited disclaimer of responsibility includes the following:

- The QPs relied entirely on background information and details regarding the nature and extent of Mineral and Land Titles (in Section 4.2) provided by Golden Hill. The legal and survey validation of the claims are not in the author's expertise and the QPs are relying on information provided by Golden Hill, through its representatives.

- The QPs relied entirely on information regarding royalties and the Waterton purchase transaction that was provided by Golden Hill, through its representatives, to Golden Hill (Section 4.2 and Section 4.3).

- The QP relied partially on information regarding permitting and environmental status of the Project that was provided by Golden Hill and is summarized to the best of the author's knowledge in Section 4.4.

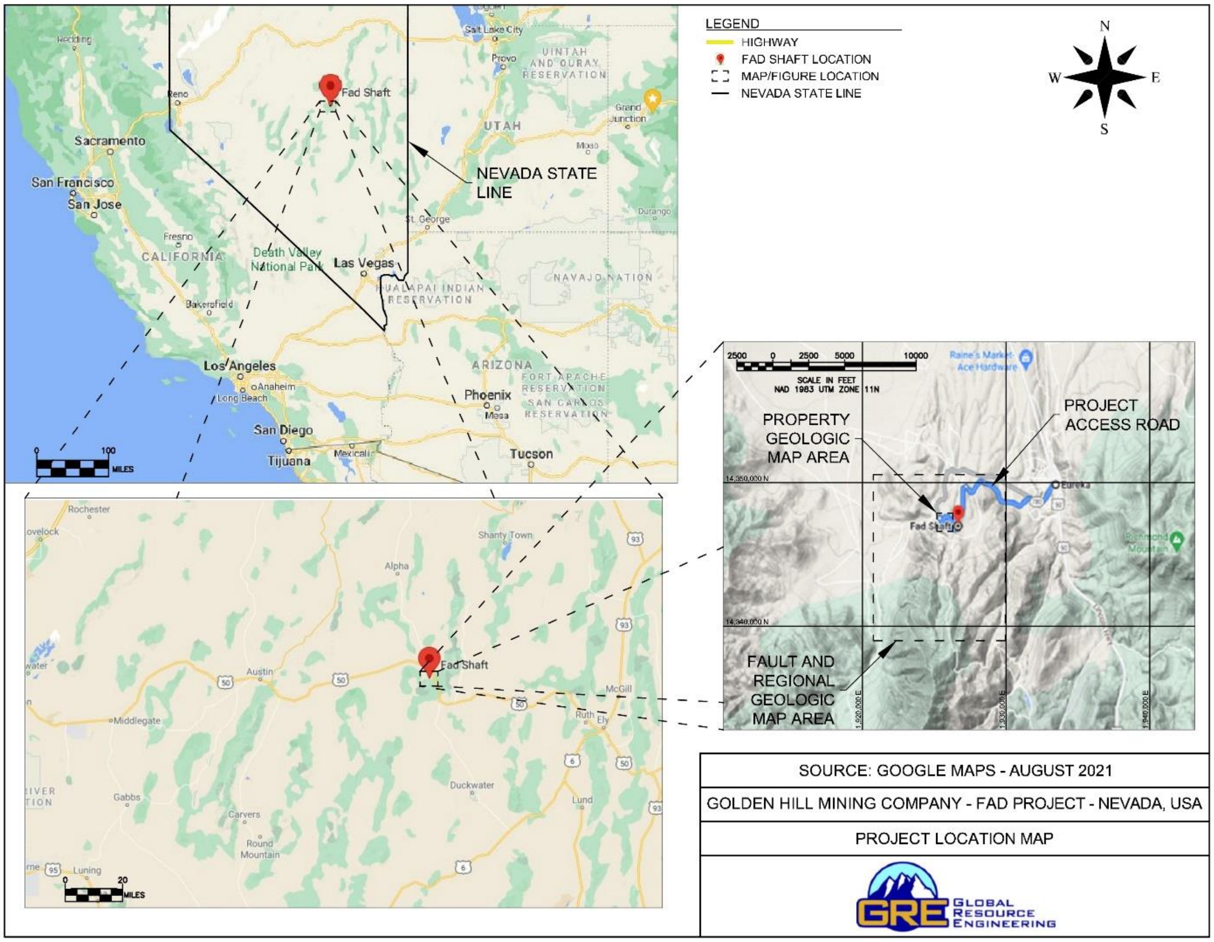
- The QPs relied on information about the electrical grid provided by Kevin Robinson, Regional Manager of Mt. Wheeler Power, Ely Nevada (Section 5.4).

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 Description and Location

The FAD Property ("**the Project**" or "**the Property**") is located in Eureka County, Nevada USA, in the Prospect Mountains. The Property is situated approximately 1.5 miles (2.3 km) east of the town of Eureka, Nevada (see Figure 4-1 and Figure 4-2).

Figure 4-1: Location of the FAD Property

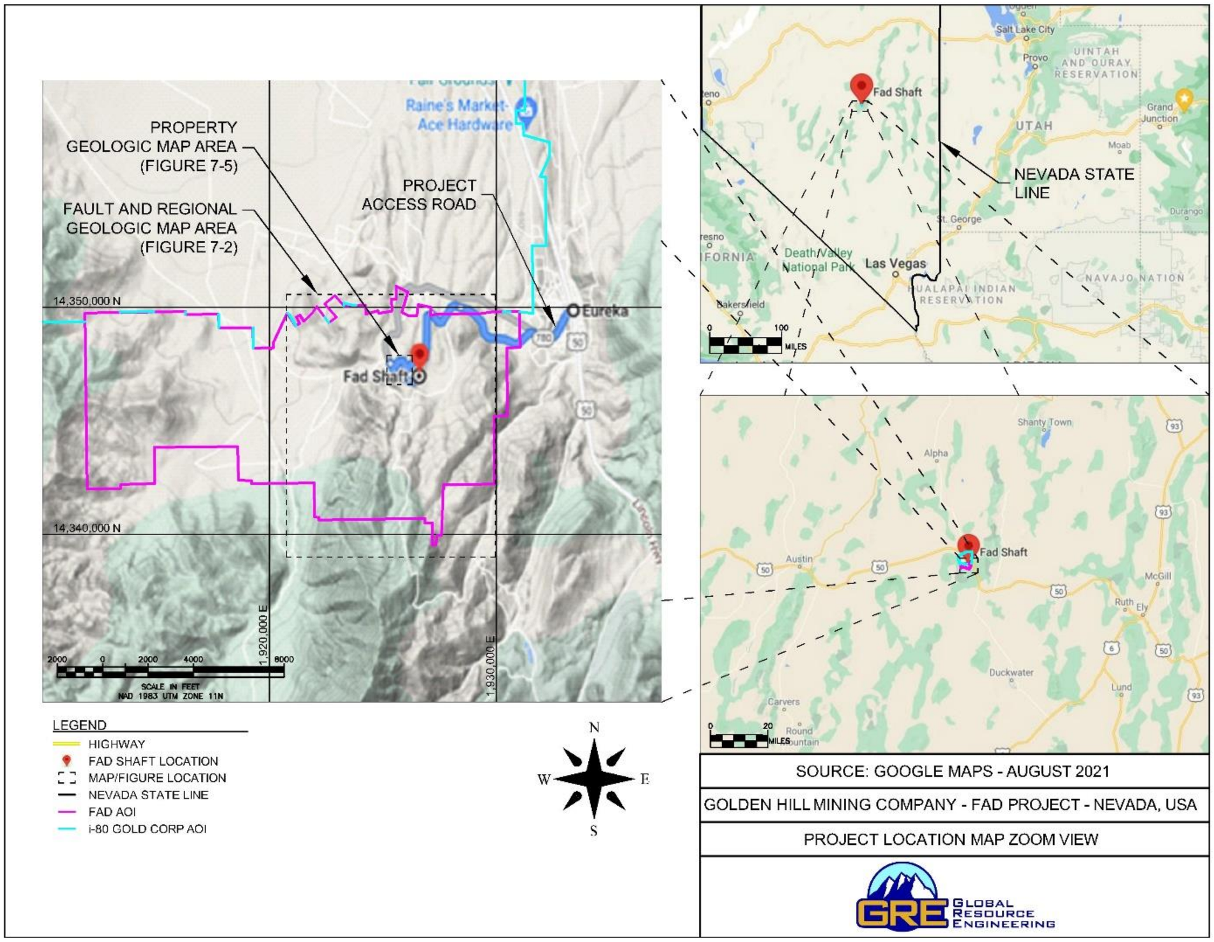


SOURCE: GOOGLE MAPS - AUGUST 2021

GOLDEN HILL MINING COMPANY - FAD PROJECT - NEVADA, USA

PROJECT LOCATION MAP

Figure 4-2: Location of the FAD Property Zoom View



As mentioned previously, the i-80 Gold Corp Project (called Ruby Hill) is located immediately north of the FAD AOI.

4.2 Mineral Tenure

The Property consists of 156 unpatented lode mining claims, and 110 patented mine claims. (Figure 4-1; Table 4-1 and Table 4-2). The claims are located in the Eureka County, Nevada, in Sections 14, 15, 16, 17, 20, 21, 22, 23, 26, 27, 28, 29 Township 0190N, Range 053E. Ten patented lode mining claims (see Table 4-1) meet the requirements for classification as unpatented dependent mill site claims (Henry and Sherman, 2012). These claims are in four claim blocks within the core of the patented claim block. The remainder of the unpatented claims and fee land parcels are generally contiguous. The total area of the unpatented claims is 2,844.8 acres, and the total area of the patented mine claims is 782 acres.

Patented mill site claims total 46.3 acres (18.7 ha).

The owner of record of the patented mining claims, unpatented mining claims, and leases is FAD Mining Company, LLC. All of the securities of FAD Mining Company, LLC are held by Waterton Nevada Splitter, LLC and Waterton Nevada Splitter II, LLC (together, "**Waterton**"), which is controlled by certain private equity funds managed by Waterton Global Resource Management, Inc.

FAD Mining Company, LLC also has the obligation of maintaining the relevant leases. 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 September 1st every year. The federal BLM maintenance fees and the filing fees and taxes for the FAD have been paid in full for 2021-2022. A complete listing of all claims on file with the BLM and Eureka County is presented in Table 4-1. All of the unpatented (BLM) claims are valid until August 31, 2022.

The quitclaim deed 2021-244821 registered in Eureka County, NV, conveyed all access rights and easements appurtenant to the patented and unpatented mining claims in Table 4-1 to the FAD Mining Company LLC. To the extent there are recorded easements for the benefit of the patented mining claims, they remain effective and FAD has the right to use them.

Additionally, the owner of an unpatented mining claim has the right of access across the federal public lands subject to BLM's regulation of surface use.

Table 4-1: FAD Property Patented Claims

Patented Claim Name	Mineral Survey Number	Patent Number (if known)	Mineral Type	Ownership Type
ACOUCHMENT	2866	4577	Lode	Owned
ADAMS AND FARREN DEEP MINE	116		Lode	Owned
ALBION 1	2860	4573	Lode	Owned
ALBION 2	2861	4579	Lode	Owned
ALBION 3	2862	4582	Lode	Owned
ALBION CONSOLIDATED	2863	4589	Lode	Owned
ANTARCTIC	2855	4588	Lode	Owned
APEX	2865	4576	Lode	Owned
ARCTIC	2857	4580	Lode	Owned
AT LAST	47	2968	Lode	Owned
ATLANTIC	2854	4587	Lode	Owned
BADGER	218	5558	Lode	Owned
BIG TR	2871	4578	Lode	Owned
BROWN MILLSITE	139	3742	Lode	Owned
BROWN	87	1583	Lode	Owned
BUCKEYE	37	389	Lode	Owned
BUCKEYE MILLSITE	113	3607	Lode	Owned
CALLAWAY	57	1121	Lode	Owned
CARSON	68	882	Lode	Owned
CARSON MILLSITE	137	4198	Lode	Owned
CENTRAL HILL	273	8097	Lode	Owned

Patented Claim Name	Mineral Survey Number	Patent Number (if known)	Mineral Type	Ownership Type
CHAMPION	38	390	Lode	Owned
CHAMPION MILLSITE	114	3608	Lode	Owned
CHARTER	297	10344	Lode	Owned
CLIFF MINE	2856	4581	Lode	Owned
CONNELL	190	4310	Lode	Owned
DAVIES NO. 2	231	4415	Lode	Owned
DAVIES	230	4414	Lode	Owned
DIAGONAL	200	4546	Lode	Owned
DON RICARDO	274	7415	Lode	Owned
FAD	3223	4575	Lode	Owned
FEBRUARY	3596	179187	Lode	Owned
FITZGERALD LODE	313	19065	Lode	Owned
FRANK	309	19816	Lode	Owned
FRIES	308	19815	Lode	Owned
GERALDINE LODE	284	8023	Lode	Owned
GRAND CENTRAL	174	4077	Lode	Owned
GRANT LODE	73	1222	Lode	Owned
GREAT EASTERN	165	4555	Lode	Owned
GREEN SEAL	167	6169	Lode	Owned
GULCH	2872	4572	Lode	Owned
HONEYMOON AMENDED	2868	4571	Lode	Owned
HOPE CONSOLIDATED	206	4800	Lode	Owned
IONE LODE	74	1221	Lode	Owned
ISANDULA	213	5677	Lode	Owned
JACK & SCANLON	217	6057	Lode	Owned
JACKSON	98	2110	Lode	Owned
KEMP & KEEN	265	7886	Lode	Owned
LA VETA	2873	4569	Lode	Owned
LOOKOUT	43	392	Lode	Owned
LUCKY MAN	2852	4583	Lode	Owned
LUPITA	49	2204	Lode	Owned
MAIN SHAFT	2864	4586	Lode	Owned
MAMMOTH	41	383	Lode	Owned
MARCELINA EAST	119	2830	Lode	Owned
MARRIAGE AMENDED	2867	4568	Lode	Owned
MAUD C	307	19166	Lode	Owned
MONARCH 2	4686	17531	Lode	Owned
MONARCH 3	4686	17531	Lode	Owned
NOVEMBER	3596	179187	Lode	Owned

Patented Claim Name	Mineral Survey Number	Patent Number (if known)	Mineral Type	Ownership Type
NUGET	46	2066	Lode	Owned
ORIGINAL BALTIC MINE	112	2297	Lode	Owned
PEACH	2869	4567	Lode	Owned
PHIL SHERIDAN	270	15562	Lode	Owned
PORTER MILLSITE	138	4197	Lode	Owned
PORTER	86	1582	Lode	Owned
PRIDE OF THE WEST	267	7582	Lode	Owned
RAVINE	2858	4584	Lode	Owned
REAR GUARD	225	7528	Lode	Owned
REARGUARD MILLSITE	225	7528	Lode	Owned
REMNANTS	3252	4574	Lode	Owned
RICHMOND EXT. 1	4686	17531	Lode	Owned
RICHMOND EXT. 2	4686	17531	Lode	Owned
RICHMOND EXT. 4	4686	17531	Lode	Owned
RICHMOND EXT.	4686	17531	Lode	Owned
RICHMOND EXT.3	4686	17531	Lode	Owned
RICHMOND FR.	4686	17531	Lode	Owned
RICHMOND	64	885	Lode	Owned
RICHMOND RANCHO	211	4714	Lode	Owned
RUBY HILL 1	4686	17531	Lode	Owned
RUBY HILL 2	4686	17531	Lode	Owned
RUBY HILL FR.	4686	17531	Lode	Owned
SAVAGE	42	391	Lode	Owned
SENTINEL	40	382	Lode	Owned
SHALE	3596	179187	Lode	Owned
SHOO FLY 2	58	2294	Lode	Leased
SHOO FLY 3	59	2295	Lode	Leased
SILVER REGION	160	3751	Lode	Owned
SILVER STATE MINE	111	2296	Lode	Owned
SKYLARK	56	1120	Lode	Owned
SKYLARK MILLSITE	214	6093	Lode	Owned
ST. ANDREW LODE	242	9451	Lode	Owned
ST. ANDREWS MILLSITE	242		Lode	Owned
ST. DAVID	2859		Lode	Owned
ST. GEORGE	66	2265	Lode	Owned
ST. PATRICK MILLSITE	241		Lode	Owned
ST. PATRICK LODE	241	9640	Lode	Owned
STAR OF THE WEST	266	7981	Lode	Leased
SURPLUS MILLSITE	141	4923	Lode	Owned

Patented Claim Name	Mineral Survey Number	Patent Number (if known)	Mineral Type	Ownership Type
SURPLUS	85	1581	Lode	Owned
T R	2870	4570	Lode	Owned
TINNIE	195	10012	Lode	Owned
TIP-TOP	65	886	Lode	Owned
VICTORIA	161	3755	Lode	Owned
WESTERN & WINCHESTER	216	6412	Lode	Owned
WILSON	97	2109	Lode	Owned
CONTINENTAL	212	5684	Lode	Leased
HARLEM & EUREKA BELLE CON.	262		Lode	Owned
INDEPENDENT	248	6008	Lode	Leased
PATROON & GRAND DELIVERY CON.	261		Lode	Owned

Table 4-2: FAD Property Patented Claims

Unpatented Claim Name	NMC Number	Mineral Type	Ownership Type
ANN 16	NMC699913	Lode	Owned
ANN 17	NMC699914	Lode	Owned
ANN 18	NMC699915	Lode	Owned
ANN 19	NMC699916	Lode	Owned
ANN 20	NMC699917	Lode	Owned
ARC 42	NMC699868	Lode	Owned
ARC 59	NMC699885	Lode	Owned
ARC 60	NMC699886	Lode	Owned
ARC 61	NMC705151	Lode	Owned
ARC 63	NMC713811	Lode	Owned
HMC 4	NMC661368	Lode	Owned
HMC 8	NMC661371	Lode	Owned
HMC 9	NMC661372	Lode	Owned
JAY 1	NMC699949	Lode	Owned
JAY 2	NMC699950	Lode	Owned
JAY 3	NMC699951	Lode	Owned
JAY 8	NMC699956	Lode	Owned
JAY 9	NMC705152	Lode	Owned
R E 11	NMC699893	Lode	Owned
R E 12	NMC699894	Lode	Owned
R E 13	NMC699895	Lode	Owned
R E 14	NMC699896	Lode	Owned
R E 16	NMC699898	Lode	Owned
R E 17	NMC699899	Lode	Owned
R E 18	NMC699900	Lode	Owned

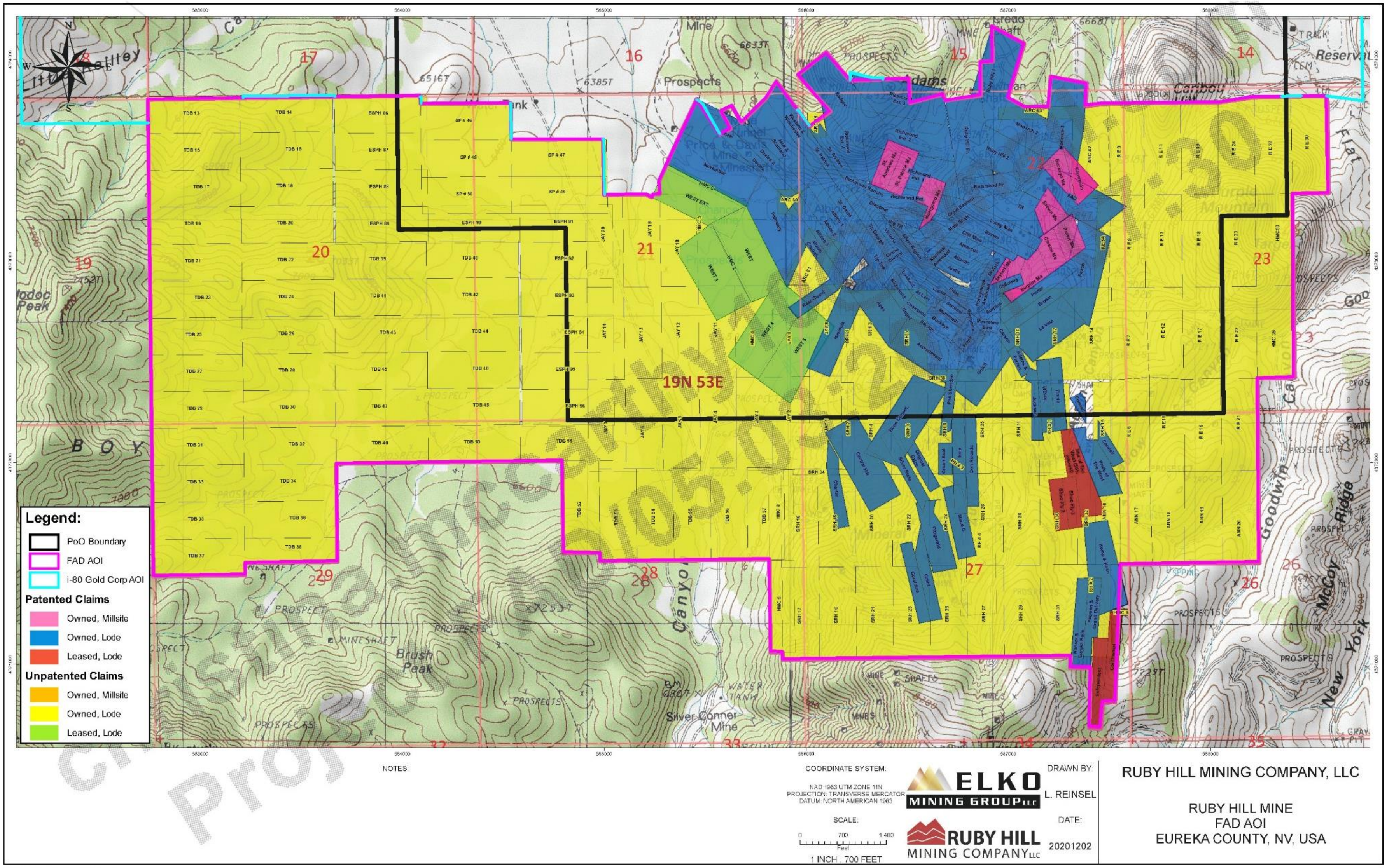
Unpatented Claim Name	NMC Number	Mineral Type	Ownership Type
R E 19	NMC699901	Lode	Owned
R E 6	NMC699888	Lode	Owned
R E 3A	NMC699887	Lode	Owned
R E 7	NMC699889	Lode	Owned
R E 8	NMC699890	Lode	Owned
R E 9	NMC699891	Lode	Owned
RH # 1	NMC489846	Lode	Owned
RH # 2	NMC489847	Lode	Owned
RH # 3	NMC489848	Lode	Owned
RH # 4	NMC489849	Lode	Owned
SRH 1	NMC699918	Lode	Owned
SRH 10	NMC699927	Lode	Owned
SRH 11	NMC699928	Lode	Owned
SRH 12	NMC699929	Lode	Owned
SRH 14	NMC699930	Lode	Owned
SRH 16	NMC699932	Lode	Owned
SRH 17	NMC699933	Lode	Owned
SRH 15	NMC699931	Lode	Owned
SRH 18	NMC699934	Lode	Owned
SRH 19	NMC699935	Lode	Owned
SRH 2	NMC699919	Lode	Owned
SRH 20	NMC699936	Lode	Owned
SRH 21	NMC699937	Lode	Owned
SRH 22	NMC699938	Lode	Owned
SRH 23	NMC699939	Lode	Owned
SRH 24	NMC699940	Lode	Owned
SRH 25	NMC699941	Lode	Owned
SRH 26	NMC699942	Lode	Owned
SRH 27	NMC808229	Lode	Owned
SRH 28	NMC699943	Lode	Owned
SRH 29	NMC699944	Lode	Owned
SRH 3	NMC699920	Lode	Owned
SRH 30	NMC699945	Lode	Owned
SRH 31	NMC699946	Lode	Owned
SRH 32	NMC699947	Lode	Owned
SRH 34	NMC699948	Lode	Owned
SRH 35	NMC1094131	Lode	Owned
SRH 36	NMC1094132	Lode	Owned
SRH 4	NMC699921	Lode	Owned
SRH 5	NMC699922	Lode	Owned
SRH 6	NMC699923	Lode	Owned
SRH 8	NMC699925	Lode	Owned
TDB 57	NMC1089553	Lode	Owned
WEST	NMC72585	Lode	Leased

Unpatented Claim Name	NMC Number	Mineral Type	Ownership Type
WEST 4	NMC661797	Lode	Leased
WEST 5	NMC661798	Lode	Leased
ESPH 90	NMC1076821	Lode	Owned
ESPH 91	NMC1076822	Lode	Owned
ESPH 92	NMC1076823	Lode	Owned
ESPH 93	NMC1076824	Lode	Owned
ESPH 94	NMC1076825	Lode	Owned
ESPH 95	NMC1076826	Lode	Owned
ESPH 96	NMC1076827	Lode	Owned
HMC 3	NMC661367	Lode	Owned
HMC 50	NMC1078382	Lode	Owned
HMC 39	NMC699710	Lode	Owned
HMC 5	NMC661369	Lode	Leased
HMC 2	NMC661366	Lode	Leased
HMC 6	NMC661370	Lode	Owned
Jay 11	NMC699957	Lode	Owned
JAY 12	NMC699958	Lode	Owned
JAY 13	NMC699959	Lode	Owned
JAY 14	NMC699960	Lode	Owned
JAY 18	NMC699961	Lode	Owned
JAY 19	NMC699962	Lode	Owned
JAY 20	NMC705153	Lode	Owned
JAY 4	NMC699952	Lode	Owned
JAY 5	NMC699953	Lode	Owned
JAY 6	NMC699954	Lode	Owned
JAY 7	NMC699955	Lode	Owned
R E 21	NMC699903	Lode	Owned
R E 22	NMC699904	Lode	Owned
R E 23	NMC699905	Lode	Owned
R E 24	NMC699906	Lode	Owned
R E 27	NMC699909	Lode	Owned
R E 30	NMC699910	Lode	Owned
TDB 40	NMC1089536	Lode	Owned
TDB 42	NMC1089538	Lode	Owned
TDB 44	NMC1089540	Lode	Owned
TDB 46	NMC1089542	Lode	Owned
TDB 48	NMC1089544	Lode	Owned
TDB 50	NMC1089546	Lode	Owned
TDB 51	NMC1089547	Lode	Owned
TDB 52	NMC1089548	Lode	Owned
TDB 53	NMC1089549	Lode	Owned
TDB 54	NMC1089550	Lode	Owned
TDB 55	NMC1089551	Lode	Owned
TDB 56	NMC1089552	Lode	Owned

Unpatented Claim Name	NMC Number	Mineral Type	Ownership Type
WEST 3	NMC661796	Lode	Leased
WEST EXT	NMC72591	Lode	Leased
TDB 13	NMC1089509	Lode	Owned
TDB 14	NMC1089510	Lode	Owned
TDB 15	NMC1089511	Lode	Owned
TDB 16	NMC1089512	Lode	Owned
TDB 17	NMC1089513	Lode	Owned
TDB 18	NMC1089514	Lode	Owned
TDB 19	NMC1089515	Lode	Owned
TDB 20	NMC1089516	Lode	Owned
TDB 21	NMC1089517	Lode	Owned
TDB 22	NMC1089518	Lode	Owned
TDB 23	NMC1089519	Lode	Owned
TDB 24	NMC1089520	Lode	Owned
TDB 25	NMC1089521	Lode	Owned
TDB 26	NMC1089522	Lode	Owned
TDB 27	NMC1089523	Lode	Owned
TDB 28	NMC1089524	Lode	Owned
TDB 29	NMC1089525	Lode	Owned
TDB 30	NMC1089526	Lode	Owned
TDB 31	NMC1089527	Lode	Owned
TDB 32	NMC1089528	Lode	Owned
TDB 33	NMC1089529	Lode	Owned
TDB 34	NMC1089530	Lode	Owned
TDB 35	NMC1089531	Lode	Owned
TDB 36	NMC1089532	Lode	Owned
TDB 37	NMC1089533	Lode	Owned
TDB 38	NMC1089534	Lode	Owned
TDB 39	NMC1089535	Lode	Owned
TDB 41	NMC1089537	Lode	Owned
TDB 43	NMC1089539	Lode	Owned
TDB 45	NMC1089541	Lode	Owned
TDB 47	NMC1089543	Lode	Owned
TDB 49	NMC1089545	Lode	Owned
ESPH 86	NMC1076817	Lode	Owned
ESPH 87	NMC1076818	Lode	Owned
ESPH 88	NMC1076819	Lode	Owned
ESPH 89	NMC1076820	Lode	Owned
SP #46	NMC604366	Lode	Owned
SP #47	NMC604367	Lode	Owned
SP #48	NMC604368	Lode	Owned
SP #49	NMC604369	Lode	Owned
SP #50	NMC604370	Lode	Owned

Figure 4-3 shows the FAD Claims.

Figure 4-3: FAD Property Claims Map



*RuHi_FAD_LandMap_2020_DsizeL.mxd

4.3 Royalties and Agreements

4.3.1 Option Agreement and Contingent Value Rights

Pursuant to a master transaction agreement dated March 31, 2021, among the Optionees and Waterton (as first amended on May 14, 2021, and subsequently amended on September 27, 2021, the "**Option Agreement**"), as well as FAD Mining Company, LLC ("**FAD Mining**"), an affiliate of Waterton, Golden Hill holds an option (the "**Option**") to acquire all of FAD Mining's interest in and to the FAD Deposit upon making an initial non-refundable payment in the amount of US$500,000 (the "**Initial Payment**") to FAD Mining.

The Option Agreement, as originally entered into on March 31, 2021, required Golden Hill to commence an exploration drill program (the "**Work Program**") on the FAD Deposit comprised of a minimum of US$2,500,000 in qualifying mineral exploration costs, which Work Program must be completed within five months following certain specified dates, and in any event not later than October 31, 2021. Upon completion of the Work Program, and provided that notice thereof (a "**Completion Notice**") has been delivered to the Optionors (as hereinafter defined) by the applicable outside date, the Optionees may exercise the Option within thirty (30) calendar days following delivery of the Completion Notice (the "**Option Notice Deadline**") by providing written notice to the Optionors that (i) the Optionees wish to exercise the Option, and (ii) the Parent has commenced or completed, a "go public transaction" (as defined in the Option Agreement).

The May 14, 2021 amendments to the Option Agreement gave effect to, among other things, the following: (i) introducing a requirement for the Optionors to deliver to the Optionees, at the closing of the purchase and sale of the FAD Deposit, an executed amendment (the "**Royalty Amendment**") to a certain royalty deed dated June 16, 2020, which amendment provides for certain adjustments to the rate(s) of the royalties originally payable with respect to the FAD Deposit under the original royalty deed, and (ii) memorializing the Optionees' irrevocable consent for the assignment of all of the rights and obligations of a third party originally a party to the Option Agreement to FAD Mining (FAD Mining together with Waterton, the "**Optionors**"). The aforementioned assignment was completed with the Optionees' consent on May 14, 2021, and on the same date, FAD Mining also acquired, from the said assignor, the properties subject to the Option Agreement, and related data.

The September 27, 2021 and March 25, 2022 amendments to the Option Agreement together gave effect to, among other things, the following: (i) deeming the Work Program Requirements (as described above) satisfied, and (ii) revising the terms of the payments payable by the Optionees to the Optionors, and in particular, providing that upon exercise of the Option, the Optionees will be entitled to receive the following:

i. a cash payment in the amount of US$5,000,000;

ii. such number of Resulting Issuer Shares (collectively, the "**Payment Shares**") as is equal to the greater of (i) that number of Payment Shares such that the Optionors would hold 35% of the issued and outstanding Resulting Issuer Shares (on a non-diluted basis), as calculated immediately following the closing of the Qualifying Transaction and the private placement of subscription receipts completed by the Parent in connection with the Qualifying Transaction (the "**Offering**") and after giving effect to the issuance of the Payment Shares (on an undiluted basis), and (ii) such number of Resulting Issuer Shares as is equal to US$15,000,000 divided by the United States dollar equivalent of the issue price per security in the Offering (being, C$2.10);

iii. one common share purchase warrant of the Resulting Issuer (a "**Payment Warrant**") for each two Payment Shares (plus any True-Up Shares (as defined below), if issued) issued (rounded down to the nearest whole Payment Warrant), to be issued on the date of the issuance of the True-Up Shares, with each Payment Warrant exercisable to purchase one Resulting Issuer Share until the date that is three years following the closing date of the Qualifying Transaction, at an exercise price equal to the lesser of:

    (A) the lesser of (A) a 30% premium to the volume weighted average price ("**VWAP**") per Resulting Issuer Share for the first five trading days of the Resulting Issuer Shares on the TSXV following the closing date of the Qualifying Transaction, or (B) a 30% premium to the issue price per per security in the Offering (being, $2.10); and

    (B) the lowest exercise price of any common share purchase warrants granted to participants in the Offering,

    in each case multiplied by the United States dollar equivalent, calculated as of the last business day immediately preceding the closing date of the Qualifying Transaction, and provided that the exercise price shall not be lower than C$0.55;

iv. on the first business day following the first five trading days of the Resulting Issuer Shares on the TSXV following the completion of the Qualifying Transaction (the "**True-Up Calculation Date**"), subject to compliance with the policies of the TSX Venture Exchange, additional Payment Shares (the "**True-Up Shares**") equal to the difference, if negative, of (A) the number of Payment Shares less (B) the number of Resulting Issuer Shares equal to US$15,000,000 divided by the United States dollar equivalent of the VWAP per Resulting Issuer Share for the first five trading days of the Resulting Issuer Shares on the TSXV, subject to a maximum of 12,542,339 True-Up Shares; and

v. the grant of a contingent value right to receive certain staggered cash payments (the "**Milestone Payments**"), in the aggregate amount of up to US$29,500,000 in accordance with the terms of a contingent value rights agreement (the "**CVR Agreement**") to be entered into by the parties, as described below.

The CVR Agreement is expected to provide that, upon the achievement of three specified milestones (which are tied to, (i) the completion of a qualifying resource estimate in respect of any portion of the FAD Deposit (the "**First Milestone**"), (ii) the completion of a qualifying preliminary economic analysis, prefeasibility study or feasibility study that describes the economics of any portion of the FAD Deposit (the "**Second Milestone**"), and (iii) the earlier of the public disclosure of the commencement of certain qualifying mine development on any portion of the FAD Deposit, or the application for certain specified permits necessary to develop any portion of the FAD Deposit for mine development purposes (the "**Third Milestone**")), the Optioners are entitled to receive Milestone Payments. The First Milestone payment amount equals US$7,000,000. The Second Milestone payment amount equals the greater of: (i) US$7.50 per gold equivalent ounce in the applicable qualifying study (provided that the aggregate amount shall not exceed US$15,000,000), and (ii) US$7,500,000. The Third Milestone payment amount equals $7,500,000.

The Option Agreement and the CVR Agreement may be subject to further amendments prior to the completion of the Qualifying Transaction (as defined below) in order comply with the policies of the TSX Venture Exchange.

4.3.2 Business Combination Agreement

On December 24, 2021, Aardvark Capital Corp. ("**Aardvark**") and the Parent entered into a business combination agreement (the "**Business Combination Agreement**") among Aardvark and the Parent, pursuant to which the parties are expected to complete a three-cornered amalgamation under the laws of the Province of Ontario (the "**Amalgamation**"), pursuant to which the Parent and Subco will amalgamate, with the resulting company being a wholly-owned subsidiary of the Resulting Issuer (as hereinafter defined). The proposed transaction (the "**Qualifying Transaction**") will constitute a qualifying transaction for Aardvark (as such term is defined under Policy 2.4 of the TSX Venture Exchange) and upon the closing of the Qualifying Transaction, Aardvark will be the resulting issuer (the "**Resulting Issuer**").

Following completion of the Qualifying Transaction, the business of the Resulting Issuer will be primarily focused on mineral exploration and development of the FAD Deposit.

4.3.3 Royalties

The royalty rate(s) defined by the Royalty Amendment contemplated in the Option Agreement (and discussed above), as amended, contemplates the following royalties in respect of the FAD Deposit:

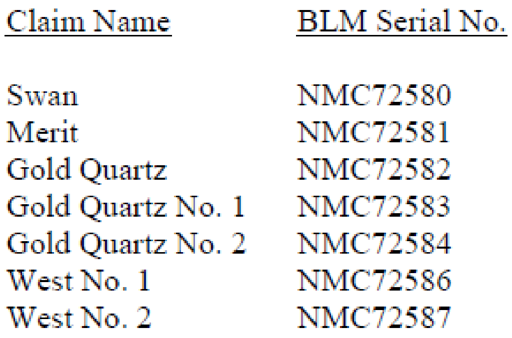
- 0.5% Royalty until such time as the FAD property has produced 250,000 ounces of gold and or the gold-equivalent of other minerals.
- 1% Royalty until such time as the FAD property has produced 1,000,000 ounces of gold and or the gold-equivalent of other minerals; and
- 1.5% Royalty until such time as the FAD property has produced 1,000,000 ounces of gold and or the gold-equivalent of other minerals.

An area called the North Claims are subject to a 3% royalty. They are also the ultimate recipient of approximately half of the rent and the Initial Payment. The South Claims are also subject to a 3% royalty, and approximately the other half of the rent and Initial Payment. This royalty is additive to the Waterton Royalty listed above for a maximum of a 4.5% Royalty for the project. Shoo Fly No. 2 and Shoo Fly No. 3 are subject to a 4% net smelter returns. A 2% production royalty of net returns from owner's undivided fifty percent undivided interest pursuant to a mining lease with option to purchase with respect to the

Star of the West claim. A 4% net returns royalty pursuant to a mining lease with option to purchase with respect to the Continental and Independent claims.

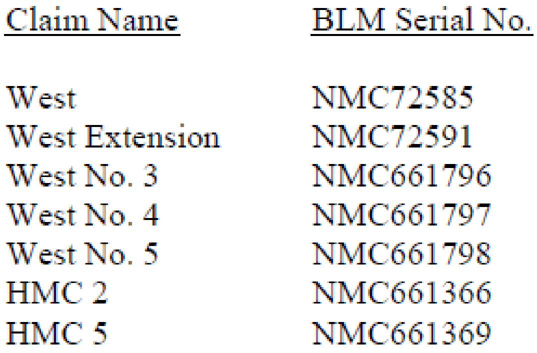
The North and South claims are presented in Table 4-3 and Table 4-4 respectively.

Table 4-3: North Claim Block



Claim Name	BLM Serial No.
Swan	NMC72580
Merit	NMC72581
Gold Quartz	NMC72582
Gold Quartz No. 1	NMC72583
Gold Quartz No. 2	NMC72584
West No. 1	NMC72586
West No. 2	NMC72587

Table 4-4: South Claim Block



Claim Name	BLM Serial No.
West	NMC72585
West Extension	NMC72591
West No. 3	NMC661796
West No. 4	NMC661797
West No. 5	NMC661798
HMC 2	NMC661366
HMC 5	NMC661369

4.4 Environmental Liabilities, Permitting, and Significant Factors

4.4.1 Exploration Permits

Permits to conduct exploration drilling on BLM lands require a Notice of Intent or a Plan of Operations (POO), depending upon the amount of new surface disturbance that is planned. A Notice of Intent is appropriate for planned surface activities that anticipate <5.0 acres of surface disturbance, and usually can be obtained within 30-60 days.

A Plan of Operations is required if >5.0 acres of new surface disturbance are planned during the exploration program. Approvals for a Plan of Operations can take several months, depending on the nature of the intended work, the level of reclamation bonding required, the need for archeological surveys, and other factors as may be determined by the BLM. No other permits are required for exploration drilling.

4.4.2 Environmental Studies

Only two environmental reports currently exist, one for golden eagle habitat, and one biodiversity report.

Environmental reports are not required to achieve the necessary drilling permits.

However, going forward, because the mine lies on a mixture of panted and unpatented mining claims, it is necessary to follow the permitting pathway within the National Environmental Policy Act (NEPA). This pathway involves the creation of an Environmental Impact Statement (EIS) prepared by a third party contractor after the mine has prepared a detailed Plan of Operations (PoO). Nevada also requires many state-level permits, principally for water use, water discharge, and air quality. Although Nevada is a favorable jurisdiction for permitting, it often requires between eight and ten years to receive a Record of Decision (ROD) for a full-scale mining project. It is therefore recommended that permitting being early, during the exploration and development timeline so that it does not greatly delay project development.

4.4.3 Hazards

Few hazards exist on site. The FAD shaft remains open. The headframe, seen in Photo 3-1, still stands, as do support buildings from the mid-20th century.

Photo 4-1: FAD Shaft Headframe and Hoist Building

The shaft does not present a significant hazard. No other historic mine workings exist on site.

Environmental hazards at the site include extreme heat in the summer, and extreme cold and wind in the winter.

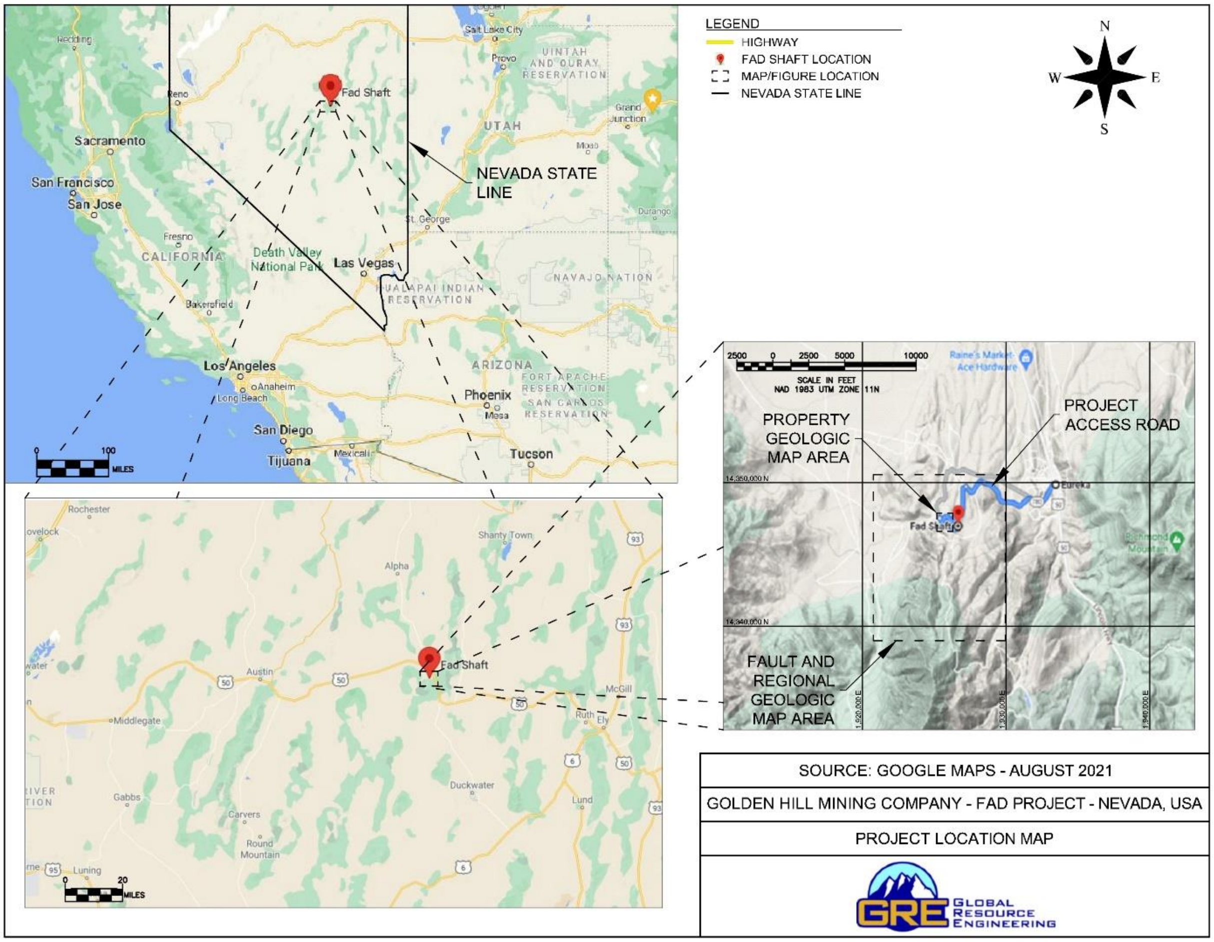
5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The FAD project is located in the Ruby Hill Mining District, Eureka County, Nevada. The property is situated on the northern flank of Ruby Hill, in the Prospect Mountains. Access to the property is via U.S. Highway 50, which passes through central Nevada and is known as "the loneliest highway in America". The FAD site is located ~3 miles west of the town of Eureka (Population ~460) (See Figure 5-1). Despite its distance from nearby towns, with Austin (70 mi. or 110 km. west) and Ely (77 mi. or 124 km.) east, the access between the site and the town is very convenient along 2.4 miles of asphalt along Ruby Hill Avenue and followed by 0.3 miles on dirt road to the northeast. Many dirt tracks within the property provide access to various localities at the project.

Highway 278, a fully paved state highway, connects Eureka to Carlin Nevada and Elko Nevada, a center of gold mining operations for over 40 years.

Figure 5-1: Location of the FAD Property and Its Access Road



SOURCE: GOOGLE MAPS - AUGUST 2021

GOLDEN HILL MINING COMPANY - FAD PROJECT - NEVADA, USA

PROJECT LOCATION MAP

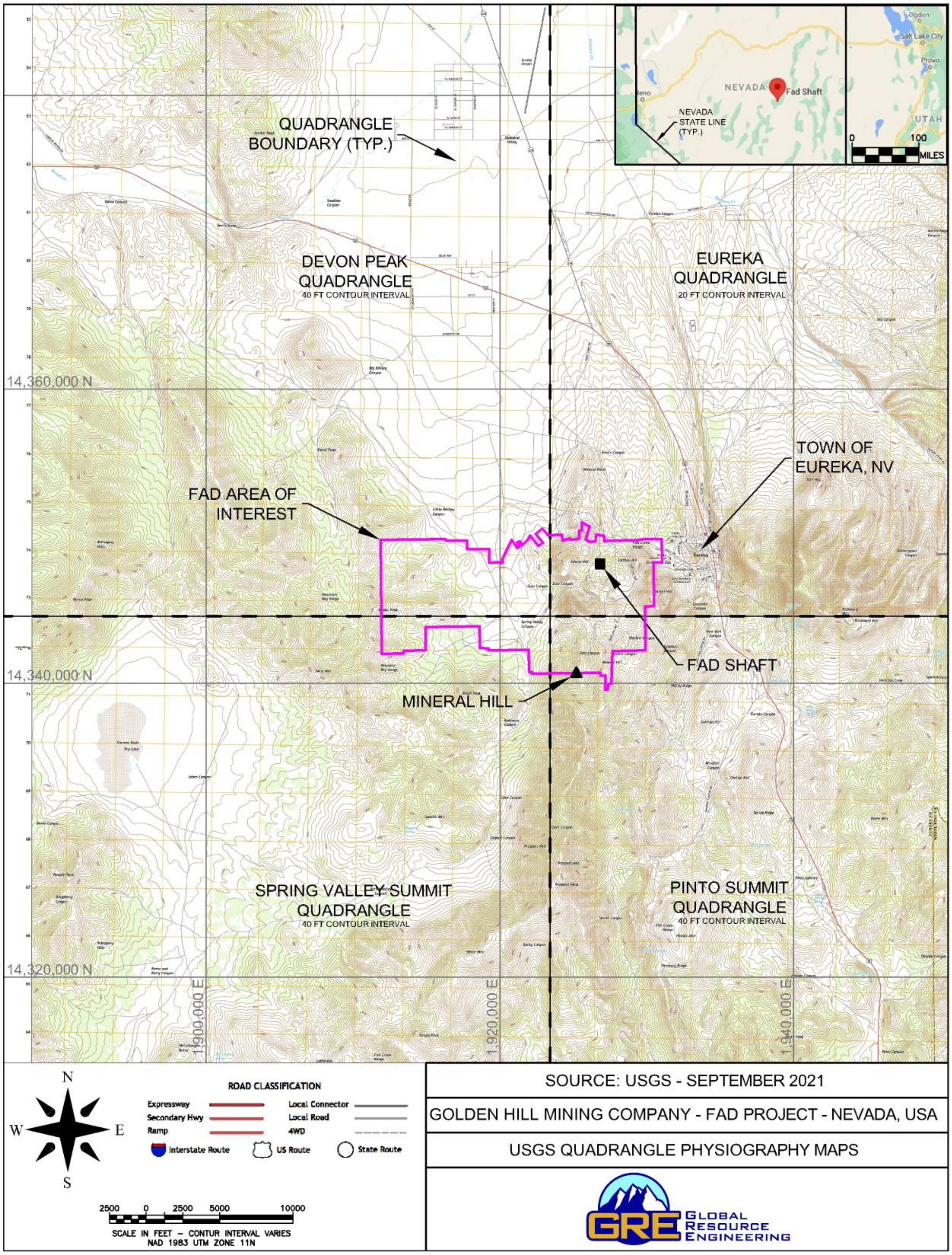
5.2 Site Topography, Elevation, and Vegetation

The topography of Eureka County generally consists of alternating, linear mountains with long, low alluvial-filled basins characteristic of the Basin and Range Province. In this region of Nevada, mountain ranges and valleys in Eureka County have a north-south orientation. Uplifting, faulting, and weathering have contributed to the present relief. Elevation ranges from a high of around 10,461 feet at the Summit Mountains in the Monitor Range to about 4,000 feet elevation found on the floors of several of the lower basins (see Figure 5-2).

There are no rivers or streams in the vicinity of the project. Drainage occurs through ephemeral streambeds towards the north, where all runoff infiltrates into the alluvial/colluvial material into a closed valley and Salar (dry salt lake). Much of the groundwater in the area is utilized in large center-pivot irrigated fields located north of the FAD site, and south of the Salar.

Vegetation, although sparse, it typical for central Nevada. Sagebrush abounds in lower-elevation areas, while juniper and pinion cover the higher elevations. Grasses and shrubs grow on the highest ridge tops.

Figure 5-2: Topography and Physiography of the FAD Area



5.3 Climate

Occasional monsoonal thunderstorms from late July through August; cold and relatively dry in the winter. Temperatures drop to 0 °F or −17.8 °C or lower on an average 4.7 mornings during the winter, though in the severe winter of 1916/1917 this happened twenty-five times. They drop to 32 °F or 0 °C on an average 181.3 mornings, though maximum temperatures top freezing on all but 26.3 days during an average winter. During the summer temperatures rise to 90 °F or 32.2 °C or hotter on 11.8 afternoons, though 100 °F or 37.8 °C has never been reached with the hottest temperature being 99 °F or 37.2 °C on July 14, 1955. Snow accumulations vary from 10 to 30 inches (0.25 to 0.76 m) in mild winters to in excess of 80 inches (2.03 m) in more severe years; in the winter of 1906/1907, more than 150 inches or 3.81 meters of snow fell. (NOAA 2016).

The wettest calendar year has been 1941 with 23.86 inches (606.0 mm) and the driest 2008 with 5.64 inches (143.3 mm), whilst May 1917 with 5.73 inches (145.5 mm) has been the wettest single month. The snowiest month has been March 1902 with 54.0 inches or 1.37 meters of fresh snowfall.

Exploration can be conducted year-round, but heavy snows may impede work during the winter, and safety measures must be taken in the summer to protect crews from heat stress.

5.4 Local Resources and Infrastructure

Despite its small size, Eureka has hotels, restaurants, an indoor swimming pool, and a fire department. Field personnel and resources for exploration and potential operations are expected to be available from Northeast Nevada. Carlin, Nevada is 90 minutes away via paved highway.

A 230 kV electrical transmission line runs through Eureka, Nevada, and 345 kV electrical line is approximately 20 miles northeast of the property (Robinson, 2021). There are no natural gas lines to Eureka, but there is a fiber optic line run by AT&T.

There are no perennial rivers, springs, or streams in the project area. Water for the project will have to be acquired from groundwater. It is likely that the best potential source of water for the project is the FAD shaft and the historic workings from the prior exploration activities.

5.5 Physiography

The FAD project is located in the Basin and Range physiographic province, characterized by generally north-trending fault-bounded ranges separated by alluvial valleys. The terrain on the property is rugged, with high ridges, steep canyons, and narrow valleys. Elevations range from 7,000 to 9,000 feet. Ridges show abundant bedrock exposures; slopes and valleys are typically covered by soil and alluvium (See Figure 5-1).

6.0 HISTORY

The Ruby Hill Mining district was one of the primary districts in a short-lived mining boom in the 1870s and 1880s. During its heyday, Ruby Hill controlled the lead market in the world.

As mentioned above, because the FAD deposit is the down-dropped extension of the Ruby Hill deposit, this history is especially relevant. Furthermore, many historic attempts were made to discover the FAD deposit, including large-scale and heavily funded efforts in the mid-20th century, which have formed the basis of our understanding of the FAD shaft to this date.

Much of the history described below was compiled by Walter A Paroni, who worked at the Ruby Hill area for Eureka Corporation, Ruby Hill Mining Company, and Hecla Mining Company from 1953 through 1966 where he must have participated in the work on the FAD shaft. His exhaustive webpage is the best-available resource on the history of the mining district and an excellent work of amateur history and is extensively quoted and paraphrased in this section (Paroni 2021).

The history of the i-80 Gold Corp project (confusingly called Ruby Hill), located north of the FAD project and containing the Archimedes pit, is included in Section 15. This section focuses on the history of the mineral concessions contained within the FAD AOI (see Figure 4-3). When "Ruby Hill" is employed in this section, it refers to the historic mines contained with the FAD AOI.

6.1 History of the Eureka Mining District

Oxidized gold-silver-lead deposits were discovered in the Eureka Mining district in 1864, but there was little activity until 1869, when the Ruby Hill deposits were discovered in the Eldorado Dolomite formation. At roughly the same time, in July 1869, Major W.W. McCoy devised a furnace for recovering the metals in oxidized ores. The following are excerpts from Eureka and its Resources by Lambert Molinelli, published in 1879:

> *"...some Cornish miners discovered a very promising ferruginous outcrop about two and a half miles west of the town of Eureka, on a northwesterly spur of Prospect Mountain, which they named Ruby Hill. From this discovery dates the beginning of the prominence and prosperity of the district .... There are now in Eureka sixteen furnaces, whose daily capacity varied from forty to sixty tons .... the main cause of the unexampled prosperity of the mining interest of Eureka is to be found in the character of the ores. They are self-fluxing. They carry from 15 to 60 percent of lead, and sufficient iron and silica to obviate the necessity of importing foreign material for smelting purposes. Eureka is the only known mining district possessing this all-important advantage ....*
>
> *All ores mined in Eureka District are taken to the town of Eureka for metallurgical treatment. A branch of the Eureka and Palisade Railroad furnishes a means of transportation for the mines of Ruby Hill. Smelting in the lead blast furnaces has been found by far the most profitable means of working Eureka ores. The method employed is*

> *technically termed the Iron Reduction Process. Ruby Hill furnishes 99 percent of all ores treated."*

Charcoal was essential for the smelting process, and by 1879 about 175,000 pounds per day were required by the smelters. The following is taken from *Eureka Nevada: A History of the town, Its Boom Years 1879-85* by Judith K. Winzeler and Nancy Peppin, 1982.

6.1.1 Town of Ruby Hill

Molinelli (1879) states the following: "*Ruby Hill, the principal town of importance outside of Eureka, is situated about two and a half miles westerly from Eureka, on a hill bearing the same name, and is the seat of the great lode of the district. There are situated the famous Richmond and Eureka Consolidated Mines, Jackson, Phoenix, K.K., and others, of which we speak hereafter. The population consists of about 900 thrifty miners, with their families. The streets are well laid out; many handsome buildings adorn the same, among which can be mentioned the Miners' Union Hall and Theater, a neat and cozy building, Roman Catholic and Protestant Episcopal churches, many neat stores and saloons, and the immense* hoisting works of the several mining companies (See Figure 6-1).

"The Miners' Union, a body of miners 600 strong, organized for the purpose of pecuniarily protecting themselves and families from the many disasters which usually occur in mines, is in a flourishing and thrifty condition, and the scientific and successful manner of deep mining in Nevada. The Ruby Hill Mining Report, a weekly newspaper published at that place, is strictly devoted to the mining interests of the district and has proven itself a valuable informer to strangers in that respect."

Figure 6-1: Town of Ruby Hill

6.1.2 Historical Production

Most of the Eureka District's production was during the period of 1879 to 1890. Hecla 1966 states that the Eureka Mining District produced 2 million tonnes of mineralized material with a value of $122 million, of which 80% was the Ruby Hill deposit (See Figure 6-2). The document does not state if the dollars are inflation-adjusted or not. If they are adjusted to 1966, that equates to roughly $1B in 2021.

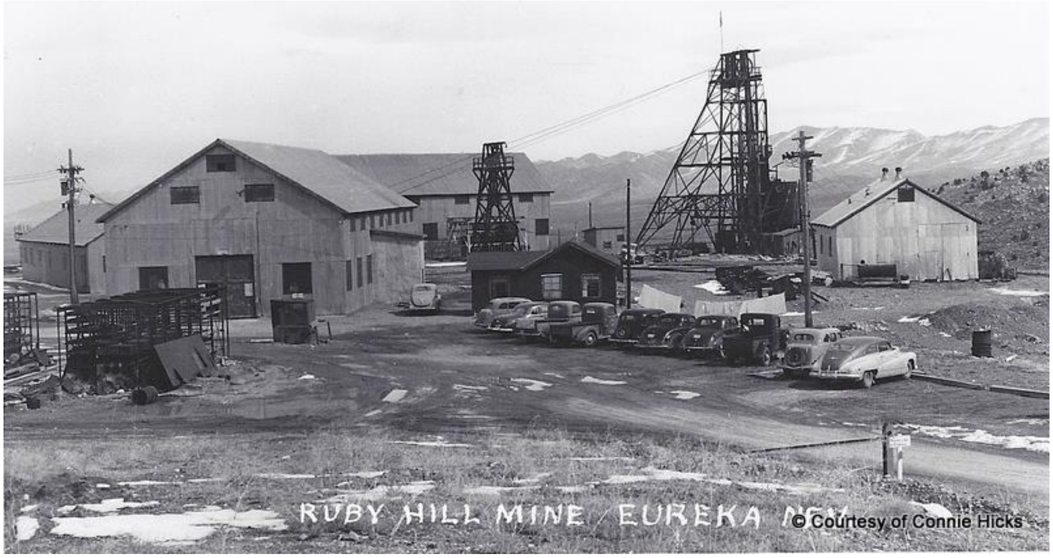
The two largest producers during this period were the Richmond Mining company, financed by British capital, which ceased smelting in 1890, and the Eureka Consolidated Mining company, financed by investors in San Francisco, which ceased smelting in 1891. Tom Nolan (1962), in *The Eureka* Mining District, *U.S. Geological Paper* 406, gives the following estimated production figures, with mine name, dates of production, tons mined and gross yield:

- Richmond Mining Company, 1873-1905, 488,081 tons, $15,209,012.
- Eureka Consolidated Mining Company, 1873-1916, 550,455 tons, $19,242,012.
- Richmond-Eureka Mining Company, 1871-1939, 88,081 tons, $4,021,674.

It is important to note that these numbers do not agree with the number produced by Hecla in 1966, neither in tonnage nor in metal value, and thus reveal a weakness in historic metal value reporting. They also may include production from mineral claims located north of the current FAD AOI (see Section 15).

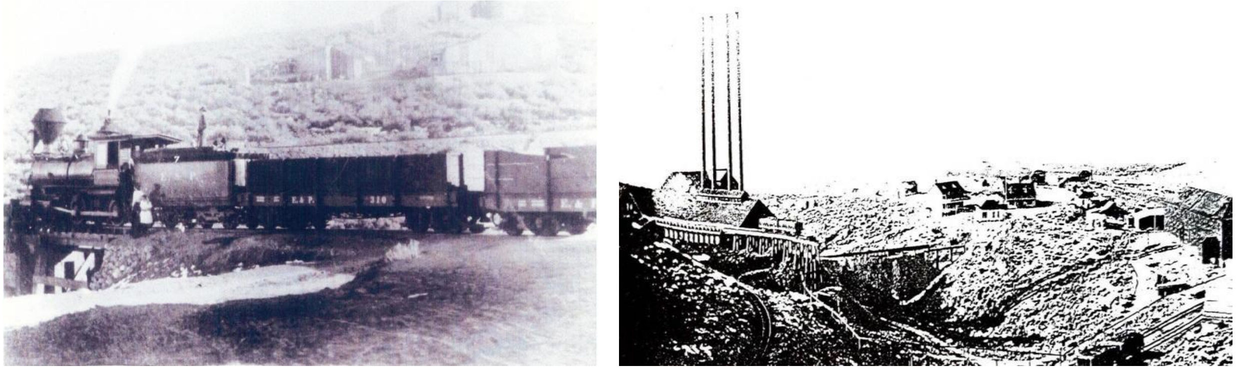
Other producers were the Jackson, Phoenix, KK and Albion. From about 1885 on, most of the mining was done by lessees due to the exhaustion of the high-grade ores. After the smelters closed down, the ores were sent to the Selby Smelter in California and to smelters in the Salt Lake City area. The ores were shipped via the Eureka Palisade Railroad to Palisade and then via the Southern Pacific or Western Pacific Railroads to California or Utah (See Figure 6-3).

Figure 6-2: FAD Shaft, Eureka



© Courtesy of Connie Hicks

Figure 6-3: Left) Eureka Palisade Railroad train at Ruby Hill; Right) Albion Smelter



6.2 The First Attempt at the FAD Deposit

A number of mineralized bodies mined in the footwall of the Ruby Hill deposit were terminated by the Ruby Hill fault, and it was recognized that extensions of the upper mineralized material bodies might exist in the hanging wall of the fault. As a result, the Ruby Hill fault was penetrated in numerous places in the search for a possible extension.

During the 1880s, the Eureka Consolidated Mining Company sank the Locan shaft to search for the down-dropped northeast extension of the Eldorado dolomite formation, and the hoped-for extension of the mineralized bodies. The Locan was sunk to the 1200 level without encountering much water, probably because the shaft was in the Secret Canyon shale formation. The 1884 *U.S. Geological Survey Monograph Seven* states:

> "A *crosscut was driven southwest from the 1200 station toward* an *ore-bearing wedge of Eldorado dolomite, and* water *was encountered ... The crosscut and the lower part of the shaft filled with* water so *suddenly that the men had barely time* to *escape."* NOTE: The use of the word "ore" in this direct historical quotation does not imply that this material meets CIM Definition Standard on Mineral Resources or Ore.

The water then rose in the Locan shaft to the normal ground level of about 1,035 ft below the shaft collar, or ~250 ft over the shaft base. A concerted effort was made to dewater the shaft using a steam pump, but the 500 - 800 gpm (gallons per minute) maximum yield proved insufficient, and the effort was abandoned.

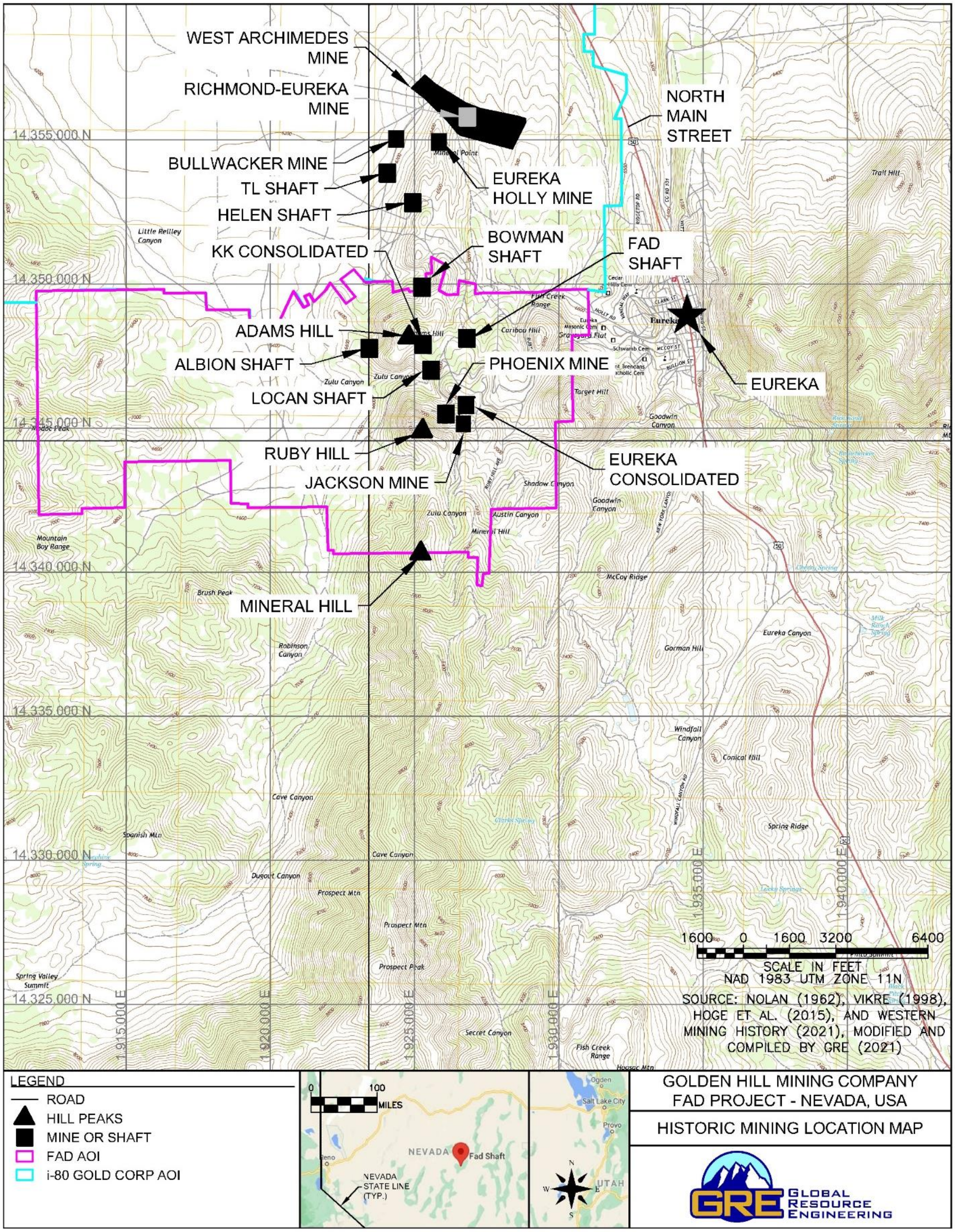
Over the next several years, two more attempts were made including:

- A 1919 effort that pumped sufficient water to reach the bottom of the shaft, but only just as resources were depleted.
- A 1923 effort which dewatered the Locan shaft by pumping 1600 gpm. Crosscutting eventually resulted in more water which exceeded the pumping capacity and ended the effort. The Prescott Steam sinker pumps are likely still present at the 900 level in the Locan shaft, fully submerged.

Due to economic conditions and groundwater conditions, the attempt to find the FAD deposit was abandoned until the 1937.

During this period, the mines in Ruby Hill were mainly worked out; however, there was sporadic production during the 1920s and the 1930s. Figure 6-4 shows a map of historic producers in the FAD area.

Figure 6-4: Historical Producers in the FAD Area



6.3 The Eureka Corporation Period

In 1937, Thayer Lindsley formed Eureka Corporation, Ltd. (Eureka), a Canadian company, and obtained a lease on the Ruby Hill Property from the Richmond-Eureka Mining Company. The Eureka conducted a preliminary diamond drilling program with two holes: one from surface, and one from the 900 level in the Locan shaft. The surface boring found nothing, but the Locan 900 level boring encountered 40 feet of gold-silver-lead-zinc mineralized material. This prompted the re-drilling and extension of an old Richmond Eureka hole on the same level, and this extension intersected 309 feet of mineralized material.

6.3.1 Sinking the FAD Shaft

Emboldened by these two favorable mineralized material intercepts, Eureka Corporation started sinking the four-compartment, rectangular FAD shaft in late 1940. The shaft was named for the FAD claim on which it is located. The sinking operations were curtailed in October 1943, at a depth of 556 feet, because pumping equipment could not be obtained due to wartime controls. While the shaft drilling was on hold, U.S. Bureau of Mines drilled three additional exploration drill holes from the Locan 900 level, and all intersected mineralized material.

In February 1945, construction and equipping of permanent buildings was started, and a 60-foot steel headframe was erected. Shaft sinking was resumed in 1945 and completed to a depth of 2,415 ft in 1947. Stations were cut on the 800-, 1700-, 2000- and 2250-foot levels. Also, the FAD 800 level and the Locan 900 level were connected by a drift.

A crosscut towards the mineralized body was started on the 2250 level, and in March 1948, the drift crossed the Martin fault and penetrated the water-bearing Eldorado dolomite formation. At that point, the haulage drift was stopped, and a service drift was continued to the Martin fault, where again the water-bearing dolomite was intersected. At this period in time, the installed pumping capacity in the FAD shaft was about 2,500 gpm, and 1,500 gpm were being pumped. The drift operation was stopped and a water door was installed in the service drift. The service drift was then advanced 25 ft in the dolomite, and on March 25, 1948, a drill hole in the face of the drift encountered high-pressure water. The water door was closed, but control of the water was lost when a steel plate that was bolted to a flange on an 18-inch diameter ventilation pipeline failed. Within a few hours, the water flow increased to more than 2,000 gpm, which necessitated the abandonment of the 2250 level, and subsequent flooding of the shaft. In response, they installed diesel power generators and augmented pumping capacity to 5,000 gpm. This proved inadequate and more generation and pumping capacity was added and by November 1948, 9,000 gpm were being pumped.

Once the FAD shaft was complete, five diamond drill holes, lettered B through F, drilled were by Eureka Corporation and the U.S. Bureau of Mines from the FAD 800 level, many of them cut into rock with high metal content and scattered sulfide mineralization at varying depths despite considerable difficulty in drilling and recovering samples. Only Holes B and C succesfully drilled through the available thickness of Eldorado dolomite and bottomed in Prospect Mountain quartzite. The holes were unsurveyed and assumed to be vertical on all maps and cross-sections. However, they probably drifted generally to the south. Ultimately, the attempt to dewater the FAD shaft failed, and the exploration was placed on hold.

In addition to the drilling from the FAD 900 level, a series of surface rotary drill holes was drilled by Eureka Corporation in the 1950s, and from 1960 to 1961. All of these holes that were completed to the Prospect Mountain quartzite and encountered sulfide mineralization. Holes 2, 2A, 7, 7A and 7B covered an area east of diamond drill holes B through F and were included in the 1961 metal reserve estimate. Despite the use of rotary drilling methods, the potentially metal--bearing sections in these rotary holes were cored.

6.4 Ruby Hill Mining Company Period

In 1960, the Ruby Hill Mining Company was formed with Richmond Eureka owning 75% and Eureka Corporation 25%. In June 1960, a consortium including Richmond Eureka, Eureka Corporation, Newmont Mining Company, Cyprus Mines Corporation and Hecla Mining Company agreed to finance additional rotary drilling from the surface, and to make a feasibility study for the FAD deposit.

Fourteen holes were drilled in the FAD, area and the quantity and value of the potentially economic-grade material discovered at FAD were increased by mineralized material intercepts encountered in some of the holes. Ten holes were drilled north of the TL shaft or in the area between the FAD and TL. shafts. Both the upper Hamburg dolomite and lower Eldorado dolomite formation were explored. Mineralization was found in some of the drill holes, but none was of commercial value. The drilling program was completed in 1961.

6.5 Hecla Period

On April 1, 1963, Ruby Hill Mining Company leased the property to Newmont, Cyprus, Hecla, Richmond-Eureka and Eureka Corp, with Hecla named as the primary operator.

A decision was made to attempt to seal off the large quantity of the water encountered by the 2250 level drift off of the FAD shaft so that exploration could be continued from underground. The project was capitalized with between $3M and $4M (between $25M and $33M in 2021 dollars), and a total of $3.0M was spent.

Water doors, seals, and dewatering pipelines, and submersible pumps were installed to facilitate dewatering prior to sealing known conductive zones. Cement slurry injection was started on July 28, 1963, and completed on August 16, 1963, and during the effort a total of 24,350 sacks of cement were pumped into the fractures feeding water to the 2250 level.

Following the injection of the cement, a decision was made to attempt to dewater the FAD shaft. Pumping began on September 8, 1963, and the 1700 level station was unwatered on November 28, 1963. On March 1,1964, approximately 2,040 gpm were being pumped from the shaft, of which 150 to 200 gpm were from the 2250 level, indicating that the sealing event was successful.

A new crosscut to the mineralized zone was started. A series of 100-feet-deep holes were drilled and pressure grouted, and the crosscut was advanced about 75 feet. Due to high-pressure groundwater (up to 520 psi), progress was slow because every advance had to be proceeded by drilling and pressure grouting, and sufficient time for grout to cure. From the new crosscut, numerous percussion and diamond-drill exploration holes were drilled from the crosscut, and the drilling program was completed on January 10, 1966. At least 20 pages in the Hecla 1966 report is dedicated to the difficult, costly, and involved process of controlling excess groundwater in the FAD shaft and the 2250 level crosscut which extended to the FAD orebody (but not within it because the material was too friable). Samples collected within the tunnel showed 0.3 oz Au/st, 3.2 oz Ag/st, 1.4% lead, and 27.3% zinc.

This drilling program included four drilling stations, 1,749 feet of diamond drilling, and 10,129 feet of longhole development drilling. This drilling forms the core dataset for the historic resource estimate (see Section 6.8) and are described in greater detail below.

6.5.1 Hecla Drilling

Hecla's drilling results are summarized in the following sections taken from their 1966 feasibility study. They are organized by area, not by drilling date.

6.5.1.1 Surface and FAD 800 Level Drilling

These holes were designated the 500 and 600 series. A total of 24 holes were drilled, but four were abandoned before reaching the Prospect Mountain quartzite. Most of the holes in the immediate perimeter of earlier mineralized holes bottomed in Prospect Mountain quartzite and cut sulfide mineralization in the Eldorado dolomite. No attempt was made to core the mineralized sections in these holes.

Hole 502, which was stopped before reaching the quartzite, drilled through mineralized material with an aggregate thickness of 155 ft. It was the only hole of the 500-600 series included in the 1961 metal reserve estimate.

Holes 501, 508 and 605 which lie northwest of Hole 502, and Hole 506 located southeast of the Locan shaft, drilled through the Eldorado dolomite into quartzite but were barren.

The considerable vertical range through which Sulfide mineralization occurs and the number of holes having multiple intercepts of mineralization suggest a great volume of replaceable ground. All of the Eldorado dolomite in this area must be considered a potential host rock for mineralized material.

A summary of all drilling from the surface and FAD 800 level, along with graphic logs of rotary holes in the 500-600 series, was prepared at the completion of the 1960-61 drilling program and should be consulted for detailed information.

6.5.1.2 2250-Level Diamond Drilling

Diamond drilling was proposed in the Hole-502 area on 2250 level to obtain metallurgical samples and geological information. The holes were designed to cut mineralized sections indicated by some of the surface and FAD 800-level drill holes.

Five holes were attempted, and all drilled through sulfides. Penetration in unconsolidated sulfides was most difficult.

A closed-hole drilling method was developed to overcome some of the problems but had only limited success. Core recovery was generally good in dolomite but poor in strongly oxidized areas and sulfide sections.

Diamond drill holes RH22-2 and RH22-4 cut through short, mineralized sections a few feet above the South-longhole drill station. Short, probably related, mineralized sections were also cut at about 90 feet in holes RH22-3 and RH22-5. Zinc mineralization for a length of approximately 40 feet, beginning at a depth of 156 feet, was drilled by hole RH22-1.

Because of difficulty in drilling, diamond drilling was abandoned in favor of longhole drilling in the sulfide bearing area. Detailed logs of the diamond drill holes with assays and other information were submitted with the June and December 1965 progress reports.

6.5.1.3 2250-Level Longholes

Metallurgical samples and knowledge of mineralized body geometry is mostly dependent on information from the 2250-level longholes. Three groups of longholes are discussed: (1) the 700 series, (2) Hole-502-area, and (3) grid longholes.

<u>700-Series Longholes</u>

Holes De-2, 3, 4, 5, 9, 10, 11, 12, 13 and 14 were drilled in the 700-grout-series area while initial diamond drilling was in progress. The objective of these holes was to outline and sample the short section of mineralized material cut by the 2250-level crosscut in the 700-series advance.

The holes were sampled at four-foot intervals (with the few exceptions noted in the logs), and selected samples were assayed by Hecla at Gem, Idaho. Some non-sulfide lead and zinc determinations were made but total metal content was used to determine grade for metal reserve calculation.

These 700-series longholes were not surveyed and all plotting was done using the bearings and inclinations set at the collars of the holes. Hole deflections (labeled whipstocks in the logs), which occurred as a grouted hole was being redrilled, were plotted five degrees flatter than the former inclination.

Logs of these holes, with sample and assay data, were included as part of the December 1965 progress-report.

Hole-502-Area Longholes

Longholes were drilled at varying inclinations along five panels extending through the area of mineralized intercepts in surface Hole 502. This was done before extending the 2250 level crosscut through the 1100-series and 1200-series grout covers. The holes were collared near survey station 22-12 (North-longhole drill station) and drilled on the following bearings:

S 15° 30' W - S 30° 30' W - S 45° 30' W - S 58° W - S 82° W.

Longhole inclinations varied from +45° to 22 °.

Holes from the 900-grout series were included in the interpretation of drilling in this area. The holes were not surveyed. Samples, assays, deflections and plotting were handled as in the 700-series longholes.

Check drilling alongside of some holes which cut mineralized material did not confirm the mineralization found in these holes. Also, results from deflected holes drilling the same footage intervals as drilled by the original holes were inconsistent. No attempt was made to similarly check waste holes for the possibility of adjacent mineralized material.

Complete information from Hole-502-area longholes was presented with the June 1965 progress report.

Grid Longholes

Hole-502-area longholes and diamond drill holes RH22-2 and RH22-4 drilled into mineralized material at coordinates 10,500 N and 10,200 E. The crosscut was then extended 200 feet southerly to expose this mineralized material and other mineralized sections within the intervening area.

At this location (South-longhole drill station) longholes were drilled on a 360 -grid pattern along panels spaced at 30 ° intervals. Holes on each panel had varying inclinations. Longhole inclinations were initially determined by the elevations of mineralized intercepts found in the surface and FAD 800-level holes.

The objective of the grid-longhole program was to obtain mineralized material samples for metallurgical testing and to determine distribution of mineralization within the penetrated block of ground. During the drilling, the holes were periodically rated on the probability of their cutting mineralized material and new holes were added to extend previously-indicated mineralized intervals.

The grid longholes, especially those drilling in sulfides, were frequently grouted, and this often resulted in the hole being deflected upon redrilling. The final open bore of the longhole was surveyed, when possible, before the hole was plugged and abandoned. This final, surveyed position of the hole is shown on the various maps. No plot of the branching, grouted portions of the holes could be made.

Samples were collected from all footage drilled, and in areas of hole deflection some intervals are represented by multiple samples. A longhole having many deflections through a given length provided a more representative sample than one with no deflections.

All assays are recorded on the logs. The individual four-foot samples were assayed for gold, silver and total lead and zinc. mineralized sections in the longholes were determined by applying the estimated net smelter return schedule and using a $15,00 per ton cut-off. The dollar values for the longhole mineralized material sections were calculated by arithmetically averaging all sample assays from the sections, including "whipstocks". Intervals logged as waste and not assayed were included as zeros. Intervals logged as having good values but not assayed were assigned the grade of the mineralized material section. Samples from longhole mineralized sections of significant length were composited and assayed for non-sulfide lead and zinc.

Two core holes, D 1-36-A and D 2-28-C, were drilled with longhole equipment using a special left-hand AZ core barrel and bit assembly turned by the Gardner-Denver PR123 drill machine, which features independent rotation. Core recovery averaged 86 percent in each hole, with the best recovery achieved in dolomite.

Sulfide mineralization shown by core from these holes was restricted to shorter lengths than indicated by the sludge samples. It is recognized that longholes drilled in friable sulfides may show excessive lengths of mineralization due to salting. However, the magnitude of the problem is unknown. Drilling was suspended and the longholes were grouted whenever the drillers met large volumes of water. Core hole De 2-28-C was drilled to a depth of 152 feet and the core from 12 feet to 4o feet had an average value of $51.90 per ton. Mineralized material was also cut from 50 feet to 52.6 feet. The remaining footage was in dolomite. This hole was drilled between longholes De 2-27-C and De 1-30-C, both of which had good values through analogous lengths.

Hole De 1-36-A was mostly in dolomite but cored short, mineralized sections from 16 feet to 20 feet, 31 feet to 40 feet, 168.2 feet to 178 feet, and 190.3 feet to 204 feet. This hole was drilled to check the mineralized intercept in surface Hole 502 and, when viewed in section, it can be seen that the rich, mineralized section at 168.2-178 feet does check the high values found at this elevation in Hole 502.

The grid-longhole program was terminated on January 10, 1966. The following nine holes apparently bottomed in mineralized material: De 1-3-B*, De 1-12-C, De 1-12-D, De 1-12-E, De 1-12-F, De 2-27-C*, De 2-27-D*, DE 1-30-D*, and DE -1-36-B (*holes extended beyond the 1961 metal reserve limit).

All of the grid-longholes cut sulfides. The holes were drilled to depths varying from 44 to 424 feet. A total of 7,282 feet of new hole was drilled, and of this amount, 2,760.5 feet (38%) cut mineralized material with values above $15.00 per ton.

Following this exploration program, mining equipment, station pumps and electrical equipment were removed from the 2250 level, and the water door was closed on February 1, 1966. Station pumps and electrical equipment on the 2000 and 1700 levels were then removed. The mine was placed on an inactive status near the end of February 1966.

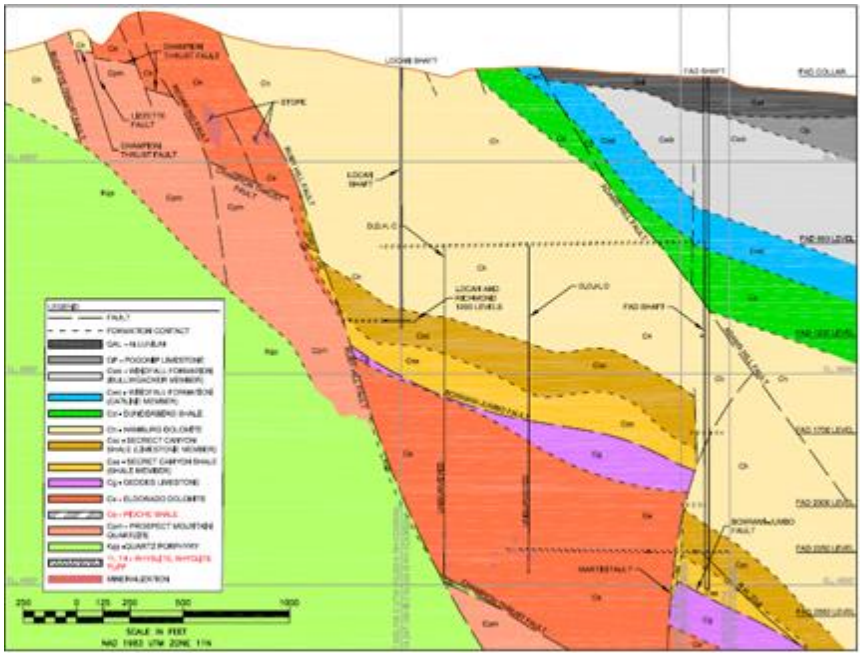
6.5.2 Hecla Studies

Hecla created two large studies on the FAD project, one in 1966 and one in 1974. Each looked at the exploration, presented a historic resource assessment, and created an economic assessment.

As, mentioned above, a good portion of this report is dedicated to the "as performed" discussion of the challenges in dewatering the FAD shaft and exploring the deposit from the drifts off of the shafts. It includes a resource estimate from W. J. Rundle, created in March 1961.

The Rundle 1961 estimate was created from polygons, thicknesses, and weighted assay values. The density was assumed to be eight cubic feet per short ton. This method discovered 3 million st grading approximately 0.16 oz Au per tonne, 6.5 Oz Ag per tonne, 4% lead and 8.3% zinc. Figure 6-5 shows a geological cross section, considering FAD and Locan shafts, as part of the 1966 Hecla study.

Figure 6-5: Geological Cross Section along FAD and Locan Shafts



A metallurgical study was performed, and has been summarized in Section 6.7 below, and Hecla performed an exhaustive evaluation of the costs of development, mining, infrastructure, power, processing and sales.

To manage groundwater, two studies were commissioned, one looking at pumping systems, and estimating a 12,000-gpm sustained yield, and one looking at the feasibility of a 8,620 foot long drainage tunnel. Both are of historical interest and may be useful for future hydrogeologic characterization.

Ultimately, the economic calculation performed in 1966 showed a potential net loss of $1.4M, nearly all because of the large pre-production costs. Based on this calculation, the project was put on indefinite hold.

In 1974, Hecla created a follow-up study that discussed different options in metallurgical recovery and a revised plant layout. These alternatives and higher commodity prices appeared to greatly augment the net sales revenue by recovering more gold and silver. The new estimate also augmented resources, bringing the total resource contained within the FAD AOI to ~4.7M short tons. Despite this more-favorable economic report, no further action was taken on the FAD deposit in the 1970s. Figure 6-6 and Figure 6-7 show a map of historic drilling with most of it conducted by Hecla.

The reader is cautioned that the Hecla 1974 initial mineral resource estimate did not follow standards set forth in NI 43-101 and current CIM standards for mineral resource estimation (as defined by the CIM Definition Standard on Mineral Resources and Reserves dated May 10, 2014). Golden Hill has not done sufficient work to classify this historical estimate as a current mineral resource and have referred to this estimate as a "historical resource"; they are not treating it, or any part it, as a current mineral resource. This historical resource estimate should not be relied upon and has only been included to demonstrate the mineral potential of the FAD Property.

Figure 6-6: Historical Drilling at the FAD Property – Plan View

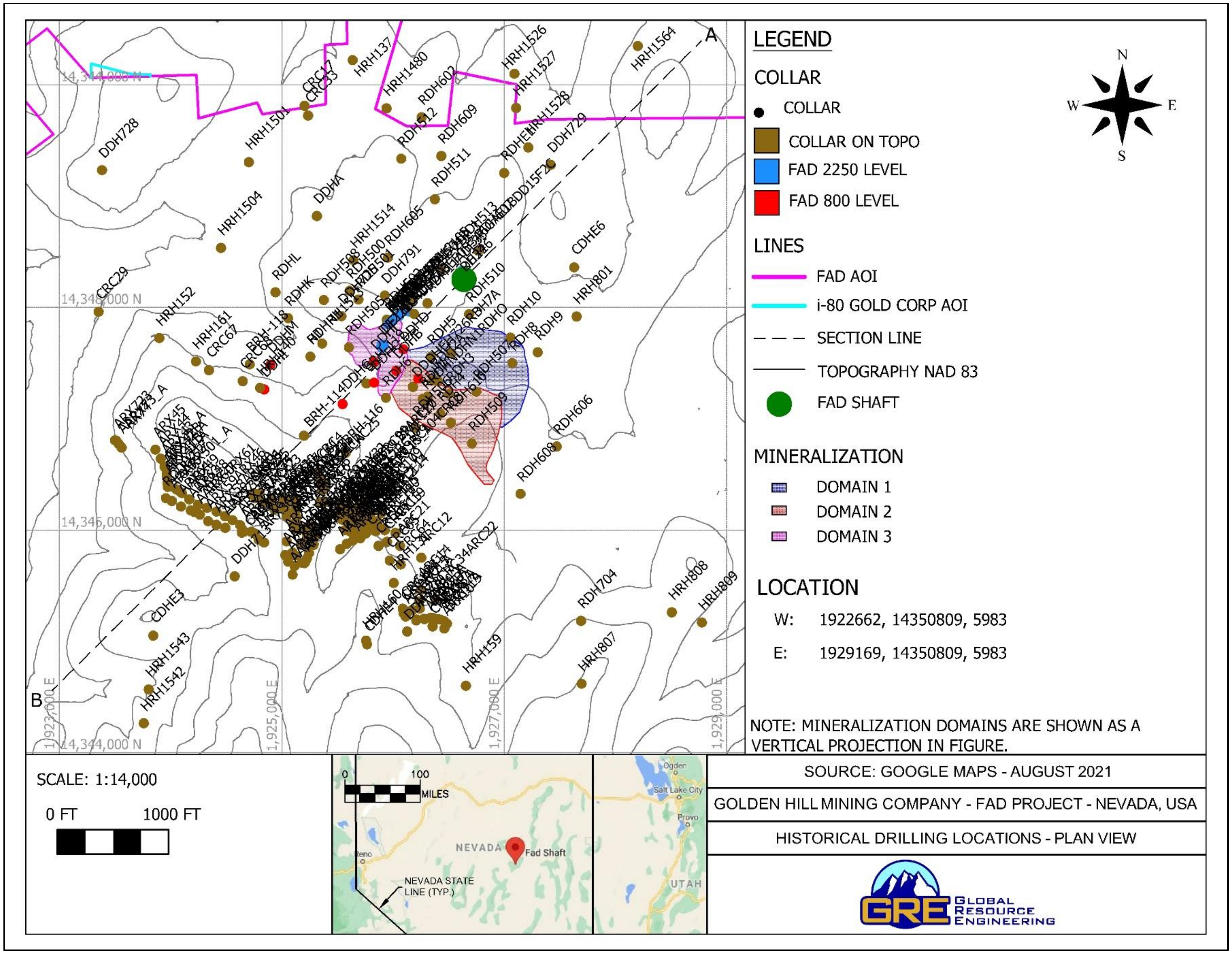
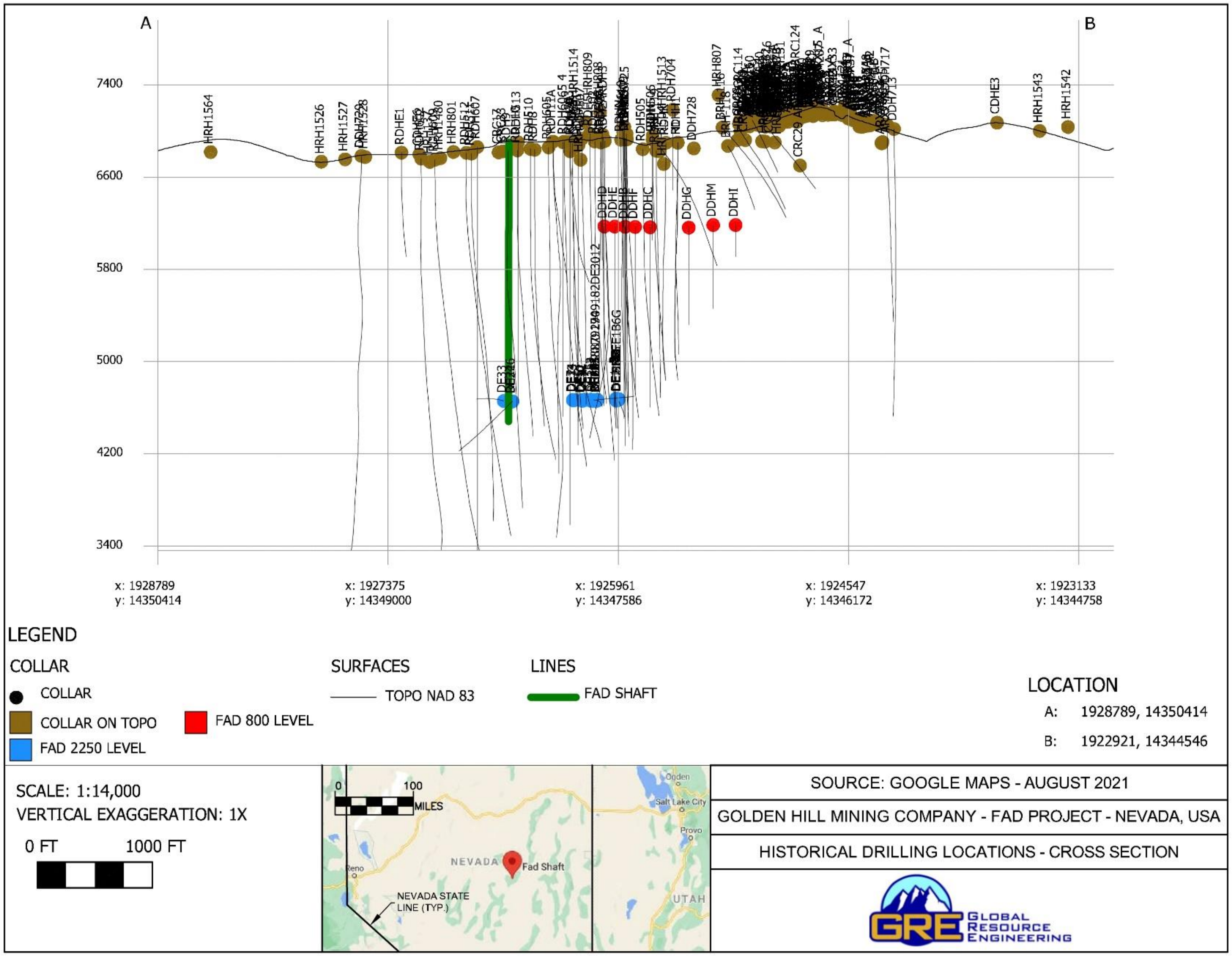


Figure 6-7: Historical Drilling at the FAD Property – Cross Section



6.6 US Smelting and Refining Company Period

No further work was done by Hecla or others, and the property reverted back to the successor of U.S. Smelting and Refining Company Waterton Period.

In 2015, Waterton purchased the FAD mineral concessions, the Spring Valley project, and the Ruby Hill Mine from Barrick for a total of $110 million in cash. Waterton purchased Ruby Hill because of its ongoing gold and base metal development potential (Waterton, 2015). Waterton also separated the project into two different claim packages: the northern package which was sold to i-80 Gold Corp in 2021 (see Section 15), and the FAD deposit, which is owned and optioned by Golden Hill (See Section 4).

6.6.1 Historical Initial Reserve Estimate, Waterton period

Since acquiring the FAD mineral concessions, the Spring Valley project, and the Ruby Hill Mine in 2015, and to date, Waterton has not undertaken or conducted any exploration work or exploration drilling on the FAD property. However, Waterton commissioned SRK Consultants (SRK) to perform an internal resource estimate on the FAD deposit (Internal Resource) in 2017 based on the historical drilling results going back as far as the holes drilled in the 1950s.

SRK's defined domains are shown in in Figure 6-8, and their reported resources are shown Figure 6-8: Modeled Domains, Plan View

Table 6-1 by domain and ZnEq grades (adjusted with historically-available recovery estimates)

Figure 6-8: Modeled Domains, Plan View

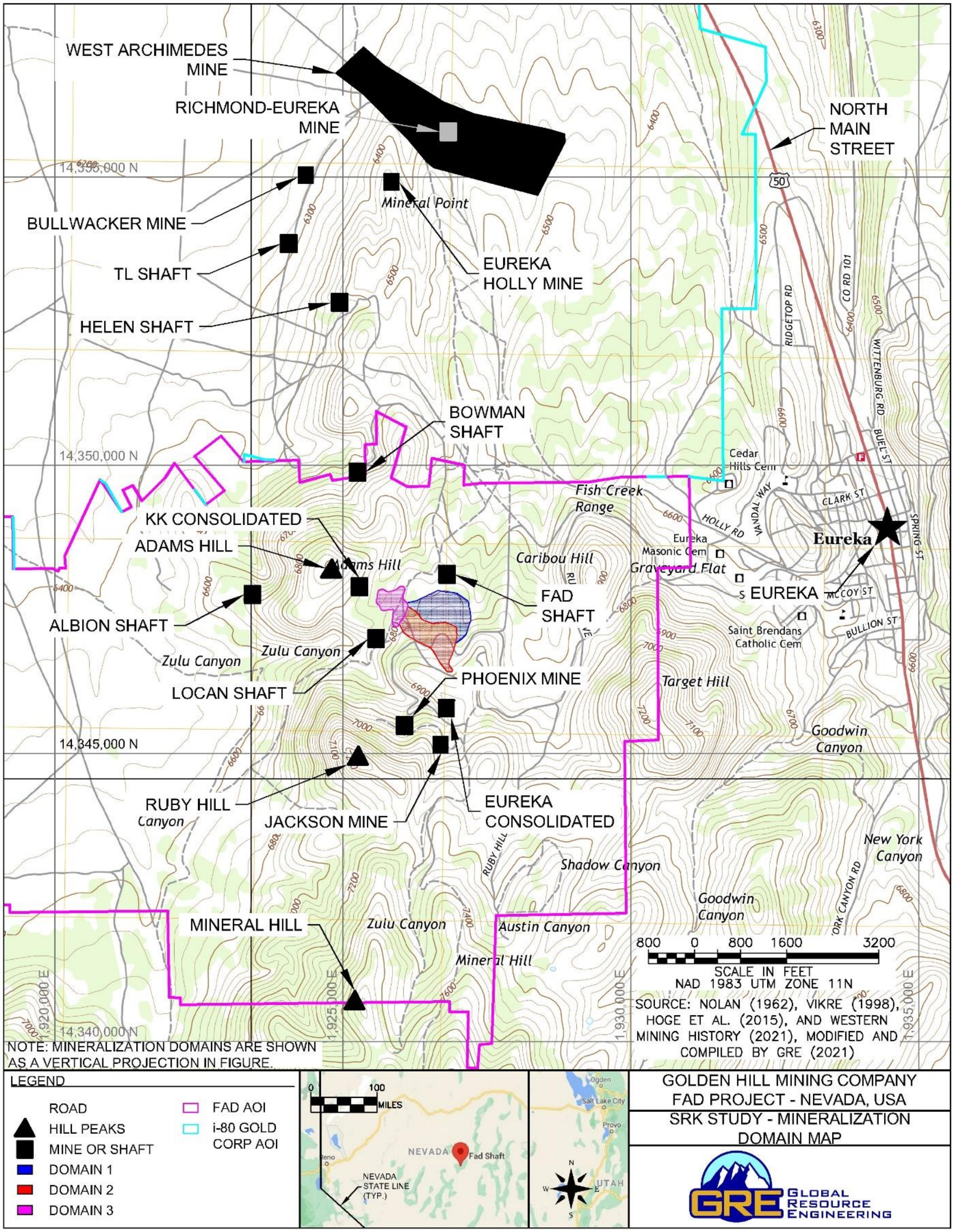


Table 6-1: Internal Historic Resource Estimate

Domain	ZnEq Cut-off	Quantity	Grade	Grade	Contained Metal	Grade	Contained Metal	Grade	Contained Metal	Grade	Contained Metal
		(x1000 Tons)	ZnEq (%)	Zn (%)	Zn (000's lb)	Pb (%)	Pb (000's lb)	Ag (oz/ton)	Ag (000's oz)	Au (oz/ton)	Au (000's oz)
Domain 1	5%	2,664	12.807	6.368	339,285	2.534	135,010	4.337	11,553	0.143	382
	4%	3,313	11.209	5.801	384,315	2.082	137,966	3.705	12,272	0.119	393
	3%	4,193	9.602	5.097	427,402	1.683	141,105	3.146	13,189	0.098	410
	2%	4,426	9.228	4.915	435,140	1.606	142,168	3.019	13,361	0.094	414
	1%	4,505	9.097	4.849	436,909	1.584	142,759	2.971	13,387	0.092	415
	0.50%	4,611	8.905	4.747	437,772	1.553	143,255	2.904	13,391	0.090	416
Domain 2	5%	910	10.497	6.158	112,075	1.670	30,396	3.336	3,036	0.051	47
	4%	984	10.046	5.899	116,113	1.604	31,567	3.187	3,137	0.048	47
	3%	1,284	8.531	4.889	125,514	1.450	37,218	2.788	3,579	0.038	49
	2%	1,387	8.094	4.654	129,119	1.370	38,006	2.635	3,655	0.036	50
	1%	1,409	7.992	4.597	129,576	1.351	38,080	2.601	3,665	0.036	50
	0.50%	1,417	7.952	4.574	129,639	1.344	38,095	2.588	3,668	0.036	50
Domain 3	5%	2,683	13.445	8.161	437,989	2.520	135,235	3.241	8,696	0.102	274
	4%	2,775	13.148	7.986	443,283	2.460	136,551	3.164	8,782	0.100	278
	3%	2,869	12.833	7.802	447,670	2.396	137,495	3.084	8,848	0.098	280
	2%	2,947	12.558	7.637	450,157	2.343	138,097	3.016	8,890	0.096	282
	1%	3,026	12.269	7.463	451,690	2.287	138,420	2.945	8,914	0.094	284
	0.50%	3,067	12.116	7.370	452,106	2.258	138,515	2.908	8,921	0.093	284

At a 3% ZnEq, the tonnes and grade were reported as shown in Table 6-2.

Table 6-2: Internal Historic Resource Estimate at 3% ZnEq Grade

Domain	Quantity	Grade	Grade	Contained Metal	Grade	Contained Metal	Grade	Contained Metal	Grade	Contained Metal
	(x1000 Tons)	ZnEq (%)	Zn (%)	Zn (000's lb)	Pb (%)	Pb (000's lb)	Ag (oz/ton)	Ag (000's oz)	Au (oz/ton)	Au (000's oz)
Domain 1	4,193	9.602	5.097	427,402	1.683	141,105	3.146	13,189	0.098	410
Domain 2	1,284	8.531	4.889	125,514	1.450	37,218	2.788	3,579	0.038	49
Domain 3	2,869	12.833	7.802	447,670	2.396	137,495	3.084	8,848	0.098	280

The estimated tons and grade are reported at a zinc equivalent cut-off of 3.0%. The cut-off is based on a price of US$1.10 per lb of zinc, US$1.00 per lb of lead, US$21 per ounce of silver, and US$1,300 per ounce of gold,. The assumed recoveries are for zinc 90%, lead 80%, silver 75%, and gold 10%.

The reader is cautioned Golden Hill has not done sufficient work to classify this historical estimate as a current mineral resource and have referred to this estimate as a "historical resource;" Golden Hill is not treating it, or any part it, as a current mineral resource. This historical resource estimate should not be relied upon and has only been included to demonstrate the mineral potential of the FAD Property.

In order to upgrade this historical resource to current, the following should be done:

- Confirm collar coordinates
- Validate downhole surveys
    - Confirm a minimum of 10% of duplicate assay values with a certified laboratory, and If there is correlation, continue to use historical assays or If there is no correlation, send additional duplicate samples to be assayed
- Collect density data from both high- and low-grade samples.

Additionally, a new resource estimate may be necessary and can be accomplished with new diamond drilling that takes samples from three holes in each of the three estimation domains. Further recommendations are summarized in Section 18.

Furthermore, the recoveries estimated at the bottom of Table 6-2 are estimated, and not based on metallurgical test data. Golden Hill has referred to these metallurgical studies as “historical metallurgical estimates” and are not treating it, or any part it, as a current assessment of metallurgical recovery. This historical study should not be relied upon, and this discussion has only been included to demonstrate the metallurgical potential of the FAD deposit.

6.7 Metallurgical Testwork

Historical testwork was performed by Hecla (1966) and others, but this testing is over sixty years old and has not been presented because modern metallurgy has made the results obsolete. Section 18 describes the recommended preliminary metallurgical test program for the FAD project.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

Descriptions of the Eureka Mining District and its mineralization have been completed by several researchers such as Nolan (1962), Nolan et al. (1974), Speed and Sleep (1982), Oldow (1984), Wyld (2002), Taylor et al. (1993), Vikre (1998), Grauch et al. (2003), Hastings (2008), Long (2012), Cook and Corboy (2004), Long et al. (2014), Fiori (2014), Fiori et al. (2014), and Hoge et al. (2015). The only detailed descriptions of the geology and mineralization of the FAD was carried out by Hecla Mining Company in June 1966. The authors have reviewed these sources and consider these to contain all the relevant geological information about the Project area. Most of sections 7.1 through 7.4 have been reproduced from these reports.

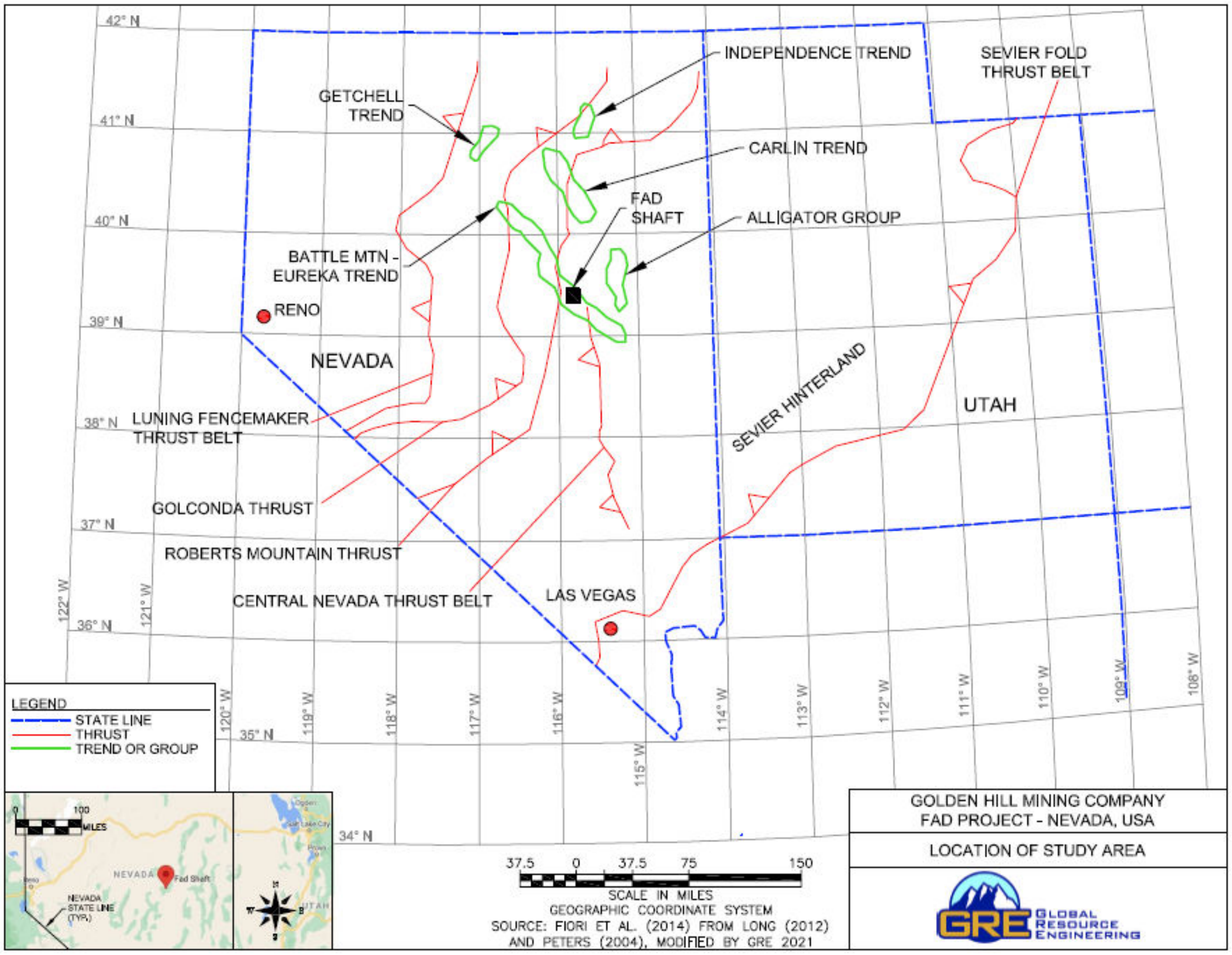
7.1 Regional Geology and Tectonic Development

The Eureka mining district occupies the southern tip of the Battle Mountain – Eureka trend of Carlin-type gold mineralization in east-central Nevada (Figure 7-1), and contains a series of gold deposits (Nolan, 1962). The Eureka district is characterized by silver-lead polymetallic carbonate replacement and Carlin-type gold deposits, which are the two-primary deposit-types within the district. Numerous geologic investigations of Carlin-type deposits have determined that the geometry of gold bodies commonly trend parallel to structures, such as folds and faults (Peters, 2004), implying that mineralization is genetically related to the structures. The Eureka mining district hosts several Carlin-type gold deposits that occur in zones of deformation that are spatially associated with hydrothermal dissolution, and jasperoidal breccia zones.

The Eureka mining district, and surrounding region of eastern Nevada, lies within the rifted western margin of the North American craton (Cook and Corboy, 2004). During the early to mid-Paleozoic, the Eureka region was situated on the distal edge of the continental shelf of the Cordilleran passive margin basin, which was a vast carbonate platform (Stewart and Poole, 1974). The Cambrian to Devonian stratigraphic section consists primarily of limestone and dolostone interbedded with shale and sandstone (Figure 7-2) (e.g., Cook and Corboy, 2004). These carbonate rocks, particularly the Cambrian section, serve as the dominant host rock for mineralization in the district.

During the Late Devonian to Early Mississippian, the Antler orogeny, a contractional deformational event involving east-vergent thrusting of deep-water sediments of the Robert's Mountain allochthon over the western edge of the continental shelf, took place to the west of the map area (Figure 7-1) (Speed and Sleep, 1982). The Eureka region occupied a foreland basin that subsided on the eastern margin of the allochthon and sediment shed from the eroding highlands shifted the sedimentation-style to the west, depositing carbonaceous silt, sand, and conglomerate. This deposition is represented by an approximately 1.5 km-thick section of Mississippian conglomerate and shale (Nolan et al., 1974).

Figure 7-1: Location of study area relative to Paleozoic and Mesozoic contractional tectonic features



SOURCE: FIORI ET AL. (2014) FROM LONG (2012) AND PETERS (2004), MODIFIED BY GRE 2021

Green polygons show location of major gold trends in northeastern Nevada, modified by Fiori et al. (2014) from Long (2012) and Peters (2004), modified by GRE (2021).

During the Jurassic-Cretaceous Cordilleran orogenic event, the Eureka mining district was situated between the Jurassic Luning-Fencemaker thrust belt in western Nevada (Oldow, 1984; Wyld, 2002), and the Jurassic-Cretaceous Sevier fold and thrust belt in Utah (Figure 7-1) (e.g., Armstrong, 1968; DeCelles, 2004).

The lower Paleozoic section at Eureka has been strongly deformed and dismembered by regional folding, thrust faults, and normal faults, both prior to and after mineralization, and intruded by Late Cretaceous granodiorite, the Ruby Hill stock, and by quartz porphyry. The radio isotopic ages of the intrusions are analytically indistinguishable at approximately 107 Ma, and both intrusions are spatially and temporally related to replacement deposits (Vikre, 1998).

Uplift and erosion during the Sevier orogeny is interpreted to be responsible for the erosion of any Mesozoic strata that would have been deposited prior to eruption of Eocene-Oligocene volcanic rocks (Long, 2012). The Eureka region is situated within the Central Nevada thrust belt (Taylor et al., 1993, Long, 2012), a system of north-striking contractional structures which can be bracketed between Permian and Late Cretaceous (Taylor et al., 2000), and in some places as Early Cretaceous (Long et al., 2014). The

Central Nevada thrust belt represents an internal part of the Sevier thrust belt. Long et al. (2014) proposed that the large-scale structure of the Eureka mining district can be explained by Early Cretaceous growth of a regional-scale anticlinal culmination associated with east-vergent motion on the blind Ratto Canyon thrust, which is defined by a Cambrian over Silurian relationship in drill holes beneath Lookout Mountain and Rocky Canyon, in the southern part of the study area.

This Cretaceous contractional deformation was followed by extension along several, large-throw (100's to 1000's of meters) normal faults, which are bracketed between Late Cretaceous and Late Eocene (Long et al., 2014). In the south of study area, the largest-offset (2,000 to 4,000 m) normal faults include the Dugout Tunnel and Lookout Mountain faults. These structures are superposed by multiple smaller-scale (10's to 100's of meters offset) normal faults, generally striking north to northeast.

Cenozoic magmatism began at ca. 45 Ma in northeastern Nevada and was part of a southwestward-migrating belt of silicic magmatism called the Great Basin ignimbrite flare-up. Ignimbrite flare-up magmatism was dominated by andesitic and dacitic lavas and compositionally similar intrusions (Henry, 2008). In the Eureka region, ignimbrite flare-up rocks included Late Eocene (~37-33 Ma) silicic ash falls and flows, tuffs, and intrusive volcanic rocks (Nolan et al., 1974; Long et al., 2014).

More recently, Nevada has been the site of regional extension associated with formation of the Basin and Range extensional province. The Basin and Range is a product of the extensional regime introduced by the establishment of the San Andreas transform fault system, the active plate boundary between the North American plate and the Pacific plate, beginning in the Early Miocene (Dickinson, 2002).

7.2 Stratigraphy

7.2.1 Sedimentary Rocks

The stratigraphic section exposed in the Eureka district consists of a thick section of Early Cambrian to Early Cretaceous carbonate and clastic rocks that have been intruded or overlain by numerous intrusive plugs, stocks, dikes, sills, lava flows, and tuffs ranging from Cretaceous to Oligocene in age (Figure 7-2).

More than 2,100 m (>7,000 ft) of Cambrian rocks underlie the Eureka district, however, because of deformation, in no place is the complete Cambrian section intact. Cambrian rocks comprise, from oldest to youngest, Prospect Mountain Quartzite, Pioche Shale, Eldorado Dolomite, Geddes Limestone, Secret Canyon Shale, Hamburg Dolomite, Dunderberg Shale, and the Windfall Formation (Nolan and others, 1956). The Cambrian siliciclastic and carbonate rocks are overlain by Ordovician through Early Cretaceous sedimentary strata, Oligocene volcanic rocks, and Quaternary colluvium.

The northern part of the district exposes only the Cambrian and Ordovician part of the stratigraphic section (Figure 7-3).

Middle and Late Cambrian Eldorado Dolomite and Hamburg Dolomite are the important host rocks for the carbonate replacement and Windfall gold deposits. Lesser amounts of replacement mineralization and some gold deposits occur in carbonate rocks of the Late Cambrian Windfall Formation and Early and Middle Ordovician Pogonip Group. The characterization provided below summarizes more detailed descriptions by earlier workers (Hague, 1892; Nolan et al., 1956; Nolan, 1962) and emphasizes those units which are demonstrated mineralization occurring in the Eureka district.

Sedimentary rocks in the district provide a nearly complete record of deposition from the Cambrian through the late Mississippian (Dilles et al., 1996). The lower portion of the section, from the Cambrian Prospect Mountain Quartzite through the Devonian Devils Gate Limestone, is dominated by shelf carbonate rocks inferred to have originally been part of an eastward-thinning wedge of miogeoclinal sedimentary rocks (Nolan et al., 1956). Carbonaceous shales and sandstones are locally interspersed among the limestones and dolostones of the lower Paleozoic section, which host the majority of the mineralization (Figure 7-3).

Eldorado Dolomite, the host rock for the replacement deposits in and north of Ruby Hill, is composed of ~760 m of massive, coarsely crystalline bluish-gray dolomite and limestone, including two varieties of dolomite and minor remnants of fine-grained and well-bedded limestone. One variety of dolomite is blue-gray, massive, and thick bedded. The second variety is lighter gray, coarser grained, displays little texture, and predominantly encloses the replacement deposits. Both varieties of dolomite are finely fractured, and both are interpreted to have been recrystallized, in part hydrothermally, from the fine-grained and well-bedded limestone (Wheeler and Lemmon, 1939; Nolan and others, 1956; Nolan and Hunt, 1968).

The Eldorado Dolomite is succeeded by the Geddes Limestone, Secret Canyon Shale, and Hamburg Dolomite. The Hamburg Dolomite is similar in appearance to Eldorado Dolomite and is also finely fractured in the vicinity of replacement deposits. Some Hamburg Dolomite is also thought to be a product of hydrothermal alteration (Nolan and others, 1956). Hamburg Dolomite is marbleized and altered to pyroxene-garnet skarn and hydrous skarn south of Ruby Hill and on Mineral Hill and contains replacement deposits in the vicinity of Prospect Mountain and on Mineral Point.

The Hamburg Dolomite, host to both carbonate replacement mineralization and to the Carlin-type mineralization at the Windfall, Rustler, and Paroni mines, consists of 300 m of dark gray, massive limestone with dolomite horizons. Although the Hamburg Dolomite occurs roughly 300 m stratigraphically above the Eldorado Dolomite, they are lithologically similar (Nolan, 1962; Hastings, 2008).

Carlin-type gold mineralization at Archimedes occurs in the Cambrian Windfall Formation and the overlying Ordovician Pogonip Group. The Windfall Formation is subdivided into two members: the lower Catlin member, made up of massive limestone with local sandy and silty interbeds and abundant stringers of black chert, and the upper Bullwhacker member, characterized as a tan, platy limestone with shaly/sandy partings (Nolan, 1962). The Pogonip Group includes the basal Goodwin Formation, the overlying Ninemile Formation, and the uppermost Antelope Valley Formation. The Goodwin Limestone, host to the bulk of gold mineralization at the Archimedes deposit (Dilles et al., 1996), has three members. Shaly and fossiliferous at its base, the Lower Goodwin member (Og1) is best characterized as a medium-grained, massive limestone with a sparse bedding of chert nodules and fragments (Hastings, 2008). It grades into a thinly (2–10 cm) bedded, silty micrite known as the Lower Laminated member (Ogll). This laminated member is in turn overlain by the Upper Goodwin member (Og2), which can be identified by its medium to thick bedding and conspicuous chert content (locally as high as 20%) (Hastings, 2008).

The upper part of the stratigraphic section, beginning in the Mississippian with the Chainman Shale and Diamond Peak Formation (Nolan, 1962), includes carbonaceous silts, sands, and conglomerates that record the deposition of clastic sediments into a large foreland basin developed along the eastern margin of the Roberts Mountain allochthon during the Antler orogeny (Poole, 1974). Rocks of the Roberts Mountain allochthon are absent in the Eureka district but crop out several kilometers to the northwest (Figure 7-1). The Pennsylvanian-Permian section consists of limestone and conglomerate of the Ely Limestone and Carbon Ridge Formation (Nolan, 1962; Long et al., 2014).

Mesozoic rocks are largely absent in the area but are represented by the Early Cretaceous Newark Canyon Formation (Nolan et al., 1956). The unit consists of conglomerate, mudstone, and limestone that contain fossil fish, ostracods, and nonmarine mollusks (MacNeil, 1939; Fouch et al., 1979). The Newark Canyon Formation is interpreted to have formed in fluvial and lacustrine settings (Vandervoort and Schmitt, 1990). A detrital zircon date from the Upper Conglomerate member yielded a maximum age of 120.7±3.2 Ma, and zircons from a waterlain pyroclastic fall deposit from the Upper Carbonaceous member yield a U-Pb concordia age of 116.1±1.6 Ma (Druschke et al., 2011), indicating that the unit is Aptian (Long et al., 2014). The Newark Canyon Formation has been interpreted as a piggyback basin deposit on the eastern limb of the Eureka culmination as it grew during development of the central Nevada thrust belt at ~116 Ma (Druschke et al., 2011; Long et al., 2014). The age of the Newark Canyon Formation thus indicates that growth of the culmination preceded emplacement of the mid-Cretaceous intrusions and their associated carbonate-hosted mineralization at ~106 Ma by ~10 m.y.

The district also contains local exposures of a younger conglomerate, with an age bracketed between Late Cretaceous and Eocene (Long et al., 2014).

Figure 7-2: Regional Geology Map of the Eureka Mining District

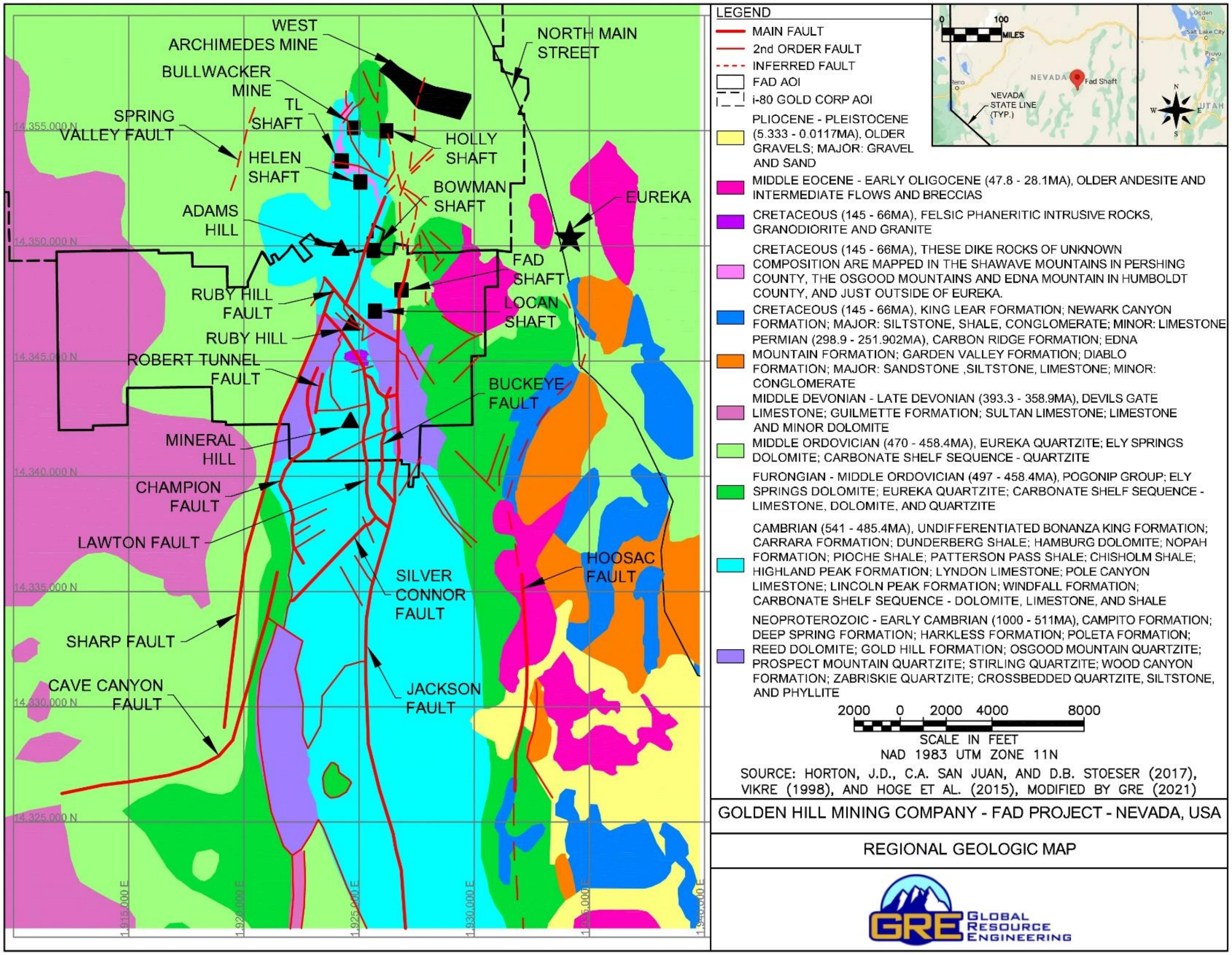
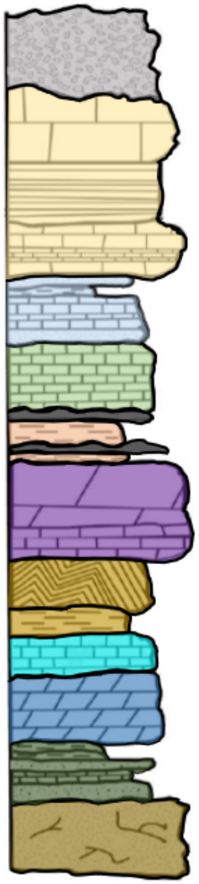


Figure 7-3: Stratigraphic column of Cambrian–Ordovician rocks in the Eureka district, with unit descriptions, thicknesses, and the locality of the measured sections



Thickness and Type Locality	Description
Estimated 300-500 ft (but Variable)	**Eureka Quartz – Oe** Bright White, recrystallized quartzite, strongly brecciated and Oxidized.
~ 1600 ft (Goodwin Canyon)	**Pogonip Group– Op** **Antelope Valley Formation (Oav):** Massive, thick-bedded blue-gray Limestone with abundant large brachiopods, bryozoans, trilobites, and Burrows. **Ninemile Formation (On):** Platy, thinly-bedded fine-grained limestone with some sandy beds. **Goodwin Formation (Og):** Upper Cherty Mbr (Og2): Fine to medium-grained limestone with bedding 4" to 2". Variable chert content (up to 20%), typically light gray. Laminated Mbr (Ogll): Fine-grained, silty, laminated wackstone. Lower Cherty Member (Og1): Fine to medium-grained limestone with sparse black chert nodules; massive bedding 1'-3'.
400 ft (Windfall Canyon)	**Windfall Formation Cw:** Bullwhacher Mbr: interbedded calcareous sandstone and limestone; no chert.
250ft (Windfall Canyon)	Catlin Mbr: massive or thin-bedded limestone with laminated black chert.
265 ft (Windfall Canyon)	**Dunderburg Shale - Cd:** Greenish-tan shale interbedded with distinctive, nodular limestone. Abundant trilobite fragment.
900-1200 ft (Richmond-Eureka Mine)	**Hamburg Dolomite - Ch:** Massive, poorly bedded dolomite, medium gray. Ooolitic, fossiliferous, tends to be highly fractured with limestone at the base. Frequent zebra dolomite and sanding.
425-450 ft 200-225 ft (Cave Canyon)	**Secret Canyon Shale - Cs:** Lower shale member (Css) rarely seen. Upper limestone is thinly bedded, flaggy, and silty with yellow partings.
330 ft (Geddes and Bertrand mine)	**Geddes Limestone Cg:** Black, thinly laminated carbonaceous limestone with sparse black chert.
~2500 ft (west slope of Prospect Ridge)	**Eldorado Formation - Ce:** Thickly bedded medium-gray limestone and dolomite, variably recrystallized. Fossiliferous.
~200 ft (Prospect Peak) -500 ft	**Pioche Shale - Cp:** Tan shale with interbedded red/pink micaceous arenites and thin-bedded, blue-gray limestone.
1700+ ft but base not exposed (Cave Canyon)	**Prospect Mountain Quartzite - Cpm:** Grayish, fine-grained quartzite that weathers pink or brown; strongly fractured; remnant bedding.

Source: Hoge et al., (2015), Modified by GRE 2021.

7.2.2 Igneous Rocks

Igneous activity in the heart of the Eureka district occurred in at least two discrete periods, mid-Cretaceous and mid-Cenozoic (Blake et al., 1975; Mortensen et al., 2000). In addition, there are Jurassic and Late Cretaceous intrusions nearby. A large Jurassic intrusion crops out ~12 km to the northeast at Whistler Mountain (159.5±3.3 Ma, U-Pb zircon) (Mortensen et al., 2000). Late Cretaceous (~86 Ma), strongly peraluminous granitoids are present ~10 km due south at Rocky Canyon and ~12 km to the southwest at McCullough Butte (Barton, 1982, 1987; Long et al., 2014; Barton et al., unpub. data). Although some of the mid-Cenozoic dates originally were regarded as early Oligocene, all of them now are late Eocene considering that the currently accepted age of the Eocene-Oligocene boundary is 33.9 Ma (Walker et al., 2013).

The largest and ostensibly oldest igneous unit in the district is the Graveyard Flat intrusion, which was first intercepted beneath alluvium during the drilling campaign that led to the discovery of Archimedes. Due to intense intermediate argillic and propylitic alteration, the primary mineralogy of the intrusion is uncertain. It consists primarily of quartz and variably altered plagioclase phenocrysts in a fine-grained, equigranular, plagioclase-dominated groundmass (Dilles et al., 1996; Hastings, 2008). Primary ferromagnesian minerals are not preserved; sericite, kaolinite, calcite, chlorite, epidote, and pyrite are common alteration products (Dilles et al., 1996). Textural variations observed by Dilles et al. (1996) suggest that the intrusion may have been emplaced in multiple phases. Mortensen et al. (2000) reported a U-Pb zircon age of 106.2±0.2 Ma for the Graveyard Flat intrusion. The "Archimedes pluton," which has an imprecise U-Pb zircon age determination of 105±5 Ma (Mortensen et al., 2000), may be related to the Graveyard Flat intrusion.

The Bullwhacker sill occurs west of the Graveyard Flat intrusion. It dips gently east underneath the Archimedes pit and has been interpreted to merge with the Graveyard Flat intrusion at depth. Although the sill was characterized as an "andesite porphyry" by Langlois (1971), it has been strongly sericitically altered; feldspar phenocrysts have been replaced by kaolinite ± sericite ± calcite. Remnant biotite and hornblende phenocrysts occur in less altered samples; quartz phenocrysts are common. The groundmass texture is uncertain, and the relict mineralogy suggests that the rock was most likely granodiorite porphyry. Mortensen et al. (2000) report a U-Pb zircon age of 106.8±1.2 Ma on the Bullwhacker sill.

The Cretaceous Ruby Hill or Mineral Hill stock, a granodiorite, is exposed immediately south of Ruby Hill (Figure 7-2). Nolan (1962) and Vikre (1998) have attributed carbonate replacement mineralization at Ruby Hill to fluid circulation related to emplacement of the Ruby Hill stock. There are numerous preexisting K-Ar ages with scattered results, whereas 40Ar/39Ar dating of igneous biotite and alteration muscovite yields ages of ~105–108 Ma (Vikre, 1998). Mortensen et al. (2000) report a definitive U-Pb zircon age of 106.0±1.6 Ma.

As evident above, the U-Pb zircon ages on mid-Cretaceous intrusive rocks that are interpreted as crystallization ages by Mortensen et al. (2000) are all within error of one another at ~106 Ma, increasing the likelihood that the rocks have a consanguineous origin. The ages of the intrusive rocks correspond to the Albian stage in the lattermost Early Cretaceous epoch (Walker et al., 2013). The intrusions are spatially, and temporally associated with carbonate replacement deposits (Nolan, 1962; Langlois, 1971; Vikre, 1998); thus, the age of carbonate replacement mineralization in the district is also ~106 Ma.

A second, younger period of magmatic activity is evident based on radiometric dating of late Eocene extrusive volcanic rocks in the district, which include the Pinto Peak and Target Hill rhyolite flow-dome complexes, the Ratto Springs rhyodacite, and the Richmond Mountain andesite. These were dated by Blake et al. (1975) by K-Ar methods that yielded ages between 37 and 33 Ma. Five 40Ar/39Ar dates from step heating experiments on biotite, hornblende, and plagioclase phenocrysts by Long et al. (2014) yielded plateau ages that range from 37.43 to 37.14 Ma, with 2σ errors ranging from 0.02 to 0.21 m.y. In addition, a single-crystal 40Ar/39Ar sanidine date on rhyolite lava from the Pinto Peak dome yields an age of 36.69±0.04 Ma (Long et al., 2014). Late Eocene volcanic rocks overlie Carlin-type gold mineralization hosted by Paleozoic rocks at both the Rustler and East Archimedes pits, implying shallow depths of gold deposition and perhaps constraining their ages (C.D. Henry, written commun., 2014; Barton et al., unpub. data). Radiometric dating of volcanic rocks for the age of Carlin-type mineralization remains problematic in some cases because it is currently unknown whether anomalous metal contents and clay alteration in the volcanic rocks are of hypogene or supergene origin (C.D. Henry, written commun., 2014; Barton et al., 2015). Currently, the most likely age of the Carlin-type gold deposits in the district is 36 – 38 Ma, i.e., late Eocene by the time scale of Walker et al. (2013).

7.3 Structural Geology

Hague (1892) divided the Eureka district into structural blocks, the dominant features of which are large, roughly north-south trending, fault-bounded antiforms. The most well-known of these is now referred to as the Eureka culmination, in which the oldest rocks in the stratigraphic section (Cambrian Prospect Mountain Quartzite) sit at the highest elevation in the district on Prospect Peak, surrounded by younger strata at lower elevations (Figure 7-2). Later workers (Nolan, 1962; Nolan et al., 1971; Nolan et al., 1974) mapped folds and thrust faults within these blocks, including the Hoosac fault, which has since been interpreted by various workers as either a thrust fault (Taylor et al., 1993; Lisenbee et al., 1995; Long, 2012) or a normal fault (Hague, 1883; Nolan et al., 1974; Long et al., 2014).

Considering that the Eureka district is located just kilometers from the easternmost exposures of the Roberts Mountains allochthon (Dilles et al., 1996), contractional deformation in the district, lacking other constraints, might be attributed to the emplacement of the allochthon in the mid-Paleozoic (Figure 7-1). Orogenic deposits of Early Cretaceous age, however, have been tied to contractional deformation in the Eureka district. Conglomerates of the Newark Canyon Formation (Vandervoort and Schmidt, 1990) yield U-Pb zircon ages of 116–121 Ma (Druschke et al., 2011; Long et al., 2014). Although the presence of some mid-Paleozoic deformation probably cannot be precluded, the thrust faults that were originally described by Nolan (1962) subsequently have been grouped into the Eureka thrust belt. These were later correlated with the Garden Valley thrust system, and have become part of what is now known as the central Nevada thrust belt (Figure 7-1), which in turn has been tied to the Sevier orogeny (Speed, 1983; Speed et al., 1988; Bartley and Gleason, 1990; Armstrong and Bartley, 1993; Taylor et al., 1993, 2000; Druschke et al., 2011; Long et al., 2014). As emphasized by Bartley and Gleason (1990), the present-day distance between the central Nevada thrust belt and the Sevier thrust front of ~350 km (Figure 7-1) is substantially greater than the Cretaceous distance, which was most likely around 200 km (e.g., Gans, 1987), because of subsequent extensional deformation.

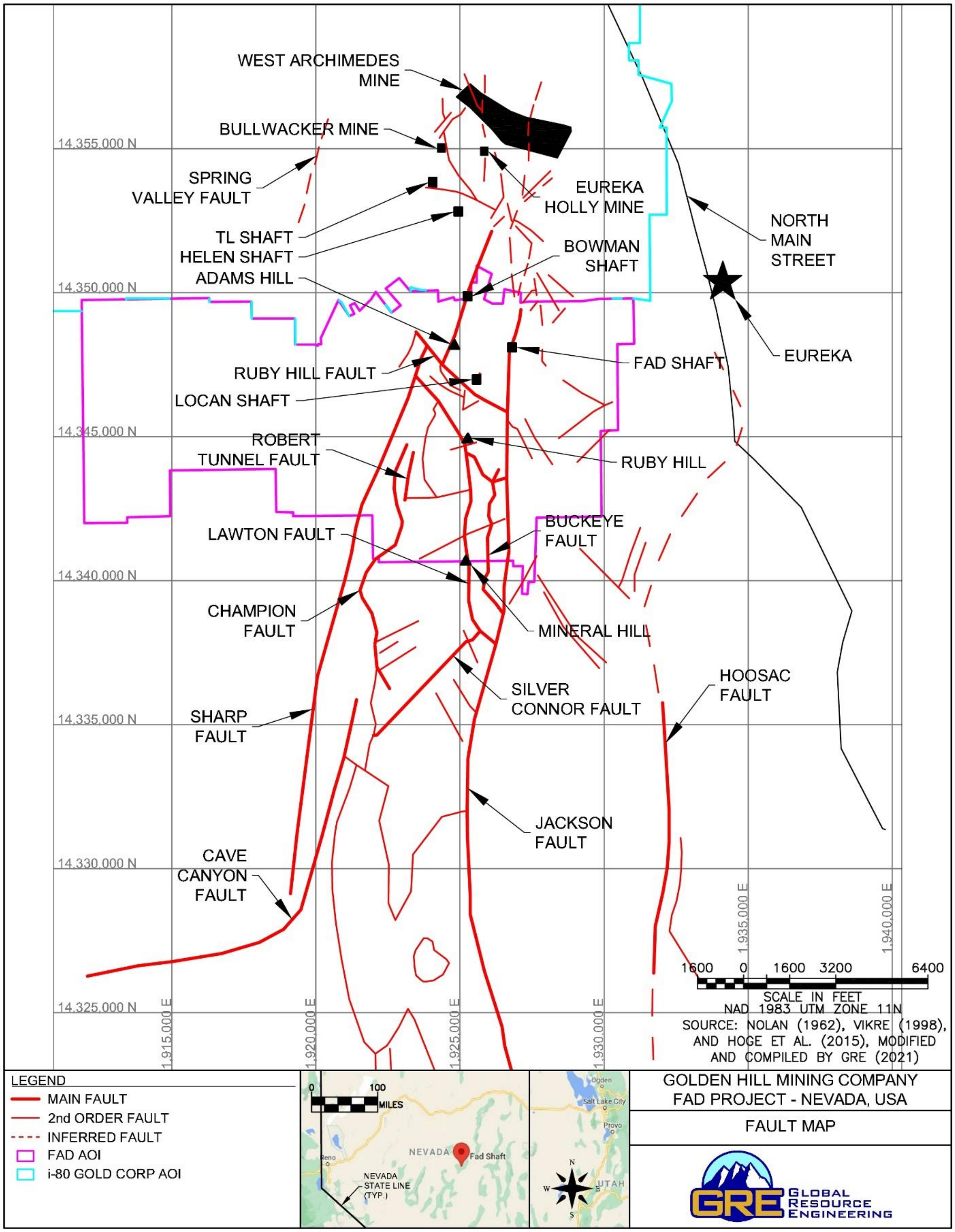
The kinematic history of the Sevier fold-and-thrust belt (Armstrong, 1968) in the type area of western Utah during the Early Cretaceous has been a matter of debate (e.g., Armstrong, 1968; Wiltschko and Dorr, 1983; Heller et al., 1986; DeCelles, 2004). Conglomeratic fluvial deposits of the Kevin, Cedar Mountain, and San Pitch Formations in Utah and the Gannett Group in Wyoming, which are Lower Cretaceous (Katich, 1951; Stokes, 1952; Simmons, 1957; Thayn, 1973; Kirkland, 1992; Tschudy et al., 1984; Witkind et al., 1986; Weiss et al., 2003; DeCelles and Burden, 1992), have characteristics of typical foredeep deposits (DeCelles and Currie, 1997) and were sourced from the west-southwest (Furer, 1970; Lawton, 1982, 1985; DeCelles, 1986; DeCelles and Burden, 1992; DeCelles et al., 1993; Lawton et al., 1997; Mitra, 1997; Currie, 1997, 2002). These data suggest that initial displacement on thrusts of the classic Sevier belt in Utah had begun by Early Cretaceous (DeCelles and Coogan, 2006). Aptian deformation within the Eureka district in the hinterland of the Sevier thrust belt is coeval with emplacement of the Canyon Range thrust in western Utah but postdates initiation of the Sevier belt in western Utah by 10 – 30 m.y. and thus represents out-of-sequence deformation (Long et al., 2014).

The ages of deformation suggest that the type of Sevier thrust belt and the central Nevada thrust belt systems overlapped in time and thus may be kinematically linked. There is evidence in the Snake Range of eastern White Pine County for contractional deformation of mid-Jurassic and Late Cretaceous ages (Miller et al., 1988), but the ages of rocks that crop out at the base of the early Cenozoic unconformity and the uniformly low Conodont Alteration Indices (CAI) for a given stratigraphic horizon indicate that most of east-central Nevada was not breached by major thrust faults and thus was a relatively undeformed area in the hinterland of the type Sevier belt in Utah and southern Nevada (Armstrong, 1968; Gans and Miller, 1983; Gans et al., 1990; Long, 2012). The thrust systems in central Nevada and western Utah instead could be largely separate, west-rooted thrust systems that eventually merge to the south near Las Vegas (Figure 7-1). Alternatively, they could be kinematically linked by a large, bedding-parallel flat that passes beneath east-central Nevada (Speed et al., 1988).

The main structural feature of the Eureka district is a north-trending anticline. Thrusting from the west has cut through the anticline, overturning the east limb as the thrust plates overrode the fold. Nolan has distinguished three main thrusts which he has named the Diamond Tunnel, Ruby Hill, and Dugout Tunnel thrust zones. The Ruby Hill thrust zone overlies Ruby Hill. In this area, two thrust strands are mapped by Nolan (1962), one of which brings Prospect Mountain Quartzite over the younger, Cambrian Hamburg dolomite; the second higher strand thrusts Eldorado dolomite over quartzite. This upper strand, or thrust plane, in the FAD shaft has been called the Champion thrust. The lower thrust plane is referred to as the Buckeye thrust. The Eldorado dolomite in the upper plate of the thrust zone is the principal host for the replacement mineralization bodies at Ruby Hill.

The thrusting was followed by additional folding and normal steep-angle faulting. Most of these steep faults are north or northwest trending. The important ones in the Ruby Hill area and northern parts of the district are the Sharp fault, the Hoosac fault, the Jackson-Lawton-Bowman fault zone trending north, the Ruby Hill, the Adams Hill and Martin faults trending northwesterly, and the silver Connor fault trending northeasterly (Figure 7-4).

Figure 7-4: Fault Map of a Part of the Eureka Mining District and surrounding the FAD Shaft



Source: Nolan (1962), Vikre (1998), and Hoge et al., (2015), modified and compiled by GRE (2021)

Nolan believes both the thrust faults and normal faults were important in providing channels for mineralization-forming solutions and sites for precious and base metal deposition. Therefore, they are mostly pre-mineral in age. But some researchers like Vikre (1998) presented a classification of faults based on their ages, which shows some of them are post-mineral in age. Because of the importance of this issue, it will be discussed in detail in the following sections.

The sections below describe all the main faults within the northern Eureka district based on the findings of Hoge et al., (2015).

7.3.1 Sharp Fault

The Sharp fault is the intermediate member of a set of three, northwest-stepping, west-dipping normal faults that define the Eureka district's western edge (Figure 7-2 and Figure 7-4). From south to north, the set consists of the Cave Canyon, Sharp, and Spring Valley faults (Nolan, 1962). These faults cut alluvium and are interpreted by most workers (e.g., Nolan, 1962) to be related to Basin and Range-age extension, although there are other northerly striking, west-dipping normal faults in the footwall of the Cave Canyon fault that may be older (e.g., Dugout fault of Nolan, 1962) and that contain Au- and Sb-bearing jasperoid. There are other west-dipping faults in the district, including at least one small-displacement fault in the Archimedes deposit (Dilles et al., 1996).

The Sharp fault is poorly exposed over much of its trace, but Nolan (1962, p. 25) reported dips of 55–60°, and his map shows that the fault has a northern tip with several splays that dip 48–72°W. The Sharp fault places Devonian Devils Gates Limestone in the floor of Spring Valley against the Lower Cambrian rocks that make up the western flank of the Eureka culmination on Prospect Ridge and Mineral Hill. The Devils Gate Limestone in eastern Spring Valley adjacent to the Sharp fault is thick-bedded and somewhat poorly exposed. The Cambrian Prospect Mountain Quartzite and Eldorado Dolomite on the western flank of the culmination strike roughly north-south and have moderate to steep westerly dips (35–60°).

7.3.2 Eureka Culmination and the Champion Fault

The Eureka culmination is a well-defined, north-south tending anticlinal crest that includes Prospect Ridge and Mineral Hill and that is marked by extensive exposures of Cambrian Prospect Mountain Quartzite (Figure 7-2 and Figure 7-4); it is a regional structure with a strike length of ~100 km, the existence of which has been corroborated by Paleogene erosion patterns (Long, 2012; Long et al., 2014). In the Mineral Hill area in the northern Eureka district, folds have been dismembered by crosscutting normal faults, and the map pattern of the culmination consists of a core of Cambrian carbonate rocks, which are flanked to the east and west by the Lower Cambrian Prospect Mountain Quartzite. The carbonate rocks in the core are folded into a syncline with the stratigraphically youngest Hamburg Dolomite in the center and stratigraphically defining the edges. Folding appears to be spatially associated with the Champion fault, a west-dipping reverse fault. Structure contours on the Champion fault indicate that it dips 23° to 43°W, steepening from south to north.

The Cambrian Prospect Mountain Quartzite on the western flank of the Mineral Hill syncline dips moderately steeply (55 – 60°) to the west. The Prospect Mountain Quartzite on the eastern flank of the syncline is intensely fractured and oxidized; no reliable bedding surfaces have been identified during this or any previous studies.

7.3.3 Jackson-Lawton-Bowman Normal Fault System

The Jackson-Lawton-Bowman normal fault system runs the length of the Eureka district. It is mapped as a single fault strand from the southern edge of the district north to the Eureka tunnel, at which point the strand diverges into the Jackson and Lawton branches (Figure 7-2 and Figure 7-4). Due to its tendency to form topographic depressions, the fault is poorly exposed along its length and has been identified primarily based on the juxtaposition of younger units in the hanging wall (down to the east) against older units on Prospect Ridge and Mineral Hill. Just south of the map area of this study, Nolan (1962) recorded steep easterly dips of 70 – 72° on the fault. At the southern end of the map area, the northern continuation of the Jackson fault splits into two branches; the Jackson branch continues to the north, and the Lawton branch (Zulu Canyon fault of Vikre, 1998) veers slightly to the northeast along the floor of Zulu Canyon. Structure contours on the Jackson branch indicate dips that range from ~23° to 36°E, with an apparent dip in the cross section of 27°E, similar to the dip shown on the cross section (Figure 7-4). Structure contours on the Lawton branch indicate that the southern end dips at ~40°E, whereas the northern end dips at only ~12°E, with an apparent dip 20°E. The hanging wall of the Jackson branch consists of a continuous panel of Cambrian–Ordovician carbonate and clastic rocks that dip to the east; dips are steepest close to the fault and gradually shallow to the east. The footwall of the Jackson branch consists of intensely fractured and oxidized Cambrian Prospect Mountain Quartzite, which dips moderately to the east. The Lawton branch contains west-dipping Secret Canyon Shale, Geddes Limestone, and Eldorado Dolomite in the hanging wall; in its footwall is the Hamburg Dolomite, which makes up the core of the Mineral Hill syncline.

7.3.4 Buckeye Fault

Between the Lawton branch to the west and the Jackson branch to the east is a third structure, the Buckeye fault (Figure 7-4), which has historically been interpreted as the roof thrust of a duplex known as the Ruby Hill thrust zone. The Buckeye fault juxtaposes the east-dipping Prospect Mountain Quartzite in the footwall of the Jackson branch against the moderately west-dipping Secret Canyon, Geddes, and Eldorado units in the hanging wall of the Lawton branch. Close examination of the map pattern shows that this fault cuts down section and thus is more likely a fourth branch of the Jackson normal fault system. At its southern end, the Buckeye fault has a dip of 25°NE measured in outcrop. Structure contours on the fault indicate that it has a true dip of ~20–25° to the east or northeast, with an apparent dip of ~16°E.

7.3.5 Hoosac Fault

The Hoosac fault is perhaps the most controversial structure in the Eureka district. Originally described by Hague (1883), its trace is currently mapped from Hoosac Mountain at the southern boundary of the district north through the town of Eureka. The fault is buried by lava flows and tuffs or alluvium for almost its entire length (Figure 7-4). The one exception is on Hoosac Mountain, where it was first described. Thus, its interpreted trace north of the mountain is based on the estimated location of juxtaposed rocks of the Ordovician Hanson Creek Formation and Permian Carbon Ridge Formation. The Hoosac fault has been interpreted as both a contractional feature (Nolan, 1962; Taylor et al., 1993; Lisenbee et al., 1995) and an extensional feature (Hague, 1883; Nolan et al., 1974; Long et al., 2014). Hoosac Mountain is outside the map area for this study, but the Hoosac fault is critical to district-scale structural reconstructions.

7.3.6 Ruby Hill Fault

The Ruby Hill fault is a northwest-striking structure that forms the northeastern boundary of Ruby Hill (see Figure 7-4) (Nolan, 1962). Nolan (1962) shows three dip measurements on the northeastern side of Ruby Hill, from north to south, of 70°, 62°, and 60°NE. The fault drops Cambrian Hamburg Dolomite in the hanging wall against Cambrian Eldorado Dolomite in the footwall, omitting at least 300 m of stratigraphic section and offsetting Cretaceous carbonate replacement mineralization. The Eureka Corporation sunk the FAD shaft 1941 in order to exploit mineralization in the hanging wall of the Ruby Hill fault but famously, was forced to abandon the project after encountering high volumes of groundwater when the shaft pierced another fault, the Martin fault, which parallels the Ruby Hill fault (e.g., Nolan and Hunt, 1968). As the Ruby Hill fault continues to the southeast, it is cut and offset ~400 m to the south by the Jackson branch. This timing relationship (i.e., the Ruby Hill fault cutting mid-Cretaceous mineralization and, in turn, being cut by the Jackson fault) is one of the few broad constraints on the age of the Jackson fault system.

The matter of whether the Ruby Hill fault is largely pre-mineral or post-mineral, however, is inclusive and may always be so. Nolan cites evidence of sulfide mineralization along the fault zone which indicates pre-mineral relationship. There is also cited evidence of later movement along the fault, so both pre-mineral and post-mineral relationship may exist. From a practical standpoint, the matter has little bearing or effect on the present objectives of the Ruby Hill project.

7.3.7 Silver Connor Fault

The Silver Connor fault, which is well exposed on Prospect Ridge, strikes N40°E and dips ~80°SE (see Figure 7-4). Like the Ruby Hill fault, it juxtaposes the Hamburg Dolomite against the Eldorado Dolomite; however, the Ruby Hill fault is down to the northeast and the Silver Connor fault is down to the southeast. The Silver Connor fault also appears to be cut by the Jackson fault to the northeast, where the Jackson and Lawton branches come together; however, exposure is poor and the offset portion of the Silver Connor fault could not be found east of this intersection.

7.4 Local Geology

The geologic setting of the Eureka Mining District, with considerable discussion of the Ruby Hill area, is described in USGS professional paper 406, 1962, by Thomas B. Nolan. Only some of the salient features of the district and those pertinent to the Ruby Hill area are discussed here.

Although most parts of the property are covered by Quaternary alluvium, geological maps, sections, and holes presented by Nolan (1962), Nolan and others (1956), Vikre (1998), and Hoge et al. (2015) show that Cambrian-Ordovician sedimentary rocks, Cretaceous granodiorite and Quartz porphyry, and Tertiary Volcanic rocks around the property overlain by the Quaternary alluvium (see Figure 7-5 and Figure 7-7). As seen in Figure 7-6 and Figure 7-8, more than 1,000 m of lithostratigraphic units were defined and mapped within the property. Sedimentary rocks are the most abundant in study area. In the northern part of Ruby Hill and around the property, a part of the stratigraphic column includes the lower Paleozoic formations exposed on the surface. Sedimentary rocks within the property in drill holes and in underground opening of the Ruby Hill area and the property include, from oldest to youngest, Prospect Mountain Quartzite (Cpm), Eldorado Dolomite (Ce), Geddes Limestone (Cg), Secret Canyon Shale (Cs), Hamburg Dolomite (Ch), Dunderberg (Cd), and Pogonip Group (Op). A Lithology description of these litho-units is given below.

Cpm - Prospect Mountain quartzite (Lower Cambrian): Well-graded, well sorted, white, pink and tan, fine-grained quartzite, that weathers white, pink, tan, gray, and brown. Decimeter-scale cross-bedded lamination is diagnostic. Cm to decimeter-scale micaceous to sandy shale interbeds are common in the lower part of the section (Nolan, 1956). Contains rare, thin-bedded pebble conglomerate lenses. Forms sharp cliff and ridge outcrops, with characteristic pink-brown blocky float. No lower contact is exposed; at least 1,800 ft thick.

Ce - Eldorado dolomite (Middle Cambrian): Medium-dark gray to blue, very thick-bedded medium to coarse crystalline dolostone, often speckled with common white stringers/spots contrasting with the dark dolostone, giving the unit a diagnostic fenestral ("**blue bird**") appearance (Nolan, 1956). Dark dolomite locally alternates with light-gray, rough-textured dolostone, which defines bedding, and gives the appearance of alternating light and dark bands, with decameter-scale intervals. Localized meter-scale bands of strong brecciation are common and often correlative with cm-decimeter scale calcite fracture-controlled veining. Upper contact with Cg is gradational; contact placed at highest occurrence of massive, thick-bedded blue-gray dolomite. Forms high-relief cliffs; ~1,800 ft thick.

Cg - Geddes limestone (Middle Cambrian): Thin to medium-bedded, well-bedded, dark blue to black carbonaceous limestone with prevalent calcite veins, weathering red/brown to gray, and interbedded with cm-decimeter scale red to tan (iron-oxide) shale beds (Nolan, 1956). Black and distinct bedding is diagnostic. Localized ~2 – 15 cm black chert nodules, are common. Meter-scale, pervasive folding is common and is accompanied by strong fracture controlled white calcite veining. Gradational lower contact with Ce. Outcrops support steep-slopes and bluffs. 200-500 ft thick.

Cs - Secret Canyon shale (Middle Cambrian): Locally consists of an upper limestone member and a lower shale member (Css). Where members cannot be defined, unit is denoted as undifferentiated. Relatively thick shale beds resembling lower Css possibly dispersed throughout Cs. True thickness is indeterminate due to pervasive meter-scale deformation. Apparent thickness is as much as 700 to 900 ft.

Ch - Hamburg dolomite (Middle and Upper Cambrian): Medium to coarse grained, uniform, thick-bedded, gray to brown dolostone weathering brown to light-medium gray. Exhibits mottled white calcite stringers that help define bedding, and white rod-like "blue bird" stringers (Nolan, 1956). Commonly altered, strongly brecciated, dissolved, and/or replaced by amorphous silica; can be porous and vuggy due to these alteration processes. Bedding is poorly defined, and dolostone is lighter gray-brown than that of Ce; forms prominent ridges and high-relief cliffs; 1,150 ft thick.

Cd - Dunderberg shale member (Upper Cambrian): Very thinly laminated, non-calcareous shale, which weathers gray to brown/khaki and dark gray/blue when fresh, with diagnostic interbedded cm-scale lenticular limestone (Nolan, 1956), and exhibiting hummocky bedforms. Contemporaneous bedforms in shale form around nodular limestone discs. Bedded limestone often exhibits dense, fine trilobite hash. Less carbonate and silt than Cs. Pervasive meter-scale folding makes determination of true unit thickness difficult. Structural thickness is ca. 350 ft.

Op - Pogonip Group (Lower-Middle Ordovician), which includes the following three formations:

Antelope Valley Formation: Thin to thick bedded, bluish gray, fine-grained, wackestone, and packstone with diagnostic very thin to thin tan to yellow silty partings and abundant fossils, both in hash and as whole specimens. Coiled, cm-scale Maclurites gastropod shells are diagnostic (Nolan, 1956). Local tan, brown, and white diagenetic chert nodules; less chert in contrast with the Goodwin Formation. Outcrops well, forming blocky ridges and slopes. Interfingering lower contact with Onm; at least 1,000 ft thick.

Onm- Ninemile Formation: Thin-bedded to platy, porcellaneous calcareous shale; weathers tan-green to tan-grey and is olive green to green-tan when freshly broken. Surficial red-brown iron-staining is common. Interbeds of thin, planar bedded gray limestone are common. Distinct from similar units by being arenaceous. Slope forming; does not crop out well. 300-400 ft thick (Nolan, 1956).

Goodwin limestone: Thick, well bedded limestone and wackestone with interbeds of medium bedded, silty, fine–grained limestone weathering light to medium blue-gray and dark gray when fresh (Nolan, 1956). Gray-brown, white, and black diagenetic chert nodules are common in lower and upper parts of section (Nolan, 1956). Middle part of section primarily consists of thinner-bedded limestone with undulating bedding with common interstitial, thinly bedded silty carbonate layers. Abundant fossil hash; Kainella trilobite is diagnostic (Meriam, 1956). Forms rugged, steep slopes and cliffs where strongly brecciated and dolomitized. Upper contact with Onm is gradational. 1,250 ft thick.

7.4.1 Locan and FAD Shafts

The area of economic interest to the present Ruby Hill project is the downthrown block of ground on the hanging wall side of the Ruby Hill fault between the Locan and FAD shafts. At the FAD 2250 level – 2250 feet down the shaft (at 4,654 ft. elevation above sea level), it is about 2,000 ft long in a northwesterly direction parallel to the Ruby Hill fault, and about 1,200 ft wide. The host rock for the replacement mineralization bodies is Eldorado dolomite, which is in the upper plate of the Ruby Hill thrust zone and which, in this area, has overridden Prospect Mountain quartzite. The thrust fault contact in the FAD area is called the Champion thrust fault. It dips about 40^{o} northerly. The dolomite is thus roughly wedge-shaped; being thin at the southern boundary of the area and becoming thicker to the north in the direction of dip of the Champion thrust fault. It is about 800 ft thick in the vicinity of the FAD shaft. The strip of ground is bounded on the southwest by the easterly-dipping Ruby Hill normal fault and on the northeast by the near-vertical Martin fault in the vicinity of the FAD shaft.

Surface geology of the Ruby Hill and FAD-Locan area is shown on Figure 7-5 and Figure 7-7. A vertical cross-section along a line connecting the Locan and FAD shafts shown on Figure 7-6 and Figure 7-8 serves to further illustrate the geology of the area.

Figure 7-5: Geologic Map of Surrounding the FAD Shaft and Part of the Ruby Hill Area

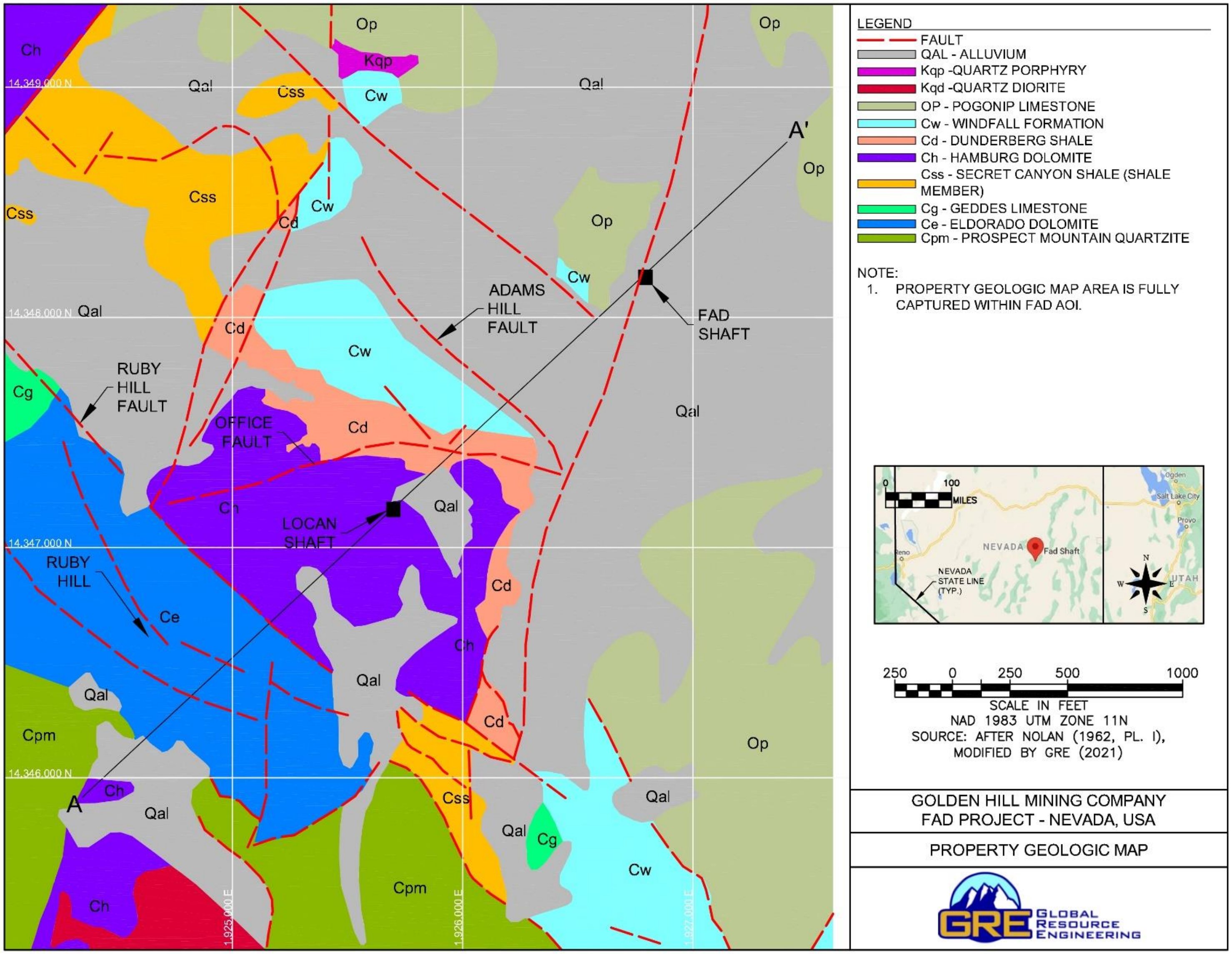
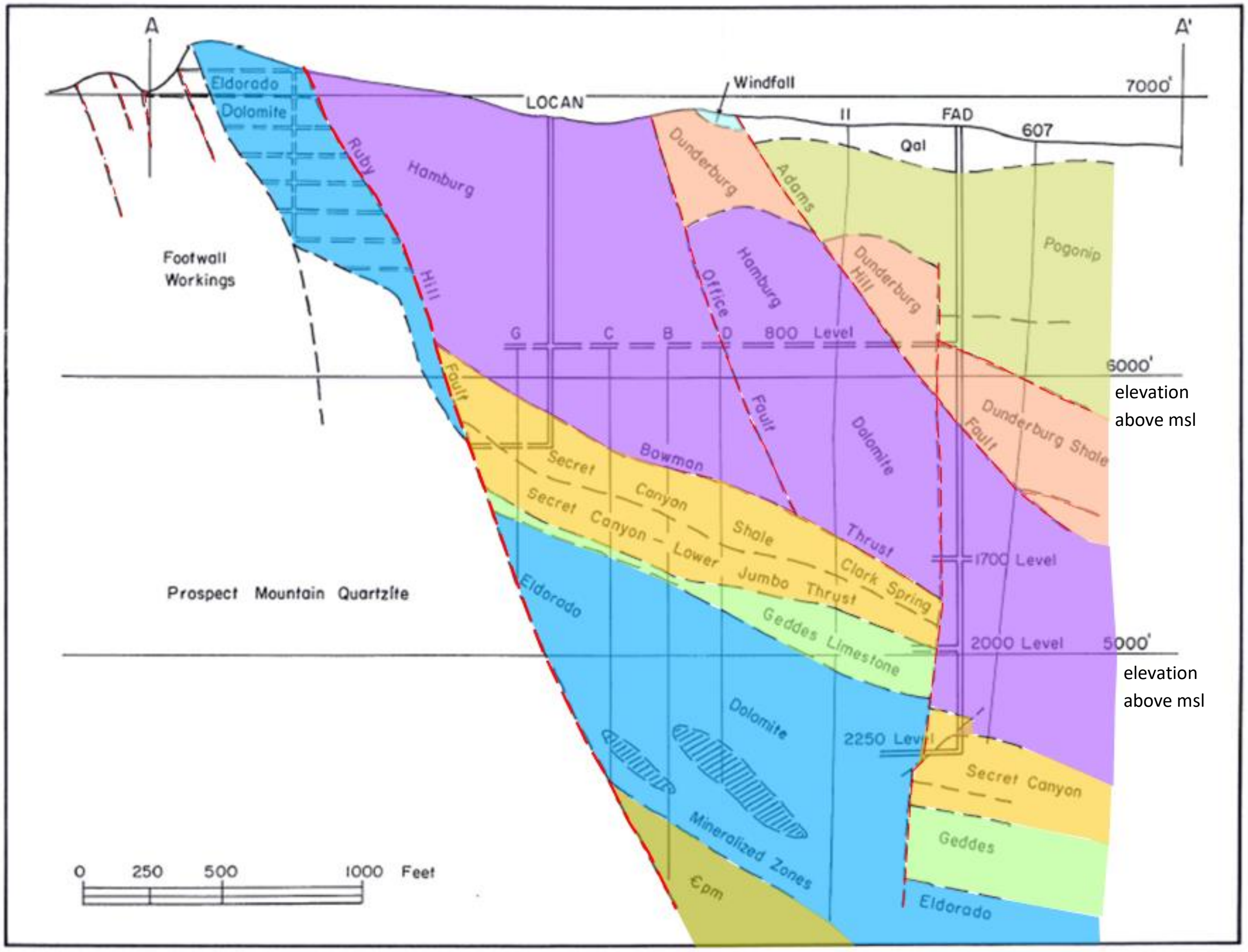
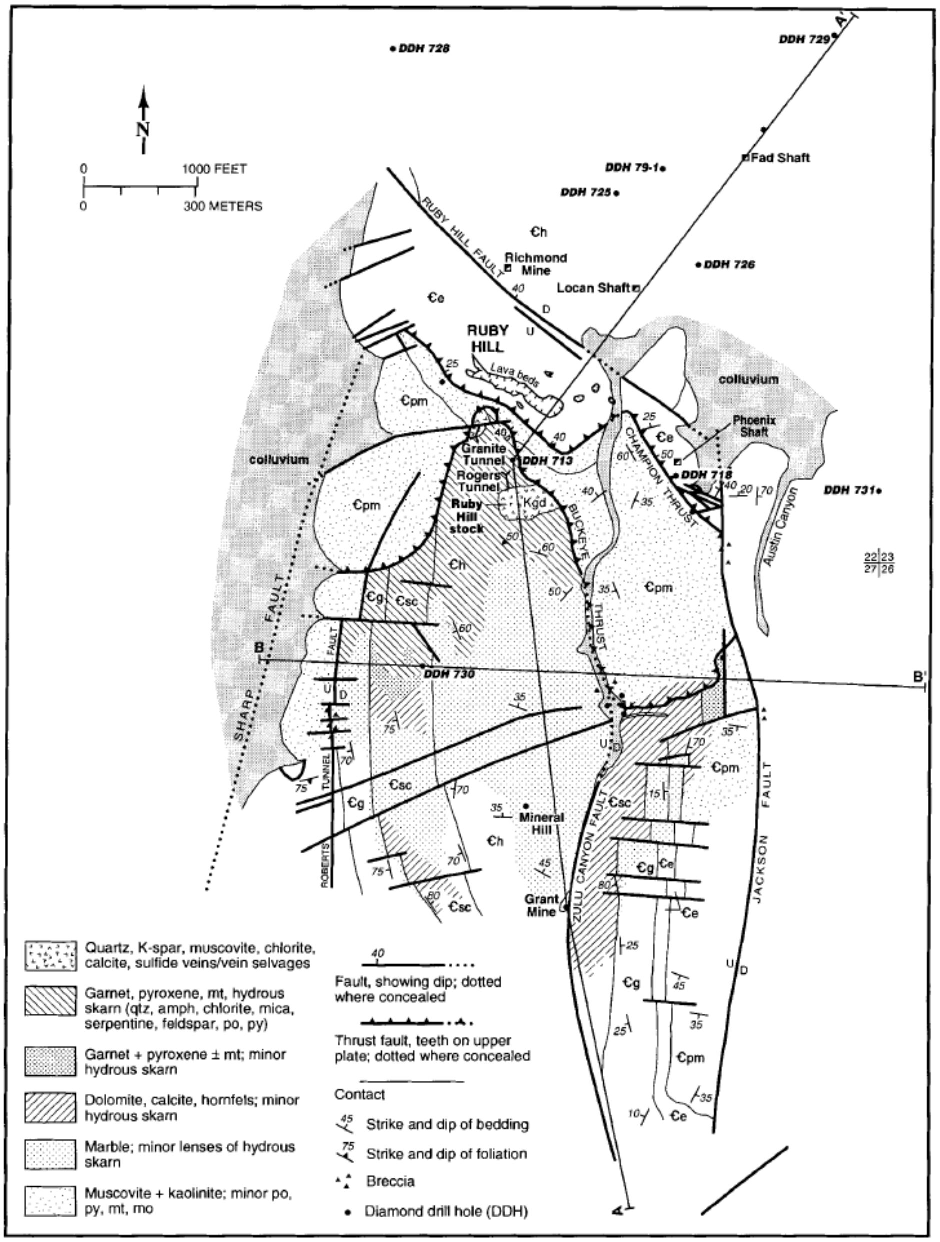


Figure 7-6: Geologic Cross Section through the Locan and FAD shafts



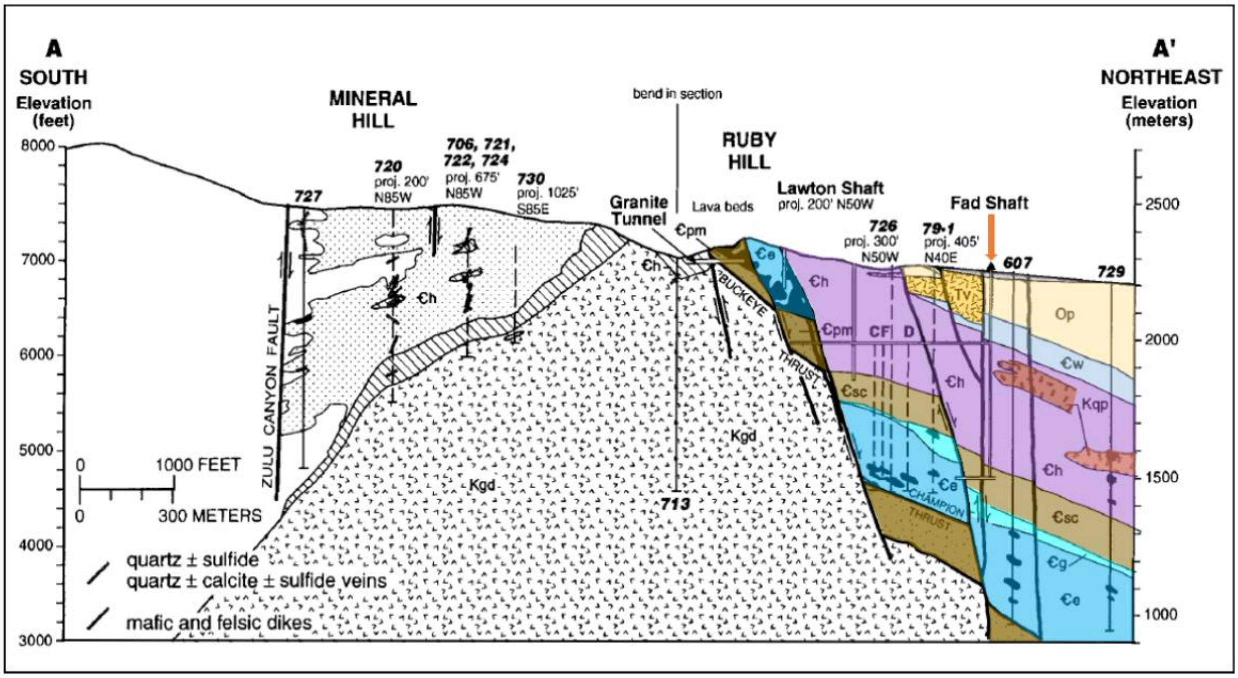
Source: After Nolan (1962, pl. I) and Love (1966), modified by GRE (2021). Note: Level (ex. 800 Level) is equivalent to feet below FAD shaft collar.

Figure 7-7: Map of Lithologies, Structures, and Contact Zone Alteration Surrounding the Ruby Hill Stock



Source: Vikre (1998), Also shown are drill holes (DOH) from which subsurface data were obtained, geographic points referred to in the text, and lines of sections (Figure 7-8). Lithologic designations are mostly those used by Nolan (1962): Kgd = granodiorite, Ꞓpm= Prospect Mountain Quartzite, Ꞓe = Eldorado Dolomite, Ꞓg = Geddes Limestone, Ꞓsc = Secret Canyon Shale, Ꞓh = Hamburg Dolomite, qtz = quartz, amph = amphibole, py = pyrite, mt = magnetite, mo = molybdenite

Figure 7-8: Geologic cross-section of A-A' from lithology and structural map surrounding the Ruby Hill Stock



Source: Vikre (1998), modified by GRE, 2021.

The FAD 800 level, which links the FAD and Locan shafts (elev. 6,118 ft), and the FAD 2250 level crosscut (elev. 4,654 ft), which extends approximately 1,000 ft southwest from the FAD shaft, are the only extensive underground openings in this block of ground. As noted on the 800 and 2250 level maps, except for the Ruby Hill and Martin faults which bound the block of ground, no large faults are shown. Numerous faults and fractures with diverse attitudes are present, but in the massive Hamburg dolomite on 800 level and also in the Eldorado dolomite on 2250 level it is not possible to determine the strength or displacement along these breaks.

The Eldorado dolomite is the important host rock unit in the FAD-Locan area. As shown on the cross-section in Figure 7-6, the average thickness in this part of the area is about 800 ft. As exposed in the FAD 2250 level crosscut, the rock is a massive dark to light gray dolomite with some limestone. Except for a few places in which fine laminations are present, most evidence of bedding is obscure. Mottling of light and dark colors is common. Some areas are very light in color and contain numerous small irregular vugs and patches of white calcite. Many irregular patches and "blocks" of dark gray dolomite are present and these are thought to represent the original unaltered rock. In a few areas, the angular shaped dark patches scattered through the light-colored rock have the appearance of a breccia.

Almost all of the Eldorado dolomite on 2250 level is strongly fractured. Both flat and steep dips are common, and the trends are diverse, resulting in an interlacing network of fractures. A minor amount of fault breccia is developed on some of the slips and limonitic gouge is present on some faults in and near the mineralized areas.

Sphalerite formed by replacing dolomite, thereby filling in spaces between pyrite crystals, masses and laths. Sphalerite also replaced pyrite and, in the process, incorporated a considerable amount of iron into the sphalerite lattice.

Evidence indicates that at least some chalcopyrite was introduced by hydrothermal solutions. This occurred approximately contemporaneous to arsenopyrite mineralization. Galena was introduced somewhat later.

Silver is contained in solid solution with galena, but silver continued to be added as argentite veinlets after galena deposition had ceased. Native gold and argentite were apparently the last of the hydrothermal particles, probably in the near vicinity of galena or contacts between galena and pyrite or galena and sphalerite.

Deep oxidation of the mineralization during a later geologic epoch caused replacement of galena by cerussite and of sphalerite by smithsonite. Zinc liberated from sphalerite was carried into wall rock dolomites where it was deposited as smithsonite in fractures and along dolomite grain boundaries. Mineralized shoots of non-sulfide zinc not easily visible to the eye could have been formed in this manner. However, in areas of intense post-mineral leaching the dolomite was later dissolved out, leaving the smithsonite standing as a zinc-carbonate honeycomb. This usually contains considerable fine, crystalline pyrite inherited from the earlier wall rock. Some of this pyrite is in the form of remnants of laths identical to those in wall rock and mineralized shoots.

Mineralization is complicated by the presence of minute particles of all of the sulfides. These are abundantly distributed throughout mineralized rock and carbonate-rich mineralized rock. They are partly the result of tectonic and solution brecciation, partly the result of replacement of sulfides by later sulfides and of sulfides by carbonates, and partly the result of intense post-mineral leaching of mineralized material and wall rock. Intense leaching has left some parts of mineralized shoots remaining as pockets of soft, "sooty" sphalerite or incompetent masses of darkened, iron-rich sphalerite in which individual grains are coated with a dark colored or black "sooty" sphalerite powder. The porosity and relatively low density of mineralized material also influence its tenor.

There are no supergene sulfides in the mineralized shoots, but much of the material has been stained by later iron- and manganese-rich supergene solutions so that it now appears very dark brown or black. Some extremely fine supergene marmatite have been deposited in wall rock and in zinc-carbonate honeycomb. These also seem to contain quantities of dust-like supergene iron and manganese oxides.

7.5 Alteration Type and Distribution

Figure 7-9 shows the distribution of alteration in the map area, which falls into four broad categories: silicification, marble and hornfels, bleaching, and sanding.

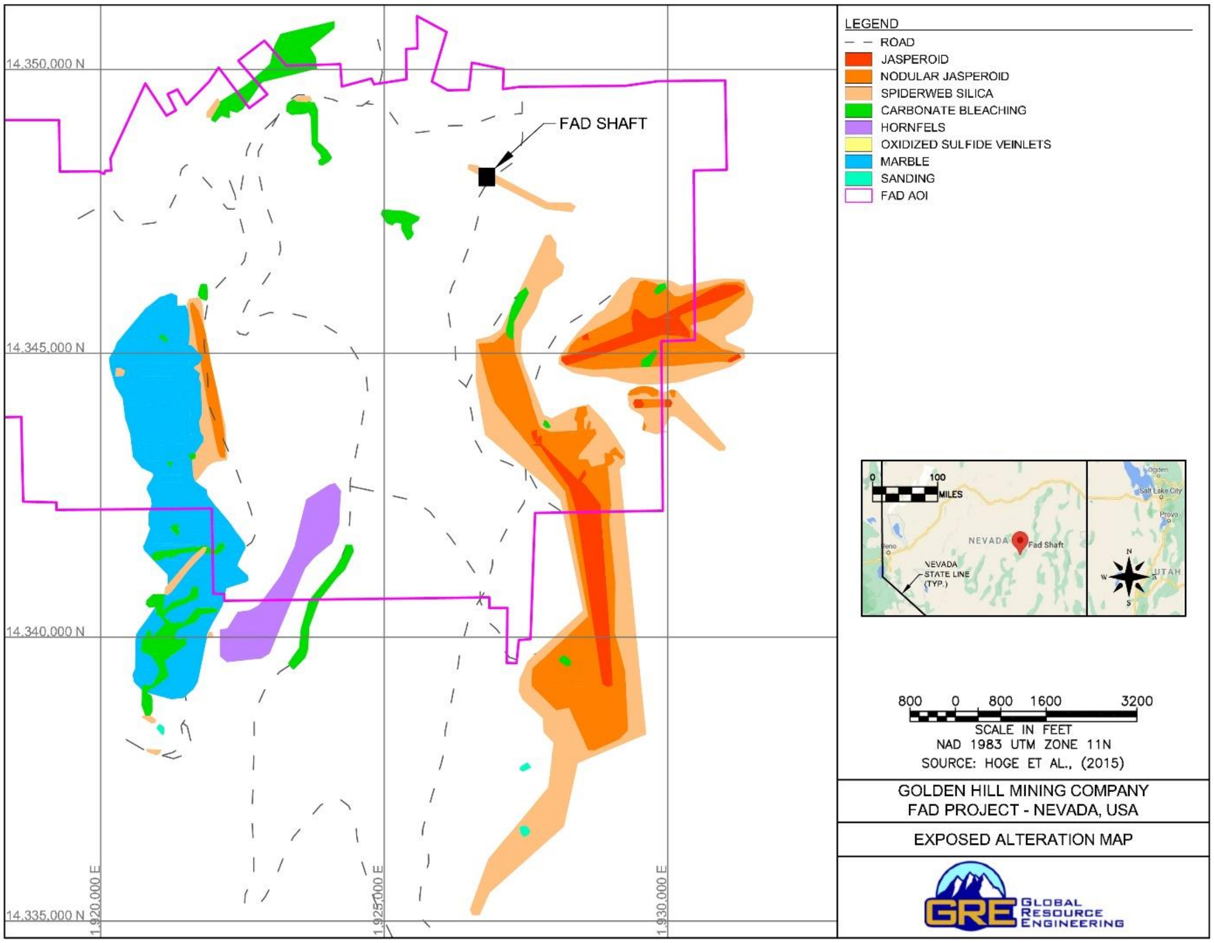
7.5.1 Silicification

Silicification, or the replacement of carbonate minerals with silica, is a common alteration type in Carlin-type deposits but also occurs in a variety of other hydrothermal systems (Lovering, 1962). In the Eureka district, silicification is found in various forms: (1) as true "jasperoid," the total replacement of a carbonate rock outcrop with silica, (2) as "nodular" jasperoid, or the partial replacement of carbonate rock with silica in seemingly irregular patches, (3) as jasperoid veins, which can be centimeters to tens of centimeters thick and tend to be strongly oxidized; and (4) as "spiderweb silica," or thin, randomly-oriented veinlets of silica cutting across otherwise unaltered carbonate rock.

In the Eureka district, jasperoid may be hematite-bearing or hematite-absent. Hematitic jasperoid tends to be intensely brecciated; small (mm to cm scale), highly angular, silicified clasts make up ~75–80% of the rock and are chaotically distributed in an equally siliceous matrix. In thin section, complex crosscutting relationships are observed. Multiple generations of tiny silica veinlets crosscut the rocks; in some cases, silica veinlets are terminated at clast boundaries, whereas in other cases the veinlets cut both clast and matrix, suggesting that silica was continually flooding the rock as it was being brecciated. Non-hematitic jasperoid is equally well silicified but is dark gray and exhibits no brecciation, although any primary depositional textures that may have been present were destroyed.

Figure 7-9 shows the distribution of alteration types in the map area. Hematitic jasperoid (including spiderweb silica, jasperoid veins, and nodular jasperoid as well as massive jasperoid) is the dominant type; non-hematitic jasperoid was found only as float on a historic mine in the Cambrian Humberg Dolomite near the Hamburg–Dunderberg contact. Hematitic jasperoid, by contrast, is common in the northern part of the district, where it is best developed on Mineral Hill, and in the limestone of the Ordovician Pogonip Group east of the historic Jackson mine. Map patterns show that hematitic jasperoid is gradational in intensity. Narrow, elongated cores of massive brecciated jasperoid outcrop are surrounded by wider zones of nodular jasperoid, which are in turn surrounded by a zone of jasperoid veins; most distal to the core is a zone of spiderweb silica.

Figure 7-9: Outcrop map of the northern Jackson fault zone showing alteration



7.5.2 Marble and Hornfels

Marble in the Eureka district consists of coarse- to very coarse-grained, recrystallized calcite. It may be bleached white or retain the gray to blue-gray color of the original unrecrystallized carbonate rock. In general, the coarsest textures of marble occur where the rock is also bleached. Spatially, the distribution of marble is limited to the Hamburg Dolomite west of the Lawton branch on Mineral Hill, where it is abundant; the presence of marble in this area can be attributed to heating by intrusion of the Mineral Hill stock.

There are limited exposures of a dense, hard, gray-green laminated hornfels in the Clarks Spring member of the Secret Canyon Shale (originally, a thinly bedded limestone with yellow-tan argillaceous partings) on the heavily vegetated eastern wall of Zulu Canyon. This hornfels is separated from the marble on Mineral Hill by the Lawton branch. However, porphyritic dike material (10–15% hornblende and ~20% plagioclase phenocrysts in a dark gray, aphanitic groundmass) can be found locally in float on the eastern wall of the canyon. The hornfels observed in the Secret Canyon Formation may be related to the intrusion of this dike.

7.5.3 Bleaching

Bleaching of carbonates is common in the Eureka district, as discrete patches or elongate fingers. In the northern part of the map area, bleaching of marble occurs on the southern end of Mineral Hill; bleached marble appears to grade out into unbleached marble and eventually into unaltered carbonate rock. In the northern map area, patches of bleached rock also trend northeast-southwest through the Hamburg Dolomite, the Windfall Formation, and the Pogonip Group, coinciding with the trace of the Ruby Hill fault. In the southern part of the map area, bleaching is prominent in the Hamburg Dolomite, where it essentially demarcates the fault contact between the Hamburg and Eldorado Dolomites. Perhaps more than any other alteration type, bleaching appears to be fault-controlled; it is often, but not always, spatially associated with jasperoid.

7.5.4 Sanding

Sanding of dolomite is important in the Eureka district. Sanding is spectacularly exposed in the Hamburg Dolomite at the Paroni, Rustler, and Windfall pits, where Carlin-type gold was mined along the Hamburg–Dunderberg contact, and therefore, appears to be important to the development of Carlin-type deposits in the district. In his description of this alteration in the Hamburg Dolomite, Nolan noted that the "hard dense rock that is normally characteristic of the Hamburg has been converted to a dolomite 'sand,' which can be easily scraped and broken by a pick, although it is sufficiently compact to maintain nearly vertical walls" (Nolan, 1962, p. 44). The conversion of "hard dense rock" to dolomitic sand seems to be the result of hydrothermal fluids dissolving interstitial calcium carbonate that cements dolomite grains, because unsanded Hamburg Dolomite commonly reacts vigorously with hydrochloric acid but sanded Hamburg Dolomite does not. The areal extent of sanding in the map area is small; it occurs only as small, discrete patches in the Hamburg Dolomite west of the Jackson branch and in the Hamburg Dolomite on Mineral Hill.

7.6 Mineralization

The authors reviewed the description of mineralization from the Ruby Hill Mine and FAD project and found that the description of Vikre (1998) has an adequate description of the mineralization and has been reproduced for this subsection. At the end of this section a detailed description of mineralization at the FAD area taken from Hecla Mining Company, 1966 is presented.

The replacement mineralization of Ruby Hill were oxidized to the lowest mining levels, about 250 m (-800 ft) below the surface. Replacement ores on Mineral Point and on Prospect Mountain were also highly oxidized, and only small amounts of unoxidized sulfide minerals were mined at the three locations.

In Ruby Hill and on Prospect Mountain, much of the economic-grade material was recovered from the floors of caves where oxidation of sulfide minerals and removal of sulfur and zinc residually enriched lead, silver, and gold in the rock. The historically mined grades of 0.5 to 2 oz/ton (17 to 68 g/tonne) gold, tens of oz/ton (hundreds of g/tonne) silver, and tens of percent lead (Curtis, 1884; Vandenburg, 1938; Nolan, 1962) were undoubtedly derived from oxidation of sulfide deposits with grades as much as 4 times lower, as evidenced by the tenor of sulfide replacement deposits encountered by drilling north of Ruby Hill. A resource of 3.1 million tons at 3.7% lead, 8.3% zinc, 0.16 oz/ton (5.4 g/tonne) gold, and 5.6 oz/ton (190 g/tonne) silver is estimated to exist about 600 to 800 m (-2,000 to 2,600 ft) below the surface in the down-dropped block north of Ruby Hill (Love, 1966).

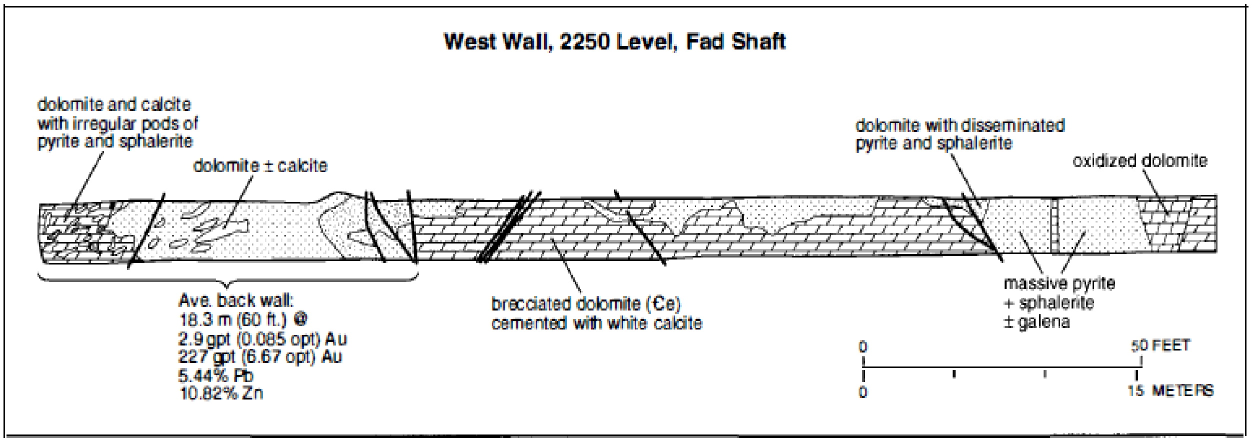
The reader is cautioned that the historic calculations from Love 1966 presented above are neither a Resource nor a Reserve as defined by NI 43-101. The calculation did not follow standards set forth in NI 43-101 and current CIM standards for mineral resource estimation (as defined by the CIM Definition Standard on Mineral Resources and Reserves dated May 10, 2014). Golden Hill has not done sufficient work to classify this historical estimate as a current mineral resource and have referred to this estimate as a "historical resource"; they are not treating it, or any part it, as a current mineral resource. This historical resource estimate should not be relied upon and has only been included to demonstrate the mineral potential of the FAD Property.

Lead, zinc, gold, and silver values in oxidized replacement mineralization of Ruby Hill, Mineral Point, and Prospect Mountain occur in cerrusite, anglesite, and plumbojarosite, and in lesser amounts of mimetite, bindheimite, hemimorphite, and smithsonite (Nolan, 1962; Nolan and Hunt, 1968). These minerals are mixed with limonite, goethite, hematite, dolomite, calcite, aragonite, copper oxides, and small amounts of barite, wulfenite, and unreplaced wall-rock dolomite. All metallic oxide minerals formed from weathering of sulfide minerals, as remnant nodes of galena, pyrite, and sphalerite enclosed by iron, lead, zinc, and arsenic oxides exist on mine dumps. No silver minerals or gold have been recognized in oxidized replacement deposits.

Sulfide replacement deposits north of Ruby Hill, on Prospect Mountain and on Mineral Point, consist mainly of subequal amounts of pyrite, sphalerite, and galena, with subordinate amounts of hydrothermal dolomite, calcite, arsenopyrite, tennantite, pyrrhotite, quartz, and chalcopyrite (Figure 7-10). Locally, relatively pure pods of pyrite, galena, and sphalerite with dimensions of tens of centimeters exist within sulfide replacement masses north of Ruby Hill and in Prospect Mountain. Grain size of pyrite, sphalerite, and galena and hydrothermal dolomite ranges from 1 to 4 mm in Ruby Hill deposits; sulfide aggregates in quartz porphyry tend to be slightly coarser grained.

Sulfide replacement deposits north of Ruby Hill pyrite, intergrown with small amounts of arsenopyrite, are partly replaced by or intergrown with sphalerite and galena. These sulfide minerals replace both hydrothermal dolomite ± calcite and Eldorado Dolomite that encloses sulfide masses. On a microscopic scale, pyrite contains inclusions of sphalerite, chalcopyrite, and pyrrhotite. Sphalerite contains inclusions of chalcopyrite, pyrite, tennantite, and rare pyrrhotite, which is sometimes elongated and entrained along cleavages. Tennantite also fills fractures in and is intergrown with sphalerite. Rare inclusions of seligmannite ($CuPbAsS_3$) occur in galena. Galena locally encloses pyrite and sphalerite aggregates and cements fractured pyrite and sphalerite.

Figure 7-10: Rib Map of the 2250-foot level from the FAD shaft



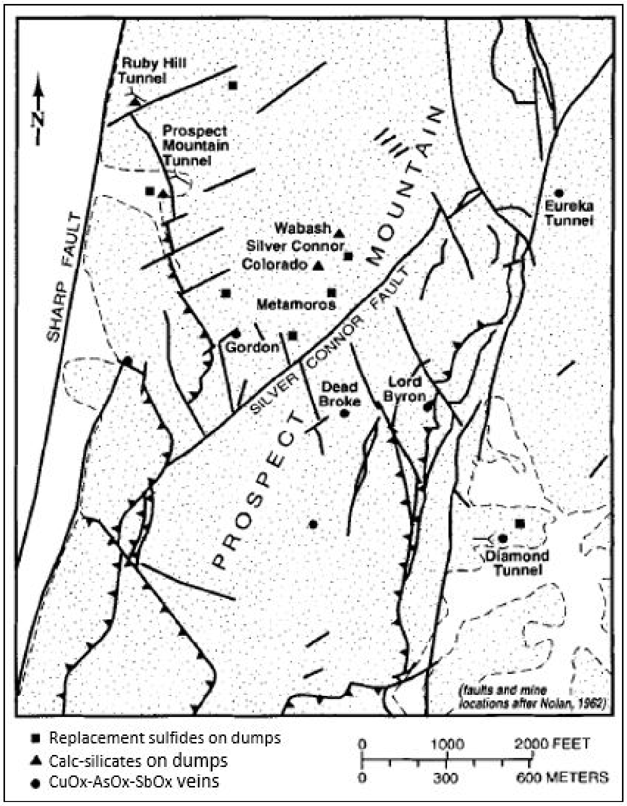
Source: Vikre (1998): The map showing the distribution of sulfide replacement of Eldorado Dolomite in the down-dropped block north of Ruby Hill. Section is modified from a map by A.A. Lillibridge, dated 9/30/ 65 and provided by the Ruby Hill Mining Company. Designation of some wall rock as limestone may reflect remnant limestone in Eldorado Dolomite that occurs throughout the district (e.g., Nolan, 1962). Location of the FAD Shaft is shown in Figure 7-5 and Figure 7-7. gpt = grams per tonne; opt = troy ounces per short ton.

Pyrite, arsenopyrite, and sphalerite in the replacement deposits north of Ruby Hill are invariably finely fractured and cemented with calcite. Calcite-filled cracks in these minerals are up to tens of micrometers wide and may be as dense as tens of cracks per square centimeter. Locally, finely comminuted pyrite and sphalerite are entrained in calcite matrix, further illustrating that the precipitation of late, fracture-filling calcite followed a sulfide deformational event. Galena is entirely unfractured, perhaps a result of plastic instead of brittle deformation, but there is no evidence of annealed or strained galena crystals. Whereas other sulfides in drill holes (Binyon, 1946; Love, 1966) and on the FAD Shaft stockpile (derived from the 2250 level) are finely comminuted because of dissolution of late calcite cement, galena masses are generally competent.

Pieces of a post-sulfide breccia consisting of subrounded clasts of sulfides and subangular dolomite + pyrite clasts, mostly <1 cm in dimension, in a matrix of finely comminuted dolomite are found on the FAD Shaft 2250-level stockpile. The breccia is probably from a post-mineralization fault zone.

Examination of remnant sulfide masses from dumps on Prospect Mountain showed that sulfide species, textures, and paragenesis are generally similar to those preserved at depth north of Ruby Hill. Chalcopyrite is somewhat more abundant in Prospect Mountain sulfide replacement deposits, as reflected by the relatively common occurrence of copper oxides on dumps. Quartz is a minor component of some replacement deposits and small amounts of acanthite and miargyrite occur as inclusions in galena from the Diamond Tunnel dump (Figure 7-11).

Figure 7-11: Map showing the location of sulfides replacement deposit, quartz veins, and Calc-silicates on mine dumps on the north end of Prospect Mountain



Replacement sulfide minerals that are spatially related to quartz porphyry intrusions north of Ruby Hill and on Mineral Point, consist of individual crystals, aggregates, and intergrowths of galena, sphalerite, and pyrite, which are commonly coarser grained, especially those in breccia and fault zones within quartz porphyry, than sulfide minerals in replacement deposits in dolomite. On Mineral Point and in TL Shaft (Figure 7-2), galena is the predominant sulfide where it is intergrown with and contains inclusions of pyrite and sphalerite. Sphalerite in or spatially associated with quartz porphyry is characterized by fine growth bands (described below), and contains inclusions of pyrite, chalcopyrite, arsenopyrite, and tennantite. Arsenopyrite is uncommon but locally cements fractured pyrite, whereas fractured pyrite, arsenopyrite, and sphalerite are cemented by calcite. In general, parageneses in quartz porphyry-related sulfide replacement deposits and in sulfide replacement deposits in dolomite near Ruby Hill are similar, although galena is more abundant in replacement deposits in and near quartz porphyry, and sphalerites in the two groups of deposits differ in texture and composition.

Galena and sphalerite are the main sources of lead and zinc, respectively, in all replacement deposits. Silver occurs in small amounts in tennantite, galena, acanthite, and miargyrite. Gold, unobserved microscopically, occurs mostly in pyrite, based on metallurgical tests. In order to determine the abundance of gold and other minor elements in sulfide minerals from replacement deposits, as well as in other hydrothermal sulfide minerals (pyrite in veins in granodiorite, pyrite in hydrous skarn, and pyrite in disseminated gold deposits) gold, silver, arsenic, antimony, mercury, tin, and bismuth concentrations were determined by fire assay and atomic absorption spectrometry. The major sulfide replacement minerals (pyrite, sphalerite, and galena) contained moderate to high concentrations of all minor elements analyzed, with pyrite containing the largest amounts of gold, and pyrite and galena containing the largest amounts of silver. Pyrite in veins in granodiorite and in hydrous skarn contained very low concentrations of all minor elements analyzed, with the possible exception of arsenic. Because of the small sample size, only a few analytic data were obtained for pyrite in one disseminated gold deposit (Ratto Canyon). Gold at Ratto Canyon apparently occurs in sites other than pyrite, which contained approximately 0.07 ppm gold (0.07 g/tonne), as the sample from which pyrite was extracted assayed more than 1 oz gold/ton (>34 g gold/tonne).

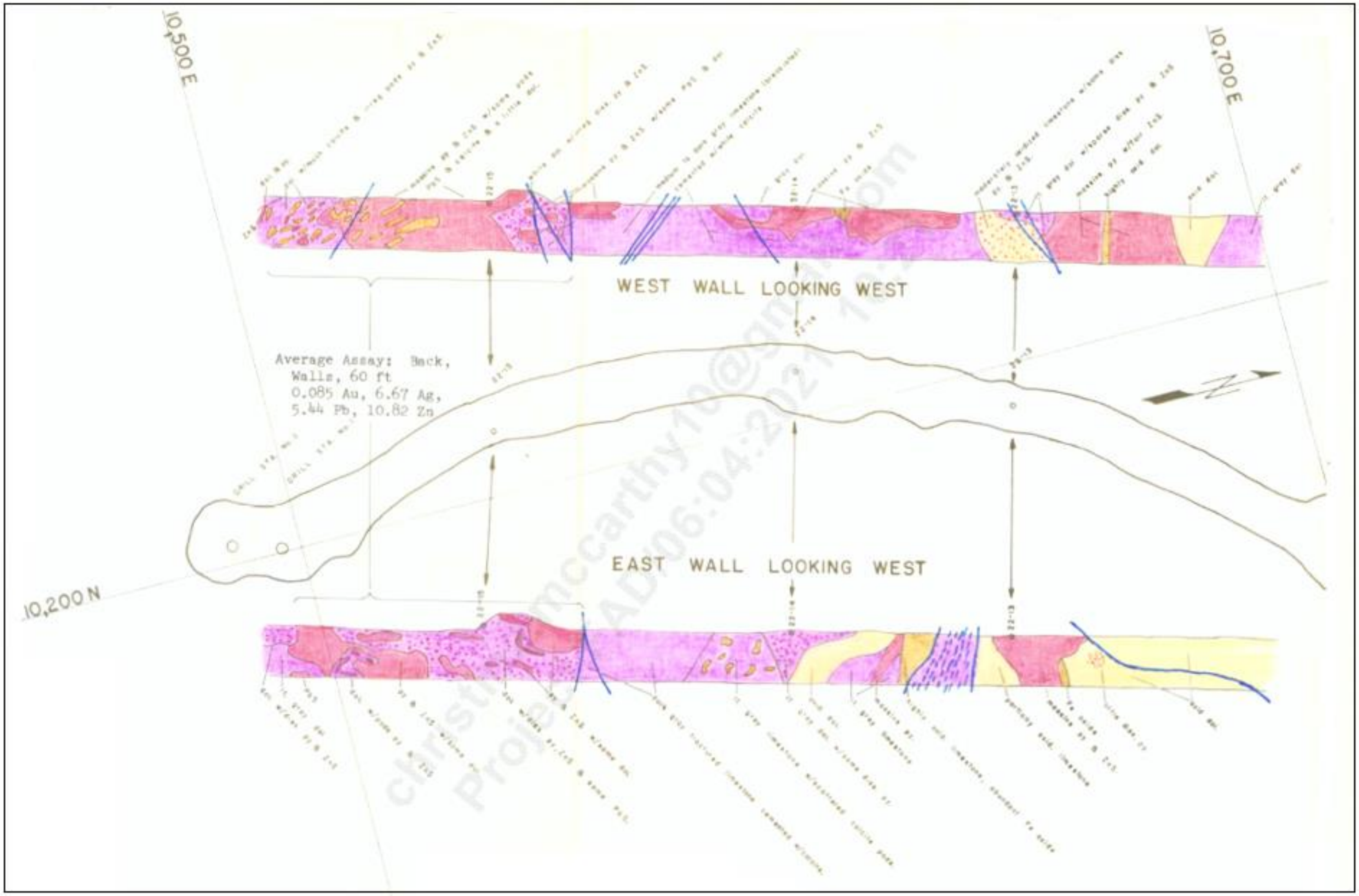
Massive sulfide mineralization was exposed in three sections of the crosscut on 2250 level of the FAD area. The first mineralization was encountered in drilling the 700-grout series. The mineralization was exposed in the north wall of the crosscut for a length of 33 ft. Little mineralization was exposed in the floor and back of the crosscut and it was present for only about five feet on the south wall near the west end of the section. The mineralized rock was mostly soft, granular pyrite and sphalerite with only minor galena. The eastern boundary appeared to be a steep westerly-dipping fault, but the others were irregular replacement boundaries without apparent controls.

The other mineralization exposures in the 1100- and 1200-grout series of the cross-cut were somewhat longer and contained more galena. The average grade of the 60-foot length of mineralization in the 1200 series was 0.085 oz gold, 6.67 oz silver, 5,44% lead and 10.82% zinc. The sulfide boundaries are extremely irregular as shown in Figure 7-12. Massive granular pyrite is most prominent with dark brown sphalerite next in abundance. Galena is present in wispy streaks and bunches intermixed with the pyrite and sphalerite. In a few places it is seen in fairly massive pods. Pyrite as well as some sphalerite is disseminated in areas surrounding the massive sulfide. Strong oxidation has taken place along some fracture in and near the sulfide masses and almost all of the rock has been oxidized to a slight extent.

The irregular nature of the mineralization as exposed in the crosscut is also evident from the erratic pattern of mineralized intercepts in the long hole drilling. Sulfides were present through considerable lengths in many holes. If only the higher grade sections (those considered for historic reserve estimates - See Section 6.7.1) are connected, there appears a variable pattern of pipe-like or chimney-like forms, some of which are interrupted or capped by flat replacements covering larger areas. These forms appear to be locally connected and may persist through a vertical range of 200 to 300 ft.

In spite of the considerable amount of work in the mineralized areas on 2250 level, our knowledge of the geometry of the mineralized bodies and mineralization controls is still vague and incomplete. It seems quite evident at this point, however, that we are not dealing with a flat, blanket-like replacement body as was indicated in a general way by the surface drilling and holes B-F from the FAD 800 level. The shapes of the mineralization bodies will likely be similar to those of the old mine areas in the footwall of the Ruby Hill fault. It is also likely that faulting and fracturing will be found to be the principal control, but this has not yet been established.

Figure 7-12: Section Along 2250 Level X-Cut Walls (Scale 1" = 20')



Source: Hecla Mining Company (1966)

A mineralogic study of the material based on samples from the 2250 level crosscut and from some of the drilling on 2250 level was made by A.H. Sorensen during the course of the development work and a brief summary of the results follows:

Strong evidence was found pointing to a magmatic hydrothermal origin for Ruby Hill mineralization. Early sulfide minerals such as pyrite and sphalerite were brecciated. Heated solutions then passed through the sulfides enlarging the fractures and converting these to solution channels. A thin film of galena was then deposited on the walls of solution channel and in thin irregular fractures. Larger masses or pods and scattered crystals of galena were deposited in some areas. Presence of tin in the galena depositing solutions indicates that temperatures were elevated and the solutions of magmatic origin.

All pyrite is of the same age. Wall rock pyrite frequently appears in the form of lath-like aggregates. Pyrite in mineralized shoots also frequently appears in the form of laths identical to those in wall rock. Sphalerite formed by replacing dolomite, thereby filling in spaces between pyrite crystal, masses and laths. Sphalerite also replaces pyrite and in process incorporated a considerable amount of iron into the sphalerite lattice. Evidence indicates that at least some chalcopyrite was introduced by hydrothermal solution. This occurred approximately contemporaneous to arsenopyrite mineralization. Galena was introduced somewhat later.

Silver is contained in solid solution with galena, but silver continued to be added as argentite veinlets after galena deposition had ceased. Particles, probably in the near vicinity of galena or contacts between galena and pyrite or galena and sphalerite.

Deep oxidation of rock during a later geologic epoch caused replacement of galena by cerussite and of sphalerite by smithsonite. Zinc liberated from sphalerite was carried into wallrock dolomite where it was deposited as smithsonite in fractures and along dolomite grain boundaries. Mineralized shots of non-sulfide zinc not easily visible to the eye could have been formed in this manner. However, in areas of intense post-minerals leaching, the dolomite was later dissolved out leaving the smithsonite standing as a zinc-carbonate honeycomb. This usually contains much fine, crystalline pyrite inherited from the earlier wallrock. Some of this pyrite is in the form of remnants of laths identical to those in wallrock and mineralized shoots.

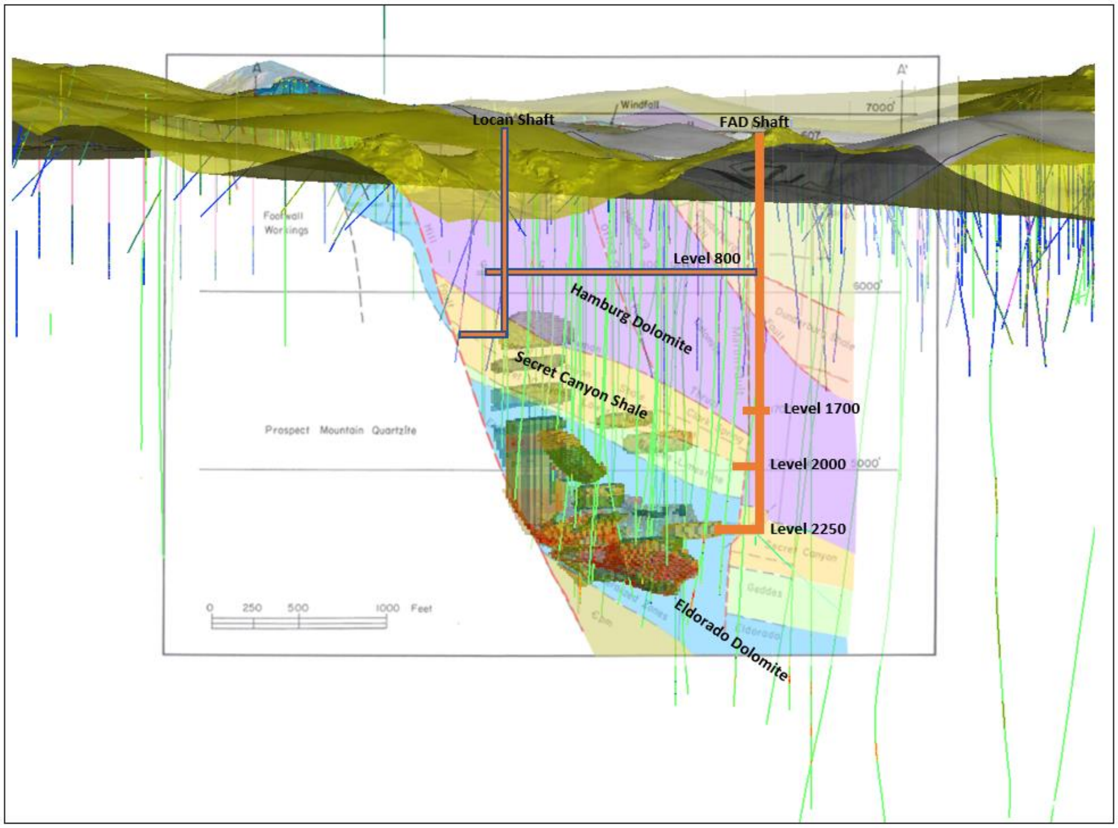
8.0 DEPOSIT TYPES

The authors reviewed the description of deposit types from the Eureka mining district and FAD project and found that the description of Vikre (1998) and Hoge (2015) has an adequate description of the deposit types and has been reproduced for Section 8.0.

All significant carbonate replacement deposits in the Eureka district occur within two Cambrian carbonate rock formations, Eldorado Dolomite and Hamburg Dolomite, and the most important deposits are in Eldorado Dolomite (Figure 8-1). Confinement of carbonate replacement deposits to a small number of stratigraphic units within thick sedimentary rock sections is common in other districts in the North American cordillera, and large volumes of apparently similar carbonate rocks are not mineralized (Megaw and others, 1988; Titley, 1993). A regional control of replacement deposits in Eldorado Dolomite may be the presence of relatively impermeable, overlying Secret Canyon Shale. Secret Canyon Shale may have constituted an aquiclude as evidenced by the water damming ability of the shale encountered in sinking the FAD Shaft (Love, 1966). For reasons that are unclear, most replacement deposits near Ruby Hill are situated in the lower part of the Eldorado Dolomite. Distinctive lithofacies within Eldorado Dolomite that were preferentially replaced by sulfide minerals have not been identified, and any local stratigraphic control of sulfide mineral replacement is extremely subtle. Both dolomites are positioned at the bottom of a thick sequence of lower Paleozoic carbonate rocks and may have been preferential sites for replacement because of their proximity to potential, subjacent source rocks.

Figure 8-1 shows a cross-section through the mineralized deposits. The cross-section location is shown on Figure 7-5 and is a straight line through the Locan and FAD shafts.

Figure 8-1: Block Model of the FAD Mineralization within Eldorado Dolomite A-A' Section



Source: GRE (2021), the block model in this section is taken from SRK studies (2017).

A primary structural control on the distribution of replacement deposits in the Eureka district was thought to be zones of fractures in otherwise massive Eldorado and Hamburg Dolomites (Nolan, 1962), although fractured dolomite extends far beyond clusters of replacement deposits at Ruby Hill and on Prospect Mountain. Replacement sulfide deposits in the down-dropped blocks north of the Ruby Hill fault are usually situated within zones of fractured dolomite, some of which contain disseminated pyrite. Faults cutting or tangential to replacement deposits that could have served as fluid conduits have not been recognized. Permeability for fluid flow was apparently provided by crushed zones and networks of thin fractures that pervade much of the Eldorado Dolomite, and possibly enhanced by high temperatures during mineralization (Maxwell and Verall, 1953; Hanson, 1995).

The following text is taken from Hoge (2015), which summarizes the sequence of geologic events in the FAD project district based on crosscutting relationships, ages of events, and assessment of structural controls for mineralization, which will be a basis for a subsequent structural reconstruction, as well as the evidence that certain faults did or did not serve as conduits for hypogene mineralization in either the mid-Cretaceous or late Eocene(?) events.

The host rocks in the district were deposited in the Cambrian and Ordovician. It is possible that some folds or thrust faults are of mid-Paleozoic age, but the age of contraction and growth of the Eureka culmination was concurrent with deposition of the synorogenic Early Cretaceous Newark Canyon Formation at ~116 Ma (Aptian) (Druschke et al., 2011; Long et al., 2014). The Ruby Hill stock was emplaced, and associated alteration and carbonate-hosted base metal mineralization were formed at ~106 Ma (Mortensen et al., 2000), which is Albian, i.e., late Early Cretaceous, or ~10 m.y. after contractional deformation.

Nolan believes both the thrust faults and normal faults were important in providing channels for mineralization -forming solutions and sites for base and precious metals deposition. Therefore, they are mostly pre-mineral in age. The matter of whether the Ruby Hill fault is largely pre-mineral or post-mineral, however, is inconclusive and may always be so. Nolan cites evidence of sulfide mineralization along the fault zone which indicates a pre-mineral relationship. There is also cited evidence of later movement along the fault, so both pre-mineral and post-mineral relationships may exist. From a practical standpoint, the matter has little bearing or effect on the present objectives of the Ruby Hill project.

Nolan believes the mineralization within the district to be magmatic in origin and that the source was probably a deep intrusive mass. The Hecla Mining Company report called "AN EVALUATION OF THE RUBY HILL PROJECT" dated 1966, mentioned that the mineralogic studies by this company support the magmatic classification of the mineralized deposits. The presence of quartz diorite in drill holes at depths below 2,000 ft and more than one-half mile northeast of the surface exposure south of Ruby Hill indicates an intrusive mass of considerable size in this area. Further, as pointed out by R. N. Hunt (personal communication) the abundance of highly silicated limestone above the intrusive and the persistence of pyrite and pyritic zinc mineralization in the drill holes north of FAD shaft suggest that such an intrusive lying east of Ruby Hill may well have been the source of the mineralization in the Ruby Hill-Adams Hill areas.

Workers in the northern Eureka district have entertained hypotheses that many faults may have been conduits for fluids that produced base-metal mineralization, yet it is now established that many of the faults clearly offset the Ruby Hill stock and base-metal mineralization, as is also supported by data from ground magnetics and drilling (Vikre, 1998). The northwest-striking, down-to-the-northeast Ruby Hill normal fault, along with the Martin and perhaps the Office faults, is one of the earliest normal faults to cut and offset the Ruby Hill stock and mid-Cretaceous carbonate-hosted base metal mineralization. The Jackson branch cuts and offsets the Ruby Hill fault; the Lawton branch cuts marble at Mineral Hill that is related to the intrusion of the Ruby Hill stock. Because the northwest-striking Ruby Hill normal fault cuts and offsets mid-Cretaceous mineralization and is in turn cut and offset by the Jackson branch, the Jackson fault cannot have acted as a conduit for Cretaceous magmatic-hydrothermal fluids within the study area. The west-northwest striking, down-to -the north Blanchard and Molly faults, which control Carlin-type gold mineralization in the Archimedes pit (e.g., Dilles et al., 1996), may be members of the same fault set as the Ruby Hill fault and thus could be the same age. The age of Carlin-type ores in the district may be late Eocene but it remains somewhat uncertain; although good radiometric dates on volcanic rocks exist, their relationship to the age of hypogene gold deposition in some cases requires further investigation (C.D. Henry, written commun., 2014; Barton et al., 2015).

Mapped alteration patterns (jasperoid, marble, bleaching, and sanding of carbonates), which spatial relationships and isotopic studies suggest are related to the Cretaceous magmatic-hydrothermal system, show no relationship to the Jackson fault. This is consistent with the fact that faults of the down-to-the-east Jackson fault system cut and offset the down-to-the-north faults that control Carlin-type gold mineralization. The Jackson fault system is interpreted also as post-mineralization in age relative to Carlin-type gold mineralization because it cuts and offsets the down-to-the-north faults. Structural reconstructions suggest that the east-dipping Jackson normal fault system predates movement on the late Cenozoic, range-bounding, west-dipping Sharp fault, as the Sharp fault cannot predate the Jackson fault because there would be no logical source for the west-dipping, stratigraphically inverted rocks in the hanging wall of the Lawton branch. Thus, the Jackson fault system is probably mid-Cenozoic in age, postdating the Ruby Hill, Blanchard, and Molly faults and predating the late Cenozoic Sharp fault.

Vikre (1988) mentioned that "initial displacement on the Jackson fault apparently occurred after intrusion of the Ruby Hill stock because skarn and replacement deposits are cut off by the fault and no evidence of alteration or mineralization has been found by drilling east of the fault. Gold occurs in a silicified and ferruginous section of north-trending Jackson fault between the Old Jackson Shaft and prospects at the head of Austin Canyon. This gold may be associated with the gold deposits, which are localized by north-south faults at the Windfall and Ratto Canyon Mines 5 and 10 km (3 and 6 miles) south of Ruby Hill, respectively. Altered, north-striking porphyritic dikes that texturally resemble Oligocene eruptive rocks in the district (Blake and others, 1975) occur in the Windfall and Ratto Canyon Mines, and altered, porphyritic dikes were intersected in drill holes in Zulu and Austin Canyons. The dikes in the drill holes have Oligocene radioisotopic ages suggesting a genetic relationship between disseminated gold deposits and certain Oligocene eruptive rocks. The north-south Roberts Tunnel fault, a high-angle fault parallel to the horst-bounding Jackson and Sharp faults, may also have been mineralized with gold in the Oligocene."

Existing data show that the FAD deposit is a mid-Cretaceous disseminated carbonate-hosted base metal type deposit. The Eldorado dolomite (middle Cambrian) is the primary host rock. Ruby Hill stock, which was emplaced in the late Early Cretaceous, was a source of hydrothermal fluids and sulfide deposits. However, none of the faults around the FAD deposit show that they acted as conduits for hydrothermal fluids. In contrast, Eldorado dolomite and the FAD deposit were both cut and offset by surrounding faults.

GRE continues to recommend additional studies to examine the Carlin-type deposit or any overprinting mineralization on FAD property. GRE also recommends fluid inclusions and Isotopic studies for the project. Fluid inclusions are suggested for determining the fluid temperature, salinity, CO_2 bearing, and amount of CH_4 and H_2S, while Isotopic studies are proposed for indication of multiple sources for the mineralization fluids.

9.0 EXPLORATION

Golden Hill has not performed any exploration to date on the Property. Historical exploration completed on the Property is discussed in Section 6.0. The drilling performed by Golden Hill is included in Section 10.0.

10.0 DRILLING

10.1 Overview

By the effective date of this report, Golden Hill Mining completed seven diamond holes for a total of 15,849.5 ft, including 12,481 ft in 2021 and 3,368.5 ft in 2022. As of the effective date of the report, 959 assay samples have been received; the results of the drilling program are discussed in this section. A summary of the historical drilling completed by companies other than Golden Hill is presented in Section 6.

Table 10-1 shows a drill hole summary for the campaigns in 2021 and 2022, and the locations of the holes are shown in Figure 10-1.

Table 10-1: FAD Project, Drill Hole Summary

Campaign Years	Drill Method	Drill Hole ID	Easting	Northing	Elevation (ft)	Depth (ft)	Azimuth	Dip
2021	Core	GH21-01	587,165.00	4,373,090.00	6918	2598	255	-88
		GH21-02	587,172.00	4,373,095.00	6918	2620	100	-88
2021		GH21-03	587,089.76	4,373,069.29	6940.29	2386	305	-78
2021		GH21-04	587,114.07	4,373,182.14	6937.359	2489	235	-85
2021		GH21-05	587113.6821	4373177.087	6937.204	2388	280	-80
2022		PC22-01	587033.2674	4373234.804	6911.329	2422.5	230	-84
2022		PC22-02	586910.2637	4372724.431	7046.363	946	100	-70

Figure 10-1: Golden Hill Mining Drill Hole Locations

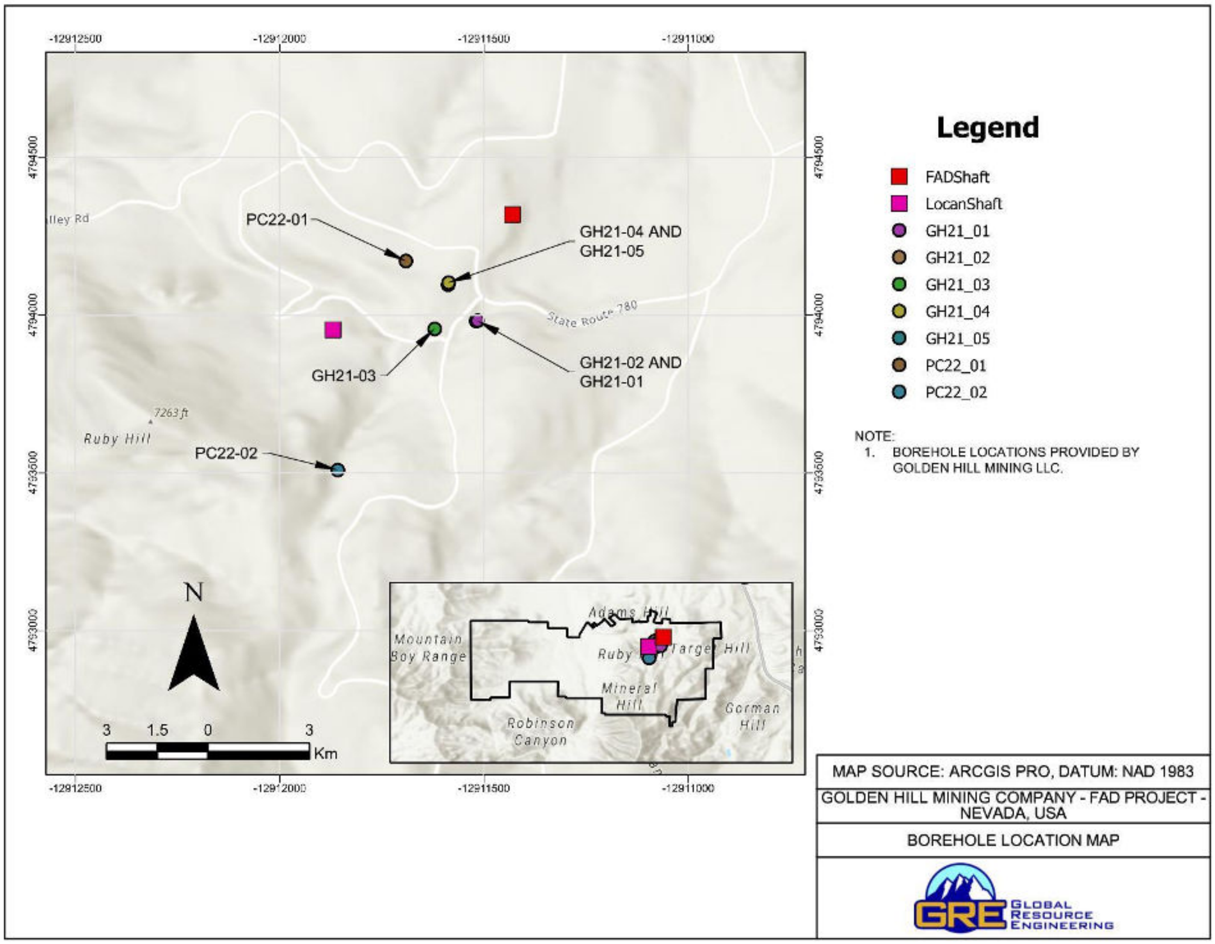


Table 10-2 shows the available assay results as of the effective date of the report.

Table 10-2: Available Assay Results

Drill Hole ID	Interval (in ft)		Number of Available Assay Sample Results	Number of Total Assay Samples Collected	Missing Sample Numbers
	from	to			
GH21-01	0	2598	560	560	
GH21-02	0	2620	321	569	361653, 361654, 361668, 361546.
GH21-03	2172	2386	48	49	1 (sample 361621)
GH21-04	2197	2402	30	30	
GH21-05			No data	In progress	
PC22-01			No data	In progress	
PC22-02			No data	In progress	

The first two borings have complete assays back from the laboratory. These first two borings were logged and sampled at 5 ft. intervals for their entire lengths. Starting with GH21-03, only those intervals with observable mineralization were sampled in 5 ft. intervals. Thus, there are 48 assay results from hole GH21-03 and 30 assay results from hole GH21-04.

10.2 Standard Logging

Golden Hill followed its in-house logging procedure to log the drill holes. The procedure covers most parts of the standard logging procedure, which is sufficient for the project. The following is a summary of the logging protocols in place:

Photo 10-1: Core Shack

- Core logging took place in a well-lit and secure facility (Photo 10-1).
- The drilling contractor provided core recovery, and the company's geologist checked and verified the information. Core photography was completed at this stage.
- A project geologist logged lithology, alteration, mineralogy, structures, and marked the core samples.
- Data from the core logging was added to the drill hole data base (Microsoft Excel).
- The core was stored in secured, well labeled racks.

Drill core logs contained the following information:

- Drilling header information: drill-hole number, collar coordinates and elevation, azimuth, dip, length, geologist, and drilling dates.
- Core recovery

- Sample data: sample number with from-to intervals.

Core recovery has been generally good. For example, the results from hole GH21-01 show recovery of 356 intervals out of 416 intervals, which is more than 90%. Core recovery of 21 intervals measured between 70% to 90%, 19 intervals between 50% to 70%, 12 intervals between 10% to 50%, and seven intervals less than 10%. Reviewing the data shows that alteration, brecciation, and faulting are the main causes reducing core recovery. The results from hole GH21-02 show recovery of 107 intervals out of 110 intervals are 100%. Only three intervals show recovery less than 35%.

Table 10-3 presents an example of the core logging detail, the bore log for GH21-01, which was prepared by Golden Hill field geologist Matthew Rhoades.

Table 10-3: Logging Result of Hole GH21-01

From (ft)	To (ft)	Description
0	61	Unconsolidated colluvium consisting of carbonate clasts in a dense brown clay matrix
61	63	Still unconsolidated colluvium, but the clay matrix has a more pale, cream color.
63	82.5	Colluvium getting coarser with gravel and limestone cobbles in the mix.
82.5	83.5	limestone cobbles
83.5	97.5	Abrupt change to olive green, densely consolidated limestone colluvium with dark grey clay matrix.
97.5	100.5	Densely consolidated, massive, light tan dolomite. End of PQ coring.
100.5	111	Dense colluvial material. Clast-supported in dark grey-green clay matrix.
111	167	Dense cream-colored lithic tuff with very fine mafic phenocrysts. Well-indurated. There is apparent rhythmic bedding as well as high-angle cross-bedding suggesting both lacustrine and eolian reworking.
167	185	Same unit as above but takes on a darker grey coloration. Also has localized brecciation.
185	190	Likely fault zone with mixed lithologies (dolo and tuff) and clay gouge.
190	213	Relatively soft calcareous shale unit that appears olive green near base and becomes grey-blue near the top of this unit. Strong reaction w/HCl on hairline fractures.
213	301	Continued medium to light gray calcareous shale, but now with interbedded darker silty/shaley calcareous shale and nodular limestone from 219.1 to 257.8'. Both relatively decarbonatized, although some light gray intervals of fresh limestone persist.
301	406	Continued light gray calcareous shale with intense fracture network and weak to moderate decarbonatization. Minor interbedded shale and nodular limestone from 304 to 307.5', 340.6 to 342.7, 359.5 to 361.5, and 369.5 to 373.9'. Strong pervasive oxidation staining 383.7 to 396.5' is coincident with fault contact between Dunderberg shale and Hamburg dolomite. Below 396.5', sanded Hamburg dolomite.
406	502.5	Continued sanded Hamburg dolomite. 60 to 70% of interval is completely collapsed/pulverized due to sanding.
502.5	599	Continued sanded Hamburg dolomite. 60% of interval is pulverized/collapsed; The most intact sections occur below ≈551', but still collapses when sprayed with water. Minor fracture-controlled oxidation throughout much of the interval, with moderate oxidation from around 513 to 550'. Small interval of quartz veining from ~542 to 548'. May contain dark gray to black shaley/silty layers locally.

From (ft)	To (ft)	Description
599	698.5	Continued light gray to tan Hamburg Dolomite to 607.3'. 607.3 to 634.8' is largely composed of heterolithic breccia containing medium gray clasts and light gray dolomite clasts. Matrix is likely composed of clay and is moderately to strongly oxidized. 634.8 to 649.2 ' is primarily light gray limestone with local white bleaching. 649.2 to 688' is a heterolithic clast-supported breccia with fragments of primarily limestone and lesser dolomite and clay matrix with minor to moderate oxidation. Interval includes matrix and clast-supported breccias with clasts of light gray limestone. Minor limestone intervals. Matrix is dark clay and contains local oxidation staining and locally strong fracture-controlled oxidation. Below 688.1' is primarily light to medium gray limestone with minor brecciated intervals and white bleaching. Minor calcite veins at 642.9 to 643.3', 657.9 to 658.5', and a small calcite stockwork from 683.4 to 684.
698.5	708	Continued light gray to tan Hamburg Dolomite to 708'. Largely composed of heterolithic breccia containing medium gray clasts and light gray dolomite clasts. Matrix is likely composed of clay and is moderately to strongly oxidized.
708	736	This interval populated with several notable voids. 8' void at 708'. Several smaller voids of 1', .5', and 3' in this interval. Required PQ casing in order to advance the bore beyond this interval. Found competent limestone below. The limestone in this interval is vuggy, pale gray to tan and reacts strongly to HCl.
736	782.5	Alternating light gray to tan limestone. Vigorous reactions to HCl. Rhythmically bedded with alternating pale gray and darker gray beds up to half-inch thick. Some stylolite development with clay infill. More dolomitic in the lower two feet of this interval
782.5	810	Alternating intervals of light gray to tan limestone and dark gray to near-black dolomite. Dominantly competent limestone. Dolomite intervals up to 2' thick and in part disaggregated to dolomitic gravel. One small interval of brown clay gouge at 403.6'-403.8'.
810	818	Light gray to tan Hamburg Dolomite. Very good recovery. Stick drilling. Alternating layers of dolomite and limestone
818	827.5	Alternating gray and tan dolomite. Vuggy with pervasive FeOx staining in a few short intervals small interval of gray potential fault gouge at 826'
827.5	847.5	Interval of competent light gray to tan dolomite. Massive, with excellent recoveries. Potential fault gouge with FeOx staining at 828'. Potential fault gouge at 8946, but absent any FeOx staining.
847.5	857.5	Massive light gray to tan Hamburg Dolomite. Densely fractured at 853-854'. Minor FeOx staining.
857.5	865.5	Light gray to tan Hamburg Dolomite. Fractured at 863-864, but not granulated.
865.5	876	alternating layers of light gray and dark gray dolomite. Massive, competent rock with good recoveries.

From (ft)	To (ft)	Description
876	881	Dark gray dolomitic rock. Exsolution pitting to 1/8" apparent. Small pinpoint black sulfides apparent, possibly manganese and/or biotite. Non-magnetic. Secondary calcite rhomb growths on fracture surfaces. Weak FeOx staining.
881	890	Dense light gray dolomite. Massive; excellent recoveries. Minor pin hole development of mafic minerals - possibly manganese
890	897	Light gray massive dolomite. Red clay fault gouge at the bottom of this interval accompanied by different lithotype below the gouge. Low-angle shear fractures at 895.5
897	899	Dark interval of dolomite with clay gouge at top of interval and densely fractured dark gray dolomite at base. Possible faulted interval.
899	904.5	Light gray massive dolomite. Some light localized FeOx staining in the middle of the interval.
904.5	914	Light gray massive dolomite with minor FeOx staining on fracture surfaces.
914	917	Very dark gray, almost black dolomite with very fine, pervasive calcite veinlets throughout.
917	925.5	Light gray to tan massive dolomite with fine calcite veinlets prevalent.
925.5	936	Light tan to gray dolomite. More than half of this interval is disaggregated into sand and gravel. Possible fault gouge in the 931-936' interval.
936	946	Alternating intervals of light tan and light gray massive dolomite. Very high RQD. Calcite veinlets prevalent throughout this interval.
946	952	Light gray, massive dolomite with calcite veinlets.
952	956.5	Dark gray to near-black dolomite. Disaggregated to sand and gravel. Potential fault zone
956.5	966.5	Dominantly light tan massive dolomite. Short intervals of dark gray massive dolomite. Fine calcite veinlets throughout. D968ark dolomite at the bottom of this interval (966-966.5) is granulated; possible fault zone.
966.5	968	Short interval of very dark dolomite with pale white 'ghost' veinlets throughout. Possible faulted interval above and below due to sharp lithology changes
968	971	Light gray dolomitic breccia with a variegated appearance and pervasive light FeOx staining. Sanded at the bottom six inches of the interval
971	974	Light gray to tan massive dolomite.
974	974	Short interval of dark gray dolomite that is largely sanded. Extensive fine calcite veinlets throughout. Potential fault zone.
974	977	Light tan massive dolomite.

From (ft)	To (ft)	Description
977	987.5	Alternating intervals of mottled light tan and dark gray dolomitic breccia. Two short intervals are sanded; decarbonatized. Light FeOx staining throughout.
987.5	992	Mottled light tan brecciated dolomite with dissolution vugs in lower half of this interval. Pervasive light Fe Ox staining throughout.
992	998	Alternating intervals of dark gray and light tan massive dolomite. Sanded interval of pale tan dolomite at 996-997'. Pervasive FeOx staining throughout.
998	1003	Dark gray dolomite with pervasive calcite veining and brecciation. Completely disaggregated interval from1001-1003' with pervasive FeOx staining
1003	1007	Dark gray dolomitic breccia with large-scale calcite veins (up to 1" thick) throughout this interval.
1007	1010	Gray dolomitic breccia with large-scale calcite veining throughout. Some exsolution/dissolution features apparent on the surface of the core; almost approaching very small-scale boxwork.
1010	1017.5	Light gray dolomite
1017.5	1034	Dark gray dolomite, brecciated in-part.
1034	1059	Dark gray dolomite granulated, in part. Brecciated in several discrete intervals
1059	1068	Massive light gray dolomite with an extensive network of fine calcite veinlets; boxwork.
1068	1075.5	Dark gray dolomite with contrasting white calcite veins; some up to 1" thick.
1075.5	1083	Alternating short intervals of light and dark dolomite. Localized intense FeOx staining at 1077'.
1083	1086	Interval of brecciated dolomite with extensive calcite matrix infill.
1086	1097	Really interesting interval of mottled light and dark dolomite. Mottled is amorphous and contacts are indistinct. Mottling is somewhat bedding parallel. This specific interval of mottling was noted in the Eureka District USGS stratigraphy report.
1097	1106.5	Interval of alternating sequences of light gray and medium gray massive dolomite. Well-developed network of fine calcite veinlets
1106.5	1112	Interval of massive light gray dolomite with network of fine calcite veinlets throughout.
1112	1116	Light gray dolomite with FeOx staining and some clay development.
1116	11130	Light gray dolomite with abundant calcite veinlets and possible relict bedding-parallel algal mats containing clay.
1130	1157.5	Massive light gray dolomite with stylolites and calcite veining. Stylolites are somewhat bedding parallel and calcite veining occurs at high angles to the bedding. Minor FeOx staining.

From (ft)	To (ft)	Description
1157.5	1167.5	Massive light gray dolomite with stylolites and calcite veining. Sytlolites are somewhat bedding parallel and calcite veining occurs at high angles to the bedding. Minor FeOx staining.
1167.6	1178	Massive light gray dolomite with extensive calcite veinlet network and minor FeOx staining.
1178	1188	Massive light gray dolomite with thin, indistinct bedding and large amorphous calcite veins. Brecciated in part with calcite matrix infill.
1188	1203	Massive light gray dolomite with a well-developed network of fine calcite veinlets. Some stylolites with red FeOx infill
1203	1213	Dark gray to black thinly bedded calcareous shale. Extensively fractured with bedding-subparallel hairline fractures at closer than 1" spacing throughout this interval. Likely the Clark Springs Member of the Secret Canyon Formation. Prominent contrasting white calcite veins at high angle to the bedding
1213	1223	Dark gray to black thinly-bedded calcareous shale. Gray dolomitic interval from 1219-1220.
1223	1233	Dark gray to black thinly-bedded calcareous shale. Extensive network of black fractures at low-angles to bedding. Localized breccia and calcite veins oriented parallel to the core axis.
1233	1239	dark gray to black thinly-bedded calcareous shale. Dark gray fractures that sub-parallel bedding. Calcite veins in congugate sets at high angles to bedding
1239	1247	Dark gray to black calcareous shale. Occasional white calcite veins and fracture networks at high-angles or perpendicular to bedding. One 1 1/2" bedding-parallel calcite vein located at 1242.5'.
1247	1257	Dark gray to black calcareous shale. Extensive fractures and brecciation from 1252-1255'.
1257	1267.5	Dark gray to black calcareous shale. Brecciated from 1263.5'- 1267'. Fractured surfaces remain dark compared to core faces. Frequent bedding-parallel calcite veins and stringers.
1267.5	1278	Dark gray to black calcareous shale. Brecciated in a few short intervals. Numerous fine, hairline white calcite veinlets that tend perpendicular to bedding; some as conjugate sets.
1278	1288	Dark gray to black, thinly-bedded calcareous shale. This interval has frequent dark 'bands' consistently oriented at very low angles (10-20 degrees) to bedding. Diagenetic in nature. At 1287-1288' there is a very well-developed fold in the black shale that has been preserved very well.
1288	1298	Interval of dark gray to black calcareous shale intercolated with light gray massive dolomite. Opposing intervals vary from 2-3' thick. Low level alteration throughout both rock types may be incipient skarn development. Extensive network of white calcite veins.

From (ft)	To (ft)	Description
1298	1306	Light gray to tan massive limestone skarn with well-developed network of thick white calcite veins. Bedding is almost completely obscured; appearing as dark shadows. Stylolites present oriented parallel to what would be bedding. 2" thick calcite veins. Abrupt change in lithotypes at sharp contact at 1294. potential rocktype below is skarn.
1306	1316	Dense gray limestone skarn with obscured relict bedding and a well-developed reticulated network of fine white calcite veinlets. Vuggy and brecciated from 1306-1308'. Also brecciated from 1312-1315'. Some minor FeOx staining on fracture surfaces.
1316	1326	Dense gray limestone skarn with obscured bedding. Abundant stylolites and white calcite veins and veinlets.
1326	1336.5	Dense gray limestone skarn with obscured bedding. Abundant stylolites and white calcite veins and veinlets. A few of the stylolites are infilled with a light tan calcareous clay. Prominent interval of tan clay gouge at1334"; probable fault zone.
1336.5	1339	Gray limestone skarn remains uniform in nature; a little darker at the bottom of this interval.
1339	1348	Light and dark gray laminated calcareous shale with thin intervals of brecciation. Bedding appears somewhat wavy and some intervals appear to contain small-scale rip-up clasts. Inclined bedding is 25-35 degrees to horizontal. Noteworthy absence of calcite veins and veinlets.
1348	1358	Very simimilar to the interval logged above. From 1356' to 1357' there is a pronounced fracture (small normal fault) that trends the length of the core; sub-parallel to it.
1358	1369	Alternating light gray and dark gray laminated calcareous shale. Slightly wavy, undulatory bedding 15 degrees from horizontal. Recovery between 1367 and 1369 was six inches. Densely fractured and disaggregated between 1366' and 1369'.
1369	1379	Dark gray, thinly-laminated calcareous shale. Bedding is very linear, not as wavy or undulatory as intervals described above. More uniform dark gray color. Very few calcite veins and veinlets.
1379	1384	Interval with relatively intense, focused folding of a laminated dark gray calcareous shale. Some isolated, prominent calcite veins. Well-defined fold couplet just below a prominent calcite vein at 1380'. Another well-developed and defined 'shoehorn' fold structure at 1382'. A lot of folding and shear in this 5' interval. I made up the term 'shoehorn', but the fold does resemble shoehorn.
1384	1393.5	Medium and dark gray calcareous shale with prominent white calcite veins. Shale is tightly-laminated and locally brecciated.

From (ft)	To (ft)	Description
1393.5	1403.5	Medium to dark gray, calcareous shale with numerous white calcite veinlets. Veinlets are dominantly vertical; perpendicular to bedding. Localized fault zone at 1397'. Six-inch interval of amorphous calcite at 1401.5'. Weak decarbonatization throughout this interval.
1404	1409.5	Medium to dark gray, calcareous shale with strong, localized decarbonatization to 1409.5'. Isolated pinhead pyrite occurrence at 1405'. Minor calcite veinlets present.
1409.5	1413	Medium to dark gray calcareous shale. Large calcite veins (2") present. Weak decarbonatization.
1413	1423	Medium to dark gray calcareous shale. Weak to moderate decarbonatization present. Some minor, small-scale brecciation. Bedding at nearly 42 degrees to horizontal.
1423	1428	Medium to dark gray calcareous shale. Extensive clast-supported brecciation in this interval; possibly attributable to decarbonatization and solution collapse. Calcite veinlets present.
1428	1432.50	Medium to dark gray calcareous shale with moderate decarbonatization and localized, clast-supported brecciation. Bedding at 15 to 30 degrees to horizontal.
1432.5	1438	Medium to dark gray calcareous shale with weak to moderate decarbonatization. Some discrete intervals are brecciated. Breccias are clast-supported with gray calcareous clay matrix.
1438	1447	Medium to dark gray calcareous shale Near-horizontal, finely-laminated bedding. Calcite veinlets largely absent.
1447	1453	Medium to dark gray calcareous shale. Brecciated in a few discrete intervals. Moderately decarbonatized.
1453	1465.5	Medium to dark gray calcareous shale; moderately decarbonatized and locally brecciated.
1465.5	1473.5	Medium to dark gray calcareous shale Largely horizontal, thinly-laminated bedding. Large, Random calcite veins and patches. Locally brecciated.
1473.5	1482	Medium to dark gray calcareous shale with numerous large calcite veins. Localized folding is obvious. Weak to moderate decarbonatization. Large fractures and most likely, large vertical offsets in this interval. Likely fault zones; especially at 1481'.
1482	1487.5	Medium to dark gray calcareous shale moderately to strongly decarbonatized. Isolated pinhead sulfide occurrences.
1487.5	1495	Medium to dark gray calcareous shale, weakly decarbonatized. Thinly-laminated, near-horizontal bedding. Very few calcite veins or veinlets.
1485	1501	Medium to dark gray calcareous shale, weakly decarbonatized. Thinly-laminated, near-horizontal bedding. Very few calcite veins or veinlets. Large low-angle calcite vein at 1499'.
1501	1505	Medium to dark gray calcareous shale. Large, low-angle calcite veins present. Weakly decarbonatized.

From (ft)	To (ft)	Description
1505	1524.5	Medium to dark gray calcareous shale. Weakly decarbonatized. Thinly-laminated, near-horizontal bedding. Some minor brecciation. Possible fault zone at 1522' where bedding becomes abruptly steep after brecciation.
1524.5	1529.5	Medium to dark gray calcareous shale with weak to moderate decarbonatization. Some discrete intervals are brecciated. Breccias are clast-supported with gray calcareous clay matrix.
1529.5	1537.5	Medium to dark gray calcareous shale with weak to moderate decarbonatization. Some bedding at 1530.5' is high angle; 30 degrees from horizontal. Decarbonatization is more developed in the lower portion of this interval; 1534.5' to 1537.5'.
1537.5	1543	Medium to dark gray calcareous shale; moderately decarbonatized and locally brecciated. Isolated pinhead occurrences of sulfides.
1543	1555	Medium to dark gray calcareous shale; moderately decarbonatized and locally brecciated.
1555	1572	Medium to dark gray, laminated calcareous shale. Densely fractured. Horizontal bedding.
1572	1584	Medium to dark gray calcareous shale. Some high-angle bedding. Dense fracturing. Moderate decarbonatization.
1584	1598	Light to medium gray, laminated calcareous shale. Minor calcite veinlets and moderate decarbonatization.
1598	1615	Light to medium gray calcareous shale. High angle bedding relative to horizontal. Moderate decarbonatization and dense fracturing.
1615	1626.5	Light to medium gray calcareous shale. High angle bedding relative to horizontal. Moderate decarbonatization and dense fracturing. Chaotic calcite veins present.
1626.5	1634	Medium gray calcareous shale. Pervasive fine calcite veinlets present in conjugate sets. Fracturing throughout.
1634	1643.5	Medium gray calcareous shale. Pervasive fine calcite veinlets present in conjugate sets. Densely fractured throughout.
1643.5	1650.5	Densely brecciated medium gray calcareous shale. Shale brecciated throughout this interval with a sense of deep penetrative shear. Bedding largely obscured and accompanied by moderate decarbonatization.
1650.5	1672	Densely fractured and moderately decarbonatized gray calcareous shale. Reduced to gray shale gravel.
1672	1688.5	Laminated medium gray calcareous shale. Moderately decarbonatized; sanded in parts. Horizontal bedding in parts' steep bedding in other localized intervals.
1688.5	1695.5	Light to medium gray calcareous shale. Brecciated in the upper half of this interval. Moderately decarbonatized throughout. A few vertical calcite veinlets.

From (ft)	To (ft)	Description
1695.5	1715.5	Medium gray, dense calcareous shale. Weakly decarbonatized. Large calcite veins and blebs. Moderately steep bedding and uniformly fractured along bedding surfaces.
1715.5	1726	Gray calcareous shale that has been moderately decarbonatized and locally sanded. Half of this interval is brecciated. Chaotic calcite veining present.
1726	1740	Medium gray calcareous shale. Weak to moderate decarbonatization.
1740	1756	Dense, medium gray calcareous shale. Moderately decarbonatized in a few discrete intervals. Minor calcite veinlets. Dominated by weak decarbonatization.
1756	1763	Densely fractured medium gray calcareous shale. One anomalous 1" calcite vein at 1760.5'. Moderately decarbonatized throughout.
1763	1778	Moderately well-intact medium-gray calcareous shale some localized brecciation. Decarbonatized throughout.
1778	1788	Medium gray calcareous shale transitioning from flat-bedded intact rock to deeply sheared and brecciated shale. Decarbonatized throughout.
1788	1806	Deeply brecciated and sheared, gray calcareous shale. Decarbonatized throughout.
1806	1816	Deeply brecciated gray calcareous shale. Shear sense is at a high-angle to horizontal (60 degrees).
1816	1826.5	Strongly brecciated medium to dark gray calcareous shale. Waxy sheen on fracture surfaces.
1826.5	1836	Intensely fractured gray calcareous shale. Lower five feet are shale gravel. Partially sanded; decarbonatized throughout.
1836	1845	Deeply fractured light gray calcareous shale. Partially sanded.
1845	1853	Strongly brecciated medium to dark gray calcareous shale. Waxy sheen on fracture surfaces.
1853	1857	Strong oxidizing front changing the rock color to tan, yellow and red. Largest amount of FeOx staining seen thus far in this hole. Deeply brecciated and/or sanded throughout.
1857	1865	Dark gray brecciated dolomite.
1865	1866	Completely sanded interval. Light khaki, tan color.
1866	1878	Pale gray to white, densely brecciated dolomite with large calcite veins. Weakly sanded along fractures and joints. Obvious FeOx staining.
1878	1888	Alternating short intervals of white to light gray dolomite and a distinctly darker, more massive dolomite. Reduced to 1/4-inch gravel in a few short intervals and sanded at 1888.
1888	1903	White to light gray dolomite; brecciated throughout. Lightly sanded throughout. Some calcite veins. Reduced to 1/4-inch gravel in a few short intervals.

From (ft)	To (ft)	Description
1903	1907	Light to medium brown interval of deeply sanded dolomite. Reduced to 1/8-inch gravel and sand
1907	1921	White to light gray dolomite; brecciated throughout. Lightly sanded throughout. Some calcite veins. Reduced to 1/2-inch gravel at 1908'-1913'.
1921	1938.5	White to light gray altered dolomite; densely brecciated throughout. Some calcite veins present. Some short intervals with an alternating darker gray dolomite.
1938.5	1951.5	White to light gray altered dolomite. Densely fractured throughout, but nonetheless cohesive, indurated rock.
1951.5	1958	Medium gray, brecciated and altered dolomite. The darker version of the dolomite dominates in this interval. Densely fractured with light sanding on fracture and joint surfaces. Some exsolution along fracture traces.
1958	1974	Light gray dolomite; densely brecciated throughout with considerable recrystallization on fracture surfaces. Lightly sanded on fracture and joint surfaces. Breccia clasts themselves reduced to 1/2-inch or less. Reduced to 1/2-inch gravel at 1973'.
1974	1981	Light gray dolomite; densely brecciated throughout with considerable recrystallization on fracture surfaces. Lightly sanded on fracture and joint surfaces. Breccia clasts themselves reduced to 1/2-inch or less. Reduced to sand at 1981'. Possible fault zone.
1981	1988	Densely fractured medium to dark gray dolomite. Sharp contacts between the medium and dark variants of the dolomite. Heavily veined and brecciated. Decarbonatized throughout.
1988	2007.5	Light to medium gray dolomite. Massive stick drilling interval; competent rock. Pronounced calcite veining at low angles to the core axis. One small brecciated interval at 1995'. Decarbonatized throughout.
2007.5	2018	Heavily fractured interval of light gray dolomite. Minor FeOx staining on fracture surfaces. Interval reduced to 2" angular fragments.
2018	2036.5	Pale white to tan interval of densely fractured, brecciated and sanded dolomite. Densely fractrued, and/or pea gravel interval is 2021' to 2029'. Sanded interval is 2031' to 2033'. The sanded interval is a pale yellow to cream color. This interval overall is dominantly tan.
2036.5	2041	There is a very sharp color contrast beginning at 2036.5' where the dolomite becomes a darker gray. It is densely fractured and 'gravelled' in this interval as well. Sanded on fracture surfaces.
2041	2052.5	Dense medium-gray dolomite. Densely brecciated throughout. Mostly competent rock. Densely sanded in the lower 1-1/2' of this interval. Some FeOx staining.
2052.5	2061.5	Dense medium gray dolomite. Massive, but densely brecciated. Competent rock. More FeOx staining in the lower one-third of this interval.

From (ft)	To (ft)	Description
2061.5	2069	Dark gray brecciated dolomite. Obvious FeOx staining. Largely indurated, competent rock. Brecciated with alternating black and white dolomite fragments.
2069	2086	Massive medium gray dolomite; densely brecciated and decarbonatized. Dark gray on fracture surfaces. Ubiquitous calcite veining. Very fine-grained recrystallization on fracture surfaces. Massive, competent rock. Barely discernible sulfides on fracture surfaces.
2086	2096	Massive medium gray dolomite; densely brecciated and decarbonatized. Dark gray on fracture surfaces. Ubiquitous calcite veining. Very fine-grained recrystallization on fracture surfaces. Massive, competent rock. No discernible sulfides.
2096	2101	Densely brecciated massive light gray dolomite. Wide range in the size distribution of clasts in the breccia.
2101	2111	Massive medium gray dolomite. Densely brecciated with chaotic calcite veins. In the lower two feet of this interval, the dolomite almost appears to have been altered to marble; but is more of a 'calcite wash'.
2111	2122	Medium gray dolomite that has been heavily fractured (it is already brecciated) to angular, gravel-sized clasts. Barely discernible sulfides in the FeOx staining.
2122	2136	Medium gray massive dolomite that has been subjected to decarbonatization and brecciation. Abundant chaotic calcite veins and veinlets. Minor iron-staining on fracture faces and traces. Barely discernible sulfides associated with the Fe-staining. Light sanding on fracture faces.
2136	2147	Medium gray, brecciated dolomite that has been fractured into gravel-sized clasts in alternating intervals with otherwise massive, medium-gray dolomite. Brecciated throughout and decarbonatized throughout. Minor vugs.
2147	2160	Medium gray, brecciated and decarbonatized dolomite. Alternating 1' to 1-1/2' intervals of densely fractured rock and competent rock. Sulfides discernible with Fe-staining at 2150'.
2160	2173.5	Densely fractured interval of dark gray dolomite. Some smaller intervals are near-sanded. Minor FeOx staining on fracture surfaces. NOTE: change in core diameter at 2161' from PQ to NQ2 further downhole.
2173.5	2175	Interval of white dolomite that appears to have been altered to a coarse-grained white marble
2175	2184	Sanded interval of gray dolomite. Not completely sanded, however; more like pea gravel. Lots of orange FEOx staining on fracture surfaces. Small, disseminated black specks of MnO2, but no dendrites.
2184	2195	Completely sanded interval of disaggregated and gravelled dolomite that now appears yellow to orange to rust-red. Large influx of FeOx into the system at this location. Considerable clay build-up on clast faces. Likely a fault zone.

From (ft)	To (ft)	Description
2195	2212	Gravelled interval of medium gray dolomite with ubiquitous tan sanding on all surfaces. Disaggregated into angular clasts. Moderate Fe Ox staining.
21212	2224.5	Gravelled interval of medium gray dolomite with ubiquitous tan sanding on all surfaces. Disaggregated into angular clasts. Moderate Fe Ox staining.
2224.5	2237	Gravelled interval of medium gray dolomite with ubiquitous tan sanding on all surfaces. Disaggregated into angular clasts. Moderate Fe Ox staining. Some of the clasts are pea gravel.
2237	2242	Gravelled interval of medium gray dolomite, as above.
2242	2248	Massive light gray dolomite with chaotic veining. Brecciated throughout and decarbonatized; imparts a chalky or 'bleached' feel to the rock.
2248	2258	Massive light gray dolomite which is brecciated and decarbonatized throughout. Sanded surfaces common. A few discrete intervals have been 'gravelled'.
2258	2267	Gravelled and sanded interval of medium gray dolomite that is now light tan and sanded on all surfaces. Pinhead occurrences of MnO2 are common.
2267	2273	Abrupt change in dolomite color to dark gray. Gravelled, brecciated and decarbonatized with sanded surfaces and pinhead MnO2.
2273	2278	Alternating light and dark intervals of dolomite. About a third of this interval is gravelled. 2776' to 2778' appears to be competent, indurated rock with considerable chaotic calcite veining.
2778	2284.5	Densely fractured interval of light and medium gray dolomite
2284.5	2298.5	Densely fractured interval of light and dark gray dolomite. Light FeOx staining. Likely garnet skarn development at 2293' in breccia. Also potential sphalerite occurrence.
2298.5	2308.5	Densely fractured light tan dolomite. Some FeOx sanding on fracture surfaces.
2308.5	2318	Interval of massive light gray dolomite which Light FeOx staing has been extensively brecciated and decarbonatized.
2318	2328	Massive light tan dolomite. Locally sanded and graveled. Some FeOx stains on facture surfaces.
2328	2334	Densely fractured interval of light gray dolomite. Dolomite is brecciated and decarbonatized. Sanded surfaces are common.
2334	2347	White to light tan dolomite that has been densely fractured, brecciated and decarbonatized. Within this overall interval, there are smaller alternating intervals of competent rock and rock that has been disaggregated to gavel-sized angular clasts. The white dolomite may, in fact, be 'marbled'. Moderate FeOx staining.

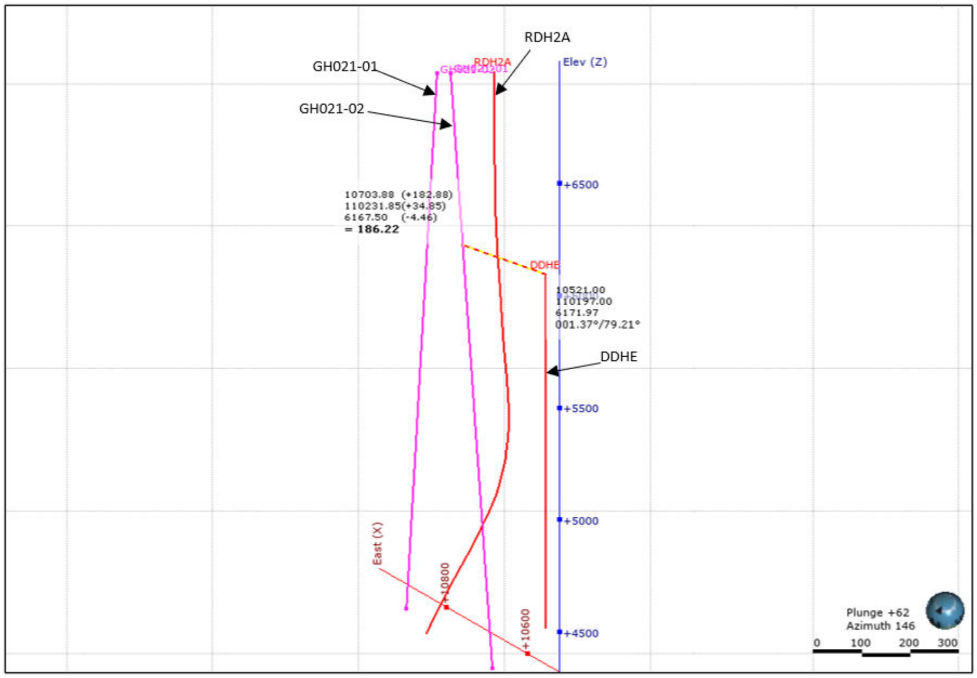
From (ft)	To (ft)	Description
2347	2356	Gray dolomite, decarbonatized and brecciated throughout. Heavy, rust-red FeOx staining on fracture surfaces peppered with MnO2 pinheads.
2356	2378	Medium gray dolomite transected by chaotic calcite veins. Brecciated and decarbonatized throughout. Moderate FeOx staining. Most of this interval has been densely fractured to gravel. There is sa solid stick, however, from 2373' to 2375'.
2378	2391.5	Most of this interval is gray dolomitic gravel. Most surfaces are sanded and the original dolomite was decarbonatized and brecciated throughout. Minor FeOx staining. Probable fault zone
2391.5	2405	Very similar to the interval above, but with modifications. This interval, too, is dolomitic gravel, but the FeOx staining is more pervasive and the MnO2 pinheads have merged into well-developed dendrites. Most surfaces are sanded and this rock has been decarbonatized and brecciated throughout.
2405	2418	Very abrupt change in rock character here. This interval has been finely sanded and is a bright rust-red. Deeply altered through decarbonatization and brecciation. Probable fault zone.
2418	2429.5	Again, an abrupt change in rock character. Proceeding downward in this interval, we descend through a 1' stick of competent dolomite that is heavily FeOx-stained into a soft, rust-red interval (1') and down into a very fine-grained black silt that is loaded with pyrite (including small cubes). this interval is black and holds pinhead sulfide occurrences. It is soft and crumbles easily in the hand. Probable fault zone.
2429.5	2440.5	this is an interval of light gray dolomite with heavy FeOx staining on the fracture surfaces. Fracture surfaces have well-developed MnO2 dendrites. Rock is largely competent and broken into 6" sticks. Nonetheless, it is brecciated and decarbonatized throughout.
2440.5	2458	Relatively uniform interval of competent, light gray dolomite. Common FeOx staining on all fracture surfaces. Interval broken into 1' and 1-1/2' sticks. Brecciated and decarbonatized throughout.
2458	2464	Very similar to the interval above, but with changing character with increased depth. Competent dolomite transitions downward into a fractured dolomite with increased sanding on the fracture surfaces until, at the end of this interval, it transitions into about 1' of completely sanded dolomite. Chaotic veining is discernible. This interval has been decarbonatized and brecciated throughout.
2464	2475.5	Interval of competent light gray dolomite. Mostly 1' sticks. Brecciated and decarbonatized throughout. Dense, chaotic veining apparent, but 'ghosted'. At 2468'-2469', it appears that a short section of the dolomite has been completely replaced by white, coarsely crystalline calcite. FeOx staining is common. Minor vugginess.
2475.5	2482.5	This interval is largely dolomite gravel; heavily FeOx-stained. Dendrites of MnO2 are common.

From (ft)	To (ft)	Description
2482.5	2491	Mixed interval of competent light gray dolomite and dolomite gravel composed of angular clasts. The ratio is about 50/50. Of particular note is at 2485' where an exceptional example of carbonate replacement deposit (CRD) is displayed with massive sulfides juxtaposed against unaltered carbonate material. The competent dolomite is pitted and there is some vugginess. The FeOx staining in this interval is maroon.
2491	2506	This interval consists of alternating 6" sticks of competent light gray dolomite and intervening intervals of dolomite gravel. Abundant orange FeOx staining. The dolomite in this interval has been decarbonatized and brecciated throughout.
2506	2518	This interval consists of disaggregated gray dolomite in the form of sand and gravel. Abundant FeOx staining on fracture surfaces.
2518	2524	A short interval of competent dolomite. Brecciated and decarbonatized throughout. Negligible FeOx staining. Some vugginess.
2524	2534	This interval consists of alternating 6" sticks of competent gray-blue dolomite and intervening intervals fractured, angular dolomite clasts. The dolomite here has a darker blue appearance than the dolomites up-section. It is nonetheless densely brecciated and decarbonatized throughout.
2534	2546.5	This interval presents a steady downward transition of alteration from somewhat competent dolomite to progressively and incrementally more altered rock with depth. There are 'gravelled' intervals and short 'sanded' intervals. With depth, the pitting and vugginess increase on the core faces until they become rounded, sanded, chunks with depth. At the bottom of this interval, the host rock has been completely altered to a sandy/clay mix that crumbles readily in the hand.
2546.5	2598TD	This entire interval is an amorphous mass of deeply altered dark gray dolomite that has been disaggregated into a clay/sand mix. It has been intensely brecciated and deeply decarbonatized. It crumbles readily in the hand. There are a few competent rock chips in this interval, but only a few. Very poor drilling recovery in this interval, was due, in part, to the lack of cohesiveness of this material. Now that it has had time to dry out in the core box, this altered dolomite much more resembles a hardened slurry than its original parent rock. No FeOx staining, no sulfides.

10.3 GH21-01 and GH21-02

The first two holes, GH21-01 and GH21-02, were designed to match historic holes, RDH2A and DDHE (See Figure 10-2). GH21-01 was completed prior to the QP site visit in August 2021, and GH21-02 was in progress during the site visit with 790 ft out of 2,620 ft completed.

Figure 10-2: Section-View Location of Holes GH21-01 and GH21-02 with Historic Holes RDH2A and DDHE



Drilling in hole GH21-01 started with PQ size to the depth of 100 ft, where it was then downsized to HQ size. The hole was drilled by HQ size to the depth of 2,161 ft and then it was downsized to the NQ size until the end of hole. Drilling in hole GH21-02 started with PQ size to the depth of 759.5 ft and then followed by HQ size to the depth of 1,467.5 and then followed by NQ size to the end of the hole. Surface drill hole collar surveys have been compiled using hand-held GPS. The only downhole surveys conducted in both holes have been borehole deviation surveys, which have also been completed.

In order to check for disseminated carbonate replacement mineralization, all dolomitic formations in the borings were targets for drilling and sampling using 5-foot sample intervals. Because recovery in sanded limestone was not always perfect, the recovery in each 5-foot run varied, but having data over the entire hole length will help to get more information about mineralization zones. Therefore, GRE believes that this method is the best way to clarify the mineralization zones for the current exploration phase.

The results of GH21-01 and GH21-02 have confirmed the same subsurface stratigraphy described in historic drilling campaigns (See Section 6.0). The core samples of GH21-01 and GH21-02 showed that the subsurface stratigraphy consists of variably sedimentary deposits and volcano-clastic of tuff, limestone, sanded dolomite, brecciated limestone, and dolomite.

Table 10-4 shows the 14 intervals with more than 0.1 gpt of gold, in descending order, within the Eldorado dolomite, four of which show more than one gpt of gold. No mineralization was seen in the rest of hole GH21-01. Table 10-5 shows in a descending order of gold the existing assay results from hole GH21-02, totaling 46 sample intervals throughout the Eldorado dolomite. Out of 46 samples, 35 intervals show more than 0.1 gpt of gold, 20 of which had more than one gpt of gold.

Figure 10-3 shows the gold distribution throughout the Eldorado dolomite within the two holes, GH21-01 and GH21-02.

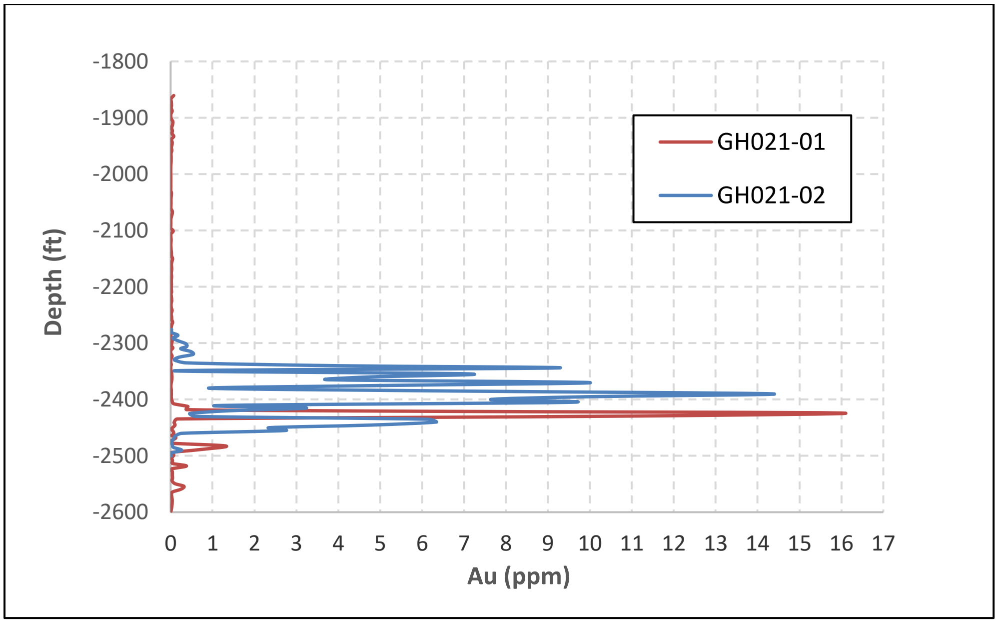
Table 10-4: Intersections with more than 0.1 gpt of Gold within Hole GH21-01

No.	From (ft)	To (ft)	Au (ppm)
1	2421	2424	16
2	2424	2429.5	10.8
3	2418	2421	6.25
4	2477.5	2482.5	1.32
5	2482.5	2489	0.685
6	2407.5	2412.5	0.414
7	2412.5	2418	0.381
8	2513.5	2518	0.378
9	2549.5	2554	0.317
10	2554	2559	0.251
11	2429.5	2434.5	0.161
12	2464	2468	0.125
13	2544.5	2549.5	0.109
14	2440.5	2445.5	0.105

Table 10-5: All Assay Results from Entire Eldorado Dolomite within Hole GH21-02

No	From (ft)	To (ft)	Au (ppm)
1	2385	2390	14.36
2	2365	2370	10
3	2390	2395	10
4	2400	2405	9.53
5	2340	2344	9.24
6	2395	2400	7.63
7	2349	2354.5	7.11
8	2380	2385	6.87
9	2435	2440	6.34
10	2430	2435	6.14
11	2370	2375	5.25
12	2354.5	2360	4.732
13	2440	2445.5	4.728
14	2335	2340	3.963
15	2360	2365	3.788
16	2410.5	2415	3.244
17	2450	2455	2.736
18	2445.5	2450	2.354
19	2415	2420	1.381
20	2405	2410.5	1.234
21	2375	2380	0.919
22	2425	2430	0.599
23	2315	2320	0.533
24	2310	2315	0.486
25	2420	2425	0.453
26	2301	2306	0.384
27	2330	2335	0.381
28	2296	2301	0.363
29	2455	2460	0.268
30	2485	2490	0.262
31	2306	2310	0.242
32	2320	2325	0.195
33	2291	2296	0.185
34	2281	2286	0.174
35	2460	2465	0.108
36	2325	2330	0.092
37	2344	2349	0.092
38	2465	2470	0.071
39	2480	2485	0.068
40	2286	2291	0.055
41	2475	2480	0.04
42	2272	2276	0.024
43	2276	2281	0.02
44	2470	2475	0.019
45	2495	2500	0.017
46	2490	2495	0.015

Figure 10-3: Gold Distribution Throughout Eldorado Dolomite within Holes GH21-01 and GH21-02



The results of GH21-01 and GH21-02 have confirmed that there is a good correlation between these two holes, and that there is significant mineralization within Eldorado dolomite.

10.4 GH21-03 and GH21-04

Similar to GH21-01 and GH21-02, borings GH21-03 and GH21-04 show that mineralization is associated with the Eldorado dolomite. Table 10-6 shows the 17 intervals in hole GH21-03 (in descending order), which contained more than 0.1 gpt of gold; seven samples contained more than one gpt of gold.

Table 10-6: Intersections with more than 0.1 gpt of Gold within Hole GH21-03

No.	From (ft)	To (ft)	Au (ppm)
1	2216	2221	5
2	2211	2216	3.66
3	2231	2237.5	3.327
4	2237.5	2242	3.089
5	2268	2275	2.495
6	2192	2197	1.118
7	2253	2258	1.022
8	2263	2268	0.896
9	2368	2373	0.792
10	2226	2231	0.5
11	2221	2226	0.446
12	2363	2368	0.287
13	2258	2263	0.25
14	2242	2246	0.193
15	2246	2253	0.181
16	2206	2211	0.18
17	2353	2358	0.146

Table 10-7 shows the 11 intervals from hole GH21-04 (in descending order) with more than 0.1 gpt of gold, 10 of which show more than one gpt of gold and, 5 of which show more than two gpt of gold.

Table 10-7: Intersections with more than 0.1 gpt of Gold within Hole GH21-04

No.	From (ft)	To (ft)	Au (ppm)
1	2253	2267	5.27
2	2242.5	2253	2.842
3	2305	2316	2.654
4	2283	2288	2.182
5	2332	2367	2.113
6	2316	2327	2.0
7	2288	2298	1.929
8	2298	2305	1.814
9	2327	2332	1.749

10	2267	2278	1.372
11	2278	2283	0.661

The gold intervals throughout holes GH21-03 and GH21-04 are shown in Figure 10-4.

Figure 10-4: Gold distribution within Holes GH21-03 and GH21-04

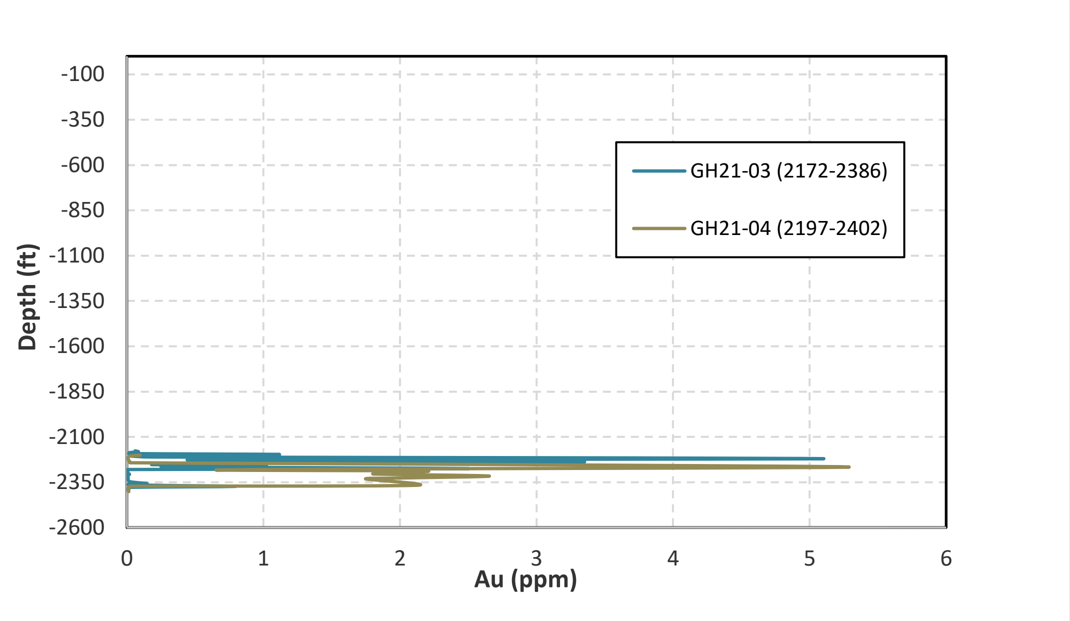


Figure 10-5 shows gold distribution using all the available assay data, and it confirms the existince of gold mineralization in the Eldorado dolomite.

Figure 10-5: Gold distribution Throughout Eldorado Dolomite, Golden Hill Drilling, based on Available Data

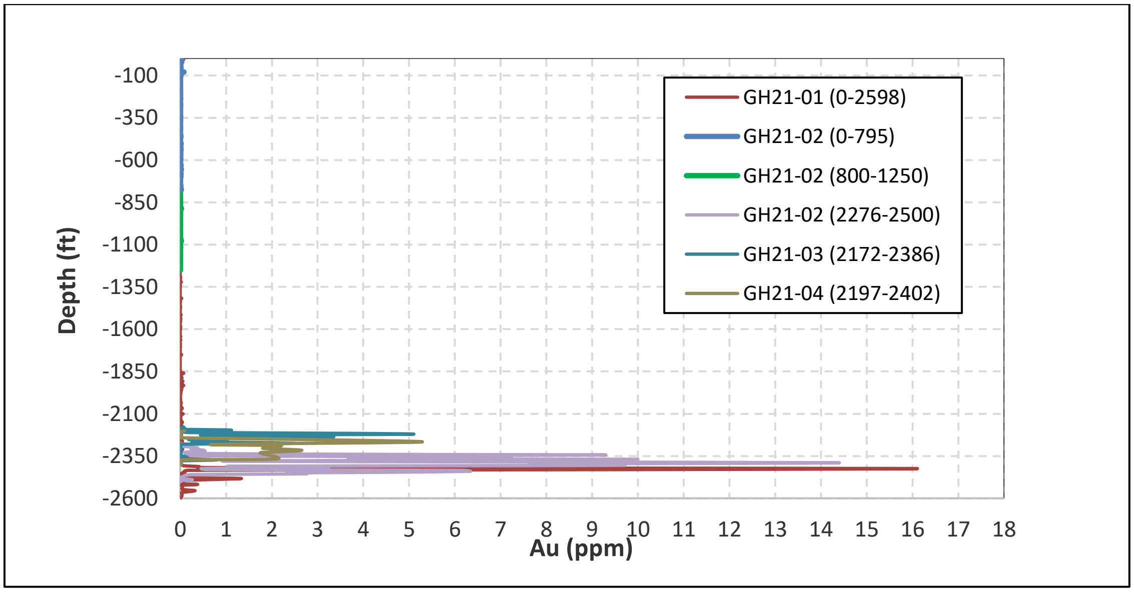
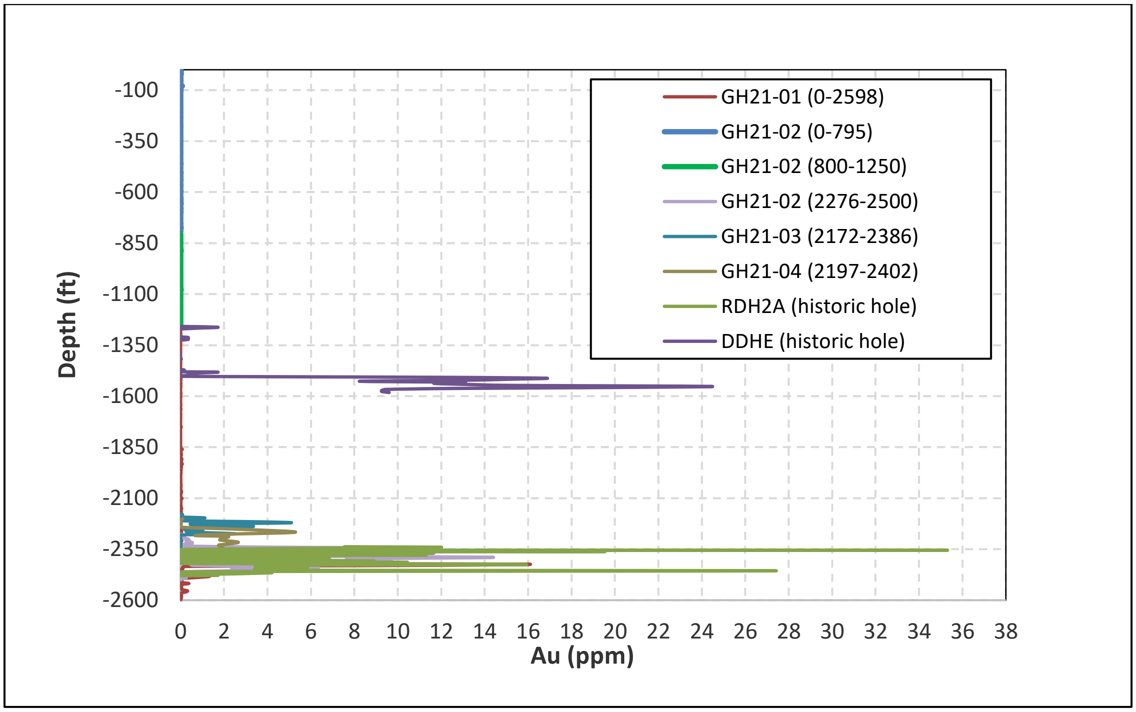


Figure 10-6 shows the Golden Hill gold assay results compared with historic drilling from from RDH2A and DDHE.

Figure 10-6: Gold distribution Throughout Eldorado Dolomite, Golden Hill Drilling Campaigns in 2021 together with Two Historic Holes



One can see that RDH2A correlates well with the historic data, but DDHE does not. Further drilling is required to determine the reason for the discrepancy.

10.5 PC22-01 and PC22-02

In 2022, Golden Hill Mining completed PC22-01 and PC22-02 totaling 3,368.5 ft. No assay results are available for these two holes as of the effective date of this report.

11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

Golden Hill Mining has collected samples from the entire diamond hole drilling interval completed in Phase I. It is noteworthy to mention that sample preparation for all holes was done nearly in the same way with the exception that core samples from holes GH21-01, GH21-02, GH21-03, and GH21-04 were sawed in the Pinson Mine, but holes GH21-05, PC22-01, and PC22-02, were sawed by a Golden Hill Mining technician at the FAD property as in-house sample preparation.

11.1 Diamond Drill Sampling

11.1.1 Sampling of GH21-01, GH 21-02, GH21-03 and GH-21-04

Core sampling for GH21-01 and GH21-02 was observed during the site visit. At first, a wax-impregnated cardboard core box was labeled with hole project name, hole number, and box number. At the end of each 5-foot drill section, core was extracted from the core barrel and placed directly into the sample box. Recovery in sanded limestone was not always perfect, so the amount of footage in a 5-foot run varied. Wooden blocks with footage and recovery markers were inserted in the core box at the end of each run. This aided in footage identification and to mark the start and end of sample lengths. The cores were first logged by field geologist Matthew Rhoades at the FAD property (see Photo 11-1), then transported to the Pinson mine, where a field technician sawed the core into two halves under the direct supervision of Golden Hill senior geologist, Tyler Hill. Half cores were transported to the American Assay Laboratories in Sparks to be assayed, while the remaining half core samples were later transported back to the FAD property for permanent safekeeping. The American Assay Laboratory is entirely independent of Golden Hill, the Parent, and the Issuer. The laboratory is certified by the Nevada Department of Environmental Protection.

Photo 11-1: A Series of Consecutive Core Boxes and Cores at FAD Site

11.1.2 Sampling of GH-21-05, PC22-01, and PC22-02

For these borings, the sampling method was revised.

Core boxes containing core that has already been geologically logged, photo-logged and tagged for 5 ft. sample intervals are brought to Golden Hill's Eureka, Nevada facility for final preparation and shipment. Individual 'sticks' of core four inches and longer are cut lengthwise down the center to facilitate accurate sampling. The saw guide is adjustable for core of varying diameters, including PQ, HQ and NQ2 (Photo 11-2).

Individual samples are placed in a cloth sample bag that is place inside a five-gallon bucket such that it is upright and easy to fill. One-half of the sawn core 'stick' is dropped into a sample bag near the saw, along with the sample tag for that 5 ft. interval. Loose chips, gravel and sand are sampled from the core box 'troughs' using a narrow, hand-held spatula to divide the interval in two and take half. Once the entire 5 ft. interval has been sampled, sample bag is tied-up with a secured double knot and placed in the sample bin for shipment. Duplicates are prepared from the same 5 ft. interval as the investigative sample and are prepared from quarter-sawn core. Where required, blank samples are prepared from marble chips. The blank sample bag is filled with chips so that its weight mimics the size and weight of the other sample bags. Standard QA samples are prepared, unopened in a separate small cloth carrier bag and introduced into the sample stream along with the rest of the samples. The sample bin remains in the building until it is ready for pick-up or delivery. In no instance are samples allowed to remain anywhere outside in the elements un-attended.

Photo 11-2: In-House Sample Preparation at FAD Site

11.2 Analytical Procedure

Next, the samples to be analyzed were transported by the site geologist or geologic technician from the Pinson Mine (now known as the Granite Creek Mine) to the Paragon Laboratories in Sparks, Nevada. The samples were dried, crushed, then had 250-gram splits pulverized to 85% less than 75 microns at the lab. The samples were then subjected to 48-element, 4-acid ICP-AES multi-element analysis. The samples f were treated with the same preparation at the lab, and then subjected to 4-acid digestion followed by inductively coupled plasma mass spectrometry and ICP-AES multi-element analysis.

Going forward (for the remaining samples to be analyzed), core samples will be cut at the company's own secured facility in Eureka, Nevada. Bagged samples will then be delivered by the site geologist or geologic technician under chain-of-custody to the ALS Chemex preparation laboratory located on Water St. in Elko, Nevada. Future assay analyses will be identical to those previously conducted at American Assay Labs (AAL) and at Paragon Labs in Sparks, Nevada.

11.3 Sample Security GH21-01, GH 21-02, GH21-03, and GH-21-04

Golden Hill maintains the chain-of-custody procedure discussed briefly here. In this program, the DH samples never left the custody of the field geologist who logged said samples. Prior to shipping offsite, the core boxes are palletized and stored in a locked facility. After logging, the core samples were transported under chain-of-custody to the Pinson Mine (Golconda, Nevada) for cutting. There, duplicates were made of a sample from each hole and were added to the run before submittal to the American Assay

Laboratories in Sparks for assay. The creation of duplicates was done under supervision of the site geologist, and no bags other than those used to create duplicates were opened. In the 2021 campaign, blanks and standards were inserted into the sample stream. The reject samples remained in storage in Sparks, Nevada. In diamond drilling, core samples were placed directly into the cardboard core boxes. Upon completion of the drill program, the core was first transported to the Pinson mine, where the field technician sawed the core into two halves. One of the half core lengths was then divided up and placed into cloth bags to create 5-foot samples for assay. For duplicate samples, technician sawed the core into one half and two quarters. One of the quarter core lengths was then divided up and placed into cloth bags to create 5-foot samples for assay. These bags were externally labeled with hole number and footage information. The cloth bagged samples were immediately submitted to the American Assay Laboratories in Sparks for assay, while the remainder of the half core was placed in the FAD property (Eureka, Nevada) for permanent safekeeping. Chain of custody was documented throughout the entire transportation process.

For pending analysis, samples will no longer be transported to the Granite Creek Mine for cutting or other preparatory work. Instead, Golden Hill Mining will bring all of those activities in-house prior to delivery to the assay laboratory. Core lengths are divided into 5-foot sample intervals and sawn in half, lengthwise. Duplicate core samples will be taken from quarter-sawn samples prepared at Golden Hill's facility in Eureka. The remainder portion of the core not submitted for analysis will be retained and placed in secured storage areas in the FAD Shaft complex for permanent safekeeping. Complete chains-of-custody have been documented throughout the entire sample handling process and will continue to be closely documented going forward.

11.4 Quality Assurance and Quality Control

At the time of this report preparation, Golden Hill's in-house Quality Assurance and Quality Control (QA/QC) procedures are limited to insertion of 25 field duplicate samples (quarter core) to the laboratory as check samples, 49 blank, and 25 standard samples for all 864 core samples of hole GH21-01 and some parts of holes GH21-02, GH21-03, and GH21-04. At the time of writing the report, 959 assay results (including core sample intervals, blank, duplicate, and standard samples) were added to the database.

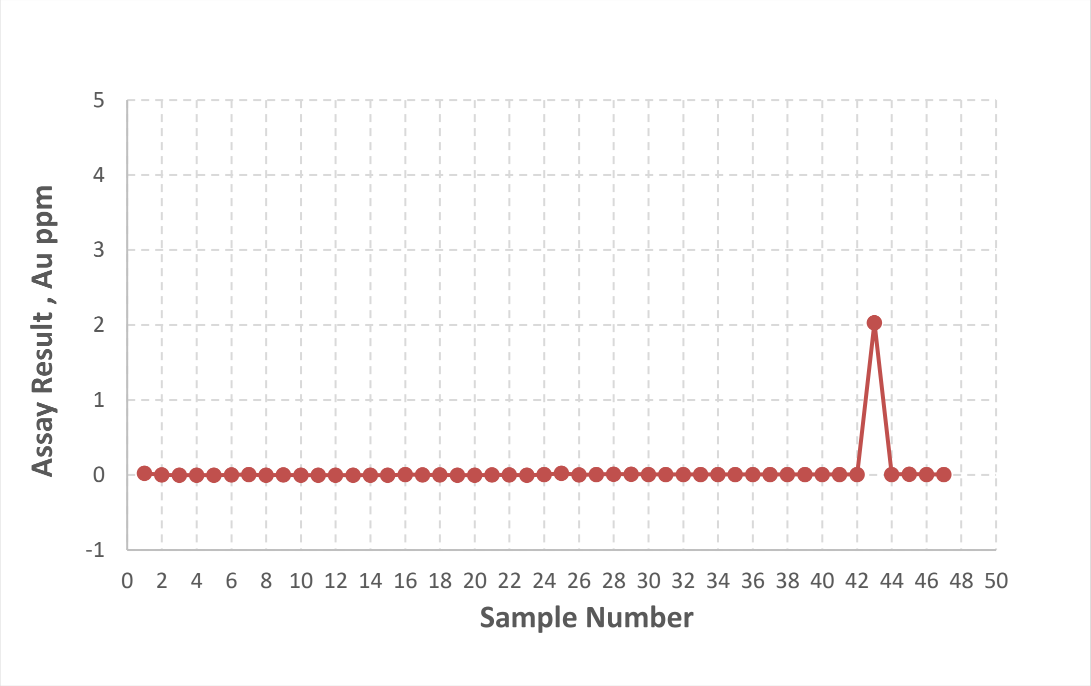
Presented below, all 99 available QA/QC assay results, including blank, standard, and duplicate samples are evaluated.

Golden Hill's in-house Quality Assurance and Quality Control (QA/QC) procedures are limited to insertion of a certified standard reference samples, which are purchased in durable, pre-sealed aluminum packets. The standard sample assay results are routinely reviewed by Golden Hill geologists. To date, these results fall within the anticipated range of variability as described by the manufacturer of the standards. As a result, the assay results have no indication of systematic errors that might be due to sample collection or assay procedures.

11.4.1.1 Blanks Analysis

Blank samples were inserted into the sample stream at a rate of one blank sample per 17 core samples for hole GH21-01 and some parts of holes GH21-02, GH21-03, and GH21-04. The blank sample material used was marble chips. Figure 11-1 shows the assay results of the blanks by the American Assay Laboratories for hole GH21-01 and by Paragon Geochemical for hole GH21-02, GH21-03, GH21-04 used in the QA/QC program. The results of the blank sample evaluation indicate that only one blank sample (sample #361583) with assay result of 2.031 ppm(from hole GH21-03) is out of range. The rest of the blank samples show no contamination during the lab analysis. QP recommends re-assaying this specific sample to ensure that no contamination happened in the laboratory.

Figure 11-1: Assay Results, Blank Samples, Phase I Assay to Date



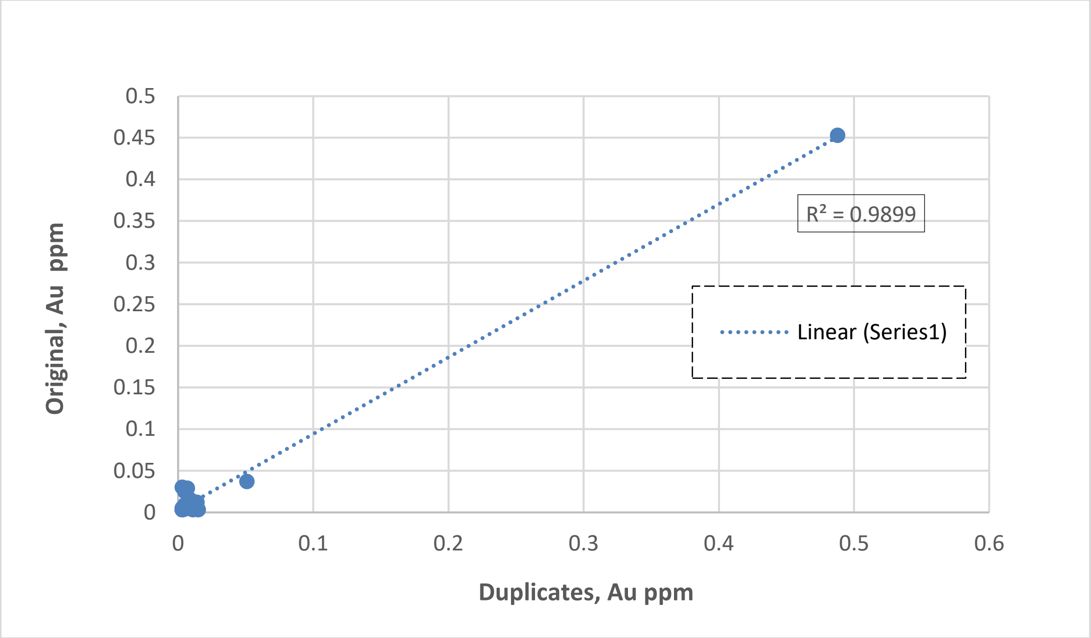
11.4.1.2 Duplicate Analysis

Based on Golden Hill's in-house QA/QC procedure, duplicate samples were inserted into the sample stream at a rate of one duplicate sample per every 34 core samples for hole GH21-01 and with a lower frequency for holes GH21-02, GH21-03, and GH21-04. Duplicate samples were prepared in the same manner as all normal samples, with the duplicate produced from the quarter-sawn core samples.

At the time of report writing, GRE had received 25 assay results on duplicate samples; 23 results out of the 25 have assay results at or below 0.03 ppm for the original assay and 0.015 ppm for duplicates. (Please note that drilling has been ongoing past the date of this report's issue and additional data will be included in a subsequent technical report). The two duplicates from hole GH21-02 have original assays of 0.453 and 0.037 ppm and duplicates of 0.488 ppm and 0.051 ppm, respectively.

Figure 11-2 shows a comparison graph of the American Assay laboratory and Paragon Geochemical duplicates. As seen, all assay results from the first 18 duplicate assays are near zero, and for five duplicate assays are zero, with only the drill hole GH21-02 intervals providing meaningful results. Upon receipt of new data, this graph will be updated in a subsequent technical report, especially from the intervals with higher grades.

Figure 11-2: Duplicate Comparison (2021)



Although all original and duplicate assay results from 23 of the samples are very small numbers and far from the Au grade considered in the historical resource estimate (2.77 g/t for domain 1, 1.077 g/t for domain 2, and 2.77 g/t for domain 3), the results and their distribution are acceptable because they are near the minimum range of assay detection in the lab.

As seen in figure 11-2, the trendline fits well with the two GH21-02 results (0.453 & 0.488; 0.037 & 0.051) and the rest of the data.

For the available data, the Q-Q plot shows that the duplicates are within acceptable ranges, with R^2 values of 0.99 for the diamond drilling program to date. More scatter occurs at the very lower-grade values but is still within acceptable ranges in the opinion of the QP.

However, the QP recommends that for the remaining holes in the Phase I drilling campaign, in order to better check the accuracy of the sample preparation and lab analysis, duplicate samples with a higher amount of gold should be added to the program.

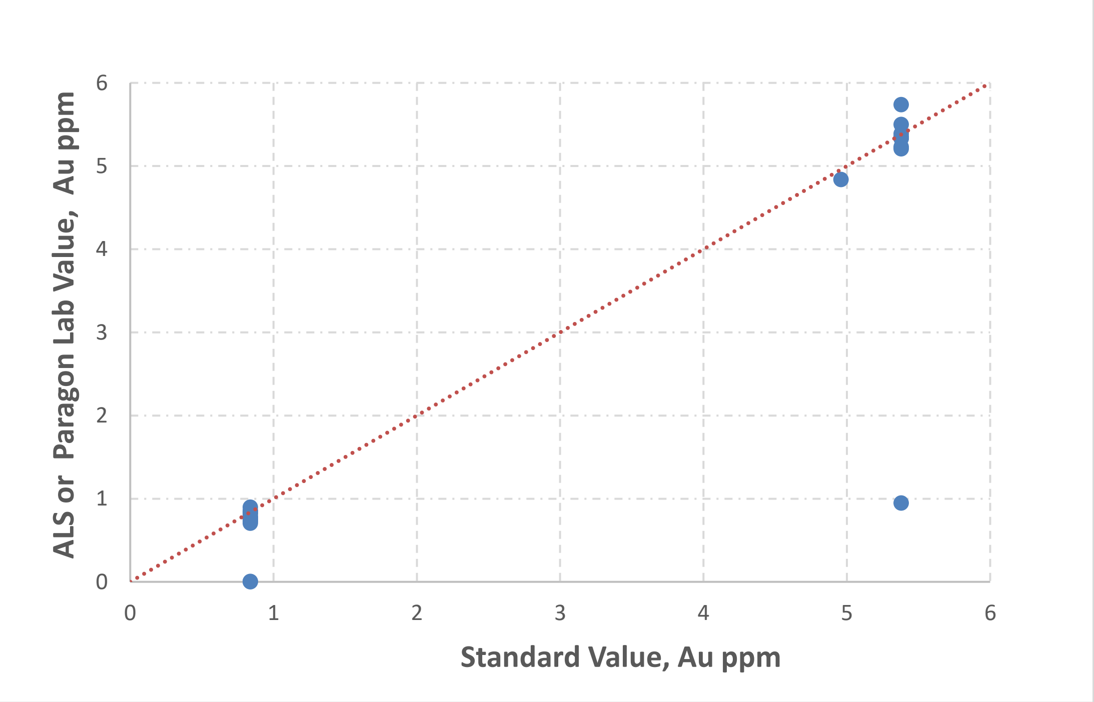
11.4.1.3 Standards Analysis

Commercially-prepared standard samples were inserted into the sample stream at a rate of one standard per 34 samples for all 864 core samples for hole GH21-01 and some parts of holes GH21-02, GH21-03, and GH21-04. Two standards from CDN Resource Labs were utilized: a low-level -- ME-1311 (0.839 ppm ± 0.066), and a high-level -- ME-1902 (5.38 ppm ± 0.42). Each of these standards has a unique and specific certified assay value. The standards are in pulp form, each contained within small individual sample bags. These bags were placed within the Golden Hill sample bags with company tags inserted along with the standard. Although sample standards are readily identifiable as standards, the assay values are unknown to the analyzing laboratory.

Figure 11-3 shows a scatter plot of the certified value for each assay standard compared to the value obtained by American Assay Laboratories for hole GH21-01 and by Paragon Geochemical for holes GH21-02, GH21-03, and GH21-04. Because there is no specific and visible mineralization for all 328 samples of hole GH21-01, from surface to the depth of 1,695.5 ft, only the standard sample ME-1311 was inserted in the sample stream. For the deeper portions of the hole, because of evident mineralization, the standard sample ME-1902 was inserted. The laboratory's analytical results generally correlate well with the standard values, with no outliers. A 45-degree line represents an excellent correlation between the standard assay certified value and actual assay results. This line passes through almost all of the sample sets, with the majority of the points directly adjacent to the line, indicating acceptable accuracy performance for the standards.

Scatter is seen only for the standard sample 361600 with the Lab assay of 0.95 ppm, with a maximum 4.43 ppm difference between standard values and Paragon Laboratories. Because of the very low sample weights, the QP assumes that the low-level ME-1311 standard was inserted instead of the more appropriate, higher-level ME-1902. The confused results are not acceptable. As a result, the samples associated with that standard, sample 361600, will be re-run with the correct ME-1902 standard. This will include samples 633900 and 634090. .

Figure 11-3: Assay Standard Results DH Program (2021)



11.5 QA/QC QP Opinion on Adequacy

The QP finds the sample preparation, analytical procedures, and security measures employed by Golden Hill to be reasonable and adequate to ensure the validity and integrity of the data derived from Golden Hill's sampling programs to date. However, the QP recommends re-checks on assay standard samples, and the next stage of work should include a larger percentage of duplicates and a little more for blanks and standards.

Based on observations and conversation with the Golden Hill field geologist during the QP site visit (2021), in conjunction with the results of GRE's review and evaluation of Golden Hill's QA/QC program, the QP makes the following recommendations:

- Formal, written procedures for data collection and handling should be developed and made available to Golden Hill field personnel. These should include procedures and protocols for fieldwork, logging, database construction, sample chain of custody, and documentation trail. These procedures should also include detailed and specific QA/QC procedures for analytical work, including acceptance/rejection criteria for batches of samples;
- A detailed review of field practices and sample collection procedures should be performed on a regular basis to ensure that the correct procedures and protocols are being followed;
- Review and evaluation of laboratory work should be an ongoing process, including occasional visits to the laboratories involved; and
- Standards, blanks, and duplicates including one standard, one duplicate, and one blank sample should be inserted every 20 interval samples, as is common within industry standards.

In the first stage of campaign 2021 GRE recommended, "although Golden Hill maintains the chain-of-custody procedure, the physical behavior of samples, which are partially crushed and powdered, and long-distance transportation of the core samples within card boxes from the FAD to the Pinson Mine for cutting and then to the American Assay Laboratories in Sparks, Nevada for assaying, led to having various result of assays not only on duplicate samples, but also on the core sample intervals. To reduce and terminate any contamination on future assays results where there are higher grade intervals, GRE recommends for an in-house sample preparation at the FAD property." Fortunately, for the rest of 2021 campaign Golden Hill Mining set up an in-house sample preparation at the FAD property to reduce all contamination, which might be happened during sample transportation to a third party, which was Pinson Mine, for only cutting the cores.

12.0 DATA VERIFICATION

Data verification efforts occurred in two stages: the first stage was associated with the site visit, and the second stage included a database audit in March 2022 using the full available dataset (see Table 10-2).

12.1 Site Inspection, Campaign 2021 (the first stage data verification)

GRE's QP Dr. H. Samari conducted an onsite inspection of the project from the 16 to 17 August 2021, accompanied by Golden Hill field geologist Matthew Rhoades.

Good site access and rapid transport, just an eight-minute drive along a 2.4-mile asphalt road from Eureka to the FAD site, made it possible to complete the site inspection and entire core boxes review in two days (See Photo 12-1).

Photo 12-1: Asphalt Access Road from Eureka to the FAD Property

While on site, Dr. Samari conducted general geologic field reconnaissance, including the inspection of surficial geologic features, ground-truthing of reported drill collar, checking the diamond drill rig, checking core samples of the hole of GH21-01 (the most recently completed drill hole), and core samples of GH21-02, which was being drilled at the time of the field visit by DrillRite LLC (Photo 12-2).

Photo 12-2: DrillRite DH Rig, Hole GH21-02

Field observations confirmed that the geological mapping and interpretation of the project area was accurate. The site lithology and structural understanding were all consistent with descriptions provided in existing project reports (as described in Section 7.0 of this report).

Geographic coordinates for two existing drill hole collar locations were recorded in the field using a hand-held GPS unit. The average variance between field collar coordinates of GH21-01 and collar coordinates contained in the project database was roughly less than one meter, which is well inside the expected margin of error. The drill hole collar GH21-021 is not well-marked in the field and has no marker at all. The QP recommends that Golden Hill clearly identify the existing drill hole in the field by installing semi-permanent markers, such as a labeled and grouted-in lathe, and for each future collar location. The existing drill collars should then be professionally surveyed and tied into the digital topographic surface used for geologic and resource modeling. Future drill holes can be located using survey-grade GPS instrumentation, provided that the GPS coordinates are reasonably similar to those reported for the same locations within the digital topographic surface.

Core samples are stored at the FAD site in the open space with thick water-resistant covers (see Photo 12-3).

Photo 12-3: Core Boxes are Stored at the FAD Site

At the time of site visit, Drillrite technicians regularly placed core boxes of the two holes, GH21-01 and GH21-02, on the table and on the ground to be inspected by QP (See Photo 12-4).

Photo 12-4: Sorted Core Boxes for Inspection at the FAD' Site

12.2 Visual Sample Inspection and Check Sampling, Campaign 2021(GH21-01)

In 2021, Golden Hill designed eight holes to confirm the accuracy of the previous drilling campaigns. During the site visit from the 16 to 17 August 2021, the first hole GH21-01 had been drilled and drilling of the second hole of the GH21-02 was ongoing. During the site visit, about 536 core sample intervals from hole GH21-01 and about 150 core sample intervals from hole GH21-02 were inspected visually by the QP. The samples inspected from hole GH21-01 accurately reflect the lithologies and sample descriptions recorded on the associated drill hole logs and within the project database. At the time of the site visit, because drilling in the hole GH21-02 was ongoing, no drill hole logs from that drill hole were reviewed.

A summarized logging by the QP from hole GH21-01 is given below from surface to the depth (See Photo 12-5, Photo 12-6, and Photo 12-7):

- ✓ Alluvium from 0 to 112.3 ft,
- ✓ The white lithic tuff from 112.3ft to 187.5 ft,
- ✓ A shale unit with Interbedded nodular limestone from 187.5 ft to 384 ft (Dunderburg Shale),
- ✓ A sanded dolomite formation from 384 ft to 626.5 ft and then an intact dolomite unit with partially sanding alteration to the depth of 1,203 ft (Hamburg Dolomite),
- ✓ A shale unit from 1,203 ft to 1,854.5 ft (Secret Canyon Shale),
- ✓ Brecciated limestone from 1,854.5 ft to 2,020 ft (Geddes Limestone),
- ✓ Altered and brecciated dolomite formation from 2,020 ft to the end of the hole, which is 2,598 ft, (Eldorado Dolomite), which shows random sanding alteration, brecciated, decarbonization, partially leaching, recrystallization, and oxidation.

Photo 12-5: Views from Alluvium, Lithic Tuff, Dunderburg Shale, Hamburg Dolomite, and Secret Canyon Shale in Hole GH21-01

Alluvium

Lithic tuff

Dunderburg Shale

Sanded Hamburg Dolomite

Secret Canyon Shale

Photo 12-6: Views from Secret Canyon Shale, Geddes Limestone, and Altered Oxide Zone between them in Hole GH21-01

Photo 12-7: A View from Eldorado Dolomite in Hole GH21-01

During the site visit and while preparing the report, all assay results for hole GH21-01 (from the surface to the depth of 2,598 ft) totaling 560 samples (including core samples intervals, blank, duplicate, and standard samples) were available in the database and only 51 assay results existed for hole GH21-02, which are totally related to the Eldorado dolomite. From the first 401 assay results of hole GH21-01 (from surface to a depth of 1,855 ft), the maximum recorded assay is from sample 633805, which was taken from the 0-5 ft interval, with the amount of 0.074 ppm. This amount of gold could show alluvium contamination due to previous exploration and/or extraction campaigns, thus, there is no specific mineralization to the depth of 1,855 ft, where Eldorado dolomite starts. Visual inspection showed a few deeper intervals with random oxidation (fault zone), sanding, and decarbonization in hole GH21-01. Four intervals from 2,407.5 ft to 2,412.5 ft, from 2,412.5 ft to 2,418 ft, from 2,418 ft to 2,421 ft, and from 2,421 ft to 2,424 ft showed oxide mineralization zones containing gold (see Photo 12-8 and Table 12-1). As explained in Table 10-3, a very abrupt change in rock character is seen here. This interval has been finely sanded and is a bright rust-red. Deeply altered through decarbonatization and brecciation (probable fault zone). Only one interval, from 2,424 ft to 2,429.5 ft (see Photo 12-8, Table 10-3, and Table 12-1)), showed 5.5 ft sulfide mineralization, with the amount of 10.8 ppm gold. Again, an abrupt change in rock character is seen here, a very fine-grained black silt that is loaded with pyrite (including small cubes). This interval is black and holds pinhead sulfide occurrences. It is soft and crumbles easily in the hand (probable fault zone).

Because hole GH21-01 did not have any mineralization intercepts from the surface to the depth of 1,288 ft and there was no assay data after this depth at the time of GRE's QP field visit, the QP decided to not take any check samples. After drilling, when the core logging is done and assay results are available for all eight holes, taking check samples is highly recommended.

Photo 12-8: Sulfide Mineralization within Eldorado Dolomite in Hole GH21-01

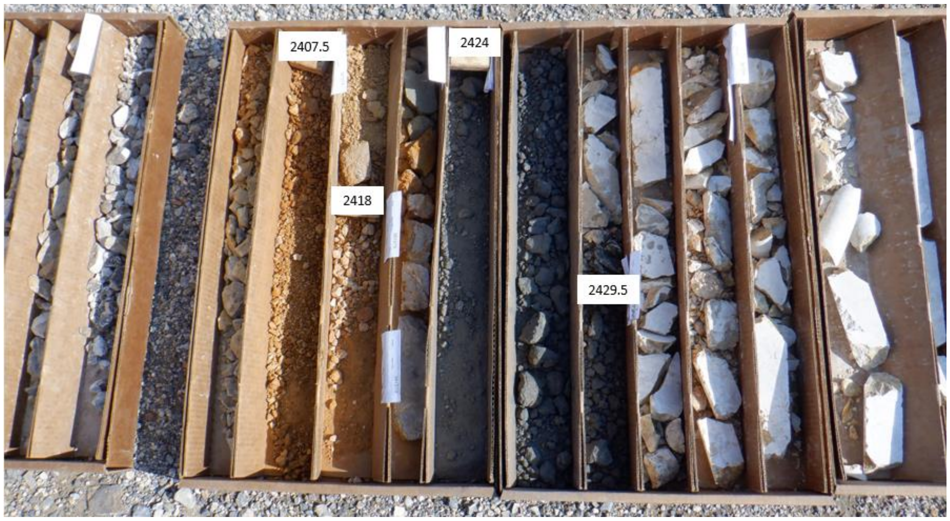


Table 12-1: High-Grade Gold interval Within Eldorado Dolomite, Hole GH21-01

No	Mineralization	From (ft)	To (ft)	Length (ft)	Au (ppm)
1	Oxide mineralization	2,407.5	2,412.5	5	0.414
2	Oxide mineralization	2,412.5	2,418	5.5	0.381
3	Oxide mineralization	2,418	2,421	3	6.25
4	Oxide mineralization	2,421	2,424	3	16
5	Sulfide mineralization	2,424	2,429.5	5.5	10.8
6	Oxide mineralization	2,477.5	2,482.5	5	1.32

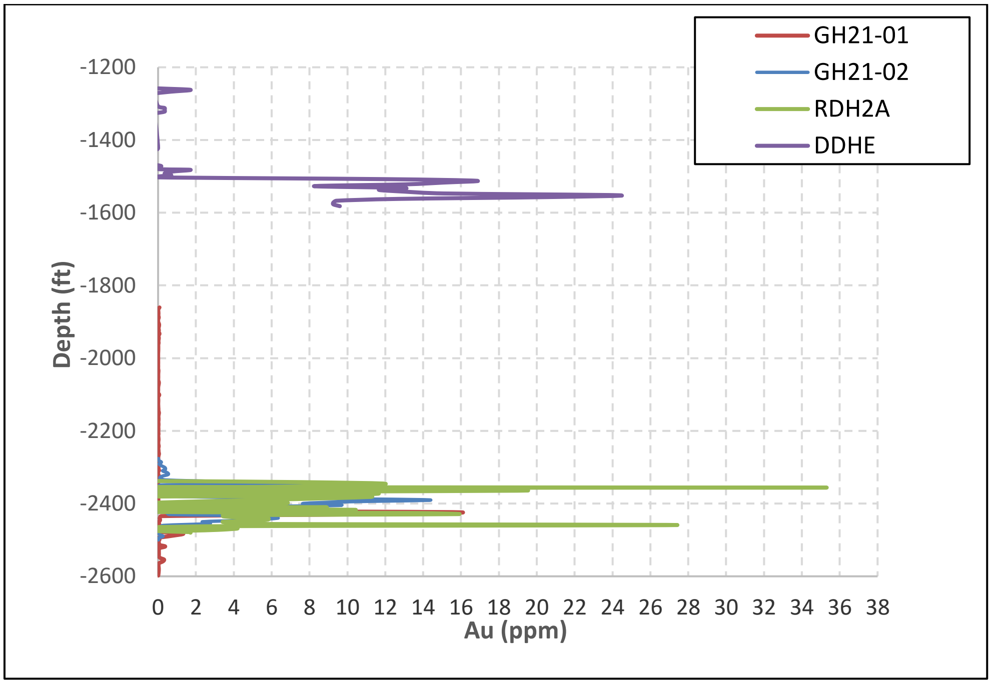
To have sufficient data and a logical comparison between mineralization intervals of the two holes GH21-01 and GH21-02, Golden Hill asked Paragon Geochemical Lab to start assay analysis from a depth of 2,272 ft to 2,500 ft of hole GH21-02, which was logged by the field geologist as Eldorado Dolomite formation. Existing assay data from this interval, containing 46 core samples, showed interesting results. Out of 46 core sample intervals from this hole, 20 samples show more than 1 ppm of gold, 15 sample less than 1 ppm and larger 0.1 ppm, and 11 samples had less than 0.1 ppm (see Table 12-2 and Table 10-5). The maximum amount of gold in this formation is related to a 5-ft interval from a depth of 2,385 ft to 2,390, which is 14.36 ppm of gold. Although the existing data from this hole suggests that the Eldorado Dolomite is one of the main mineralization targets within the FAD area so far, because there is currently no detailed log information and the QP did not check any core boxes of this high-grade interval at the time of this report, any comment and conclusion about the type of mineralization within hole GH21-02 is subject to further information and consideration.

Table 12-2: High-Grade Gold interval Within Eldorado Dolomite, Hole GH21-02

No	From (ft)	To (ft)	Au (ppm)
1	2385	2390	14.36
2	2365	2370	10
3	2390	2395	10
4	2400	2405	9.53
5	2340	2344	9.24
6	2395	2400	7.63
7	2349	2354.5	7.11
8	2380	2385	6.87
9	2435	2440	6.34
10	2430	2435	6.14
11	2370	2375	5.25
12	2354.5	2360	4.732
13	2440	2445.5	4.728
14	2335	2340	3.963
15	2360	2365	3.788
16	2410.5	2415	3.244
17	2450	2455	2.736
18	2445.5	2450	2.354
19	2415	2420	1.381
20	2405	2410.5	1.234

Correlation between holes GH21-01 and GH21-02 and historic holes RDH2A and DDHE shows that holes GH21-01 and GH21-02 have a good correlation with hole RDH2A and no correlation with hole DDHE. It seems historic hole DDHE is not a good choice considering as a twin for the recent holes (see Figure 12-1).

Figure 12-1: Gold Distribution Throughout within Holes GH21-01, GH21-02, RDH2A, and DDHE



Lithology inspection of core samples from hole GH21-02 from surface to the depth of 790 ft, which was available by the time of GRE's QP site visit, showed the same result, taken from logging the hole GH21-01 because these holes are located near each other with about eight meters distance.

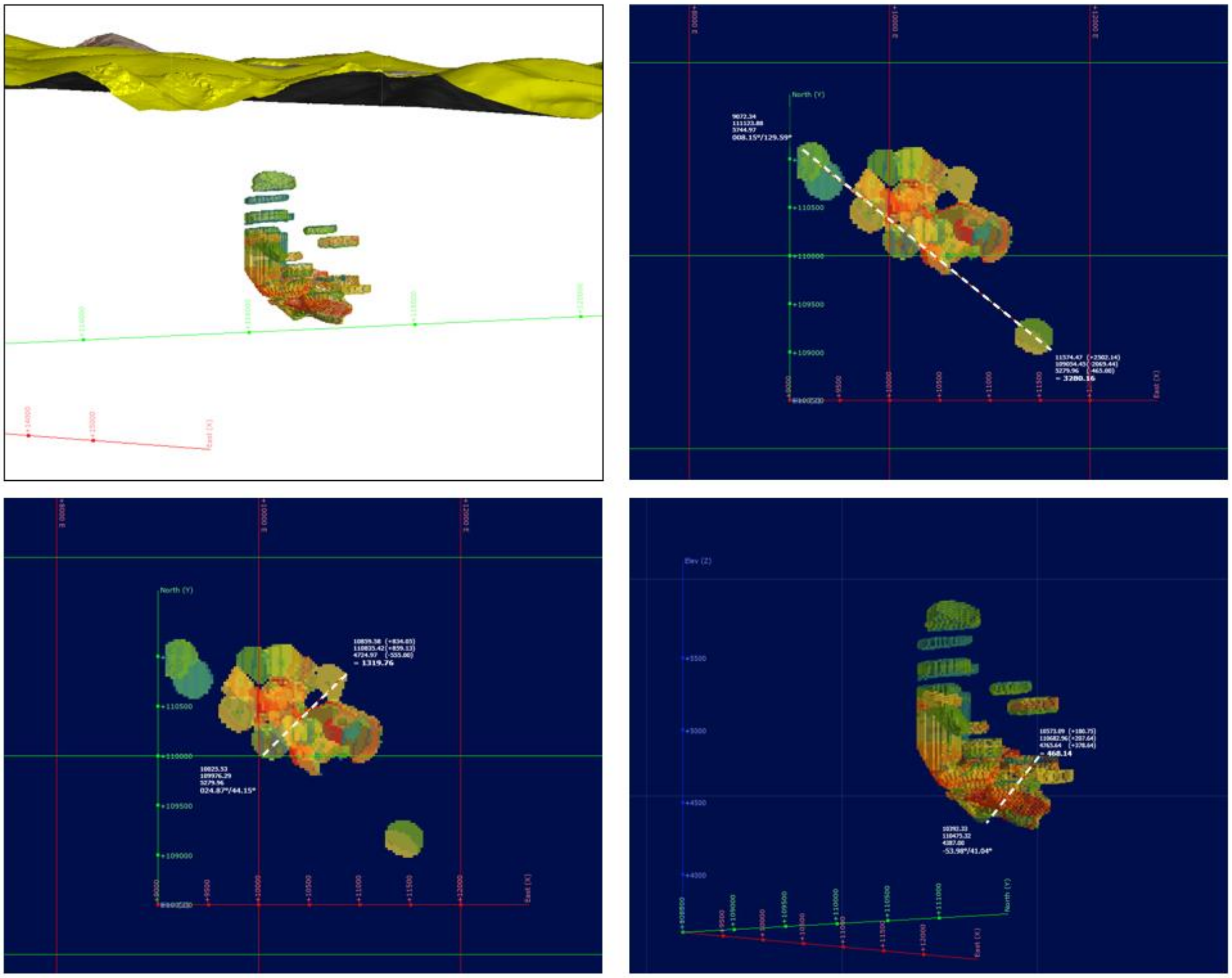
Sanding alteration through most part of the Hamburg dolomite is seen in both holes of GH21-01 and GH21-02, where Nolan (1962) mentioned the Carlin-type gold deposit, which was mined along the Hamburg–Dunderberg contact in Eureka district. Unfortunately, assay results from hole GH021-01 do not show any mineralization in the entire sanded Hamburg Dolomite and its upper contact with Dunderberg, and no assay data are available for this formation from hole GH21-02.

The following information supports the theory that gold mineralization within the property is mainly hosted by Eldorado Dolomite:

- Current core boxes from holes GH21-01 and GH21-02,
- Available assay data from hole GH21-01 and part of hole GH21-02,
- Previous assay and lithology data related to the historical drilling campaign, and
- The 3D block model of FAD deposit (prepared by SRK, 2017 based on historical data)

The mineralized zone has a northwest orientation, sub-parallel to the Adams Hill and Office Faults' trends (see Figure 12-2), dips to the northeast. The orebody is tabular, has a strike length of approximately 3,000 ft, about 1,300 ft in width, and ranges in depth from 300 to 500 ft (see Figure 12-2). Higher grade zones are located along the and parallel to the lower part of the Eldorado Dolomite. Mineralization within the FAD deposit is more disseminated, with Au concentrations averaging at 1.821 gpt, with a median of 0.06 gpt, and a maximum of 342.9 gpt (based on the historical assays).

Figure 12-2: Dimension of FAD Deposit, a 3D and Plan Views (upper and left lower) and Section View (right lower)

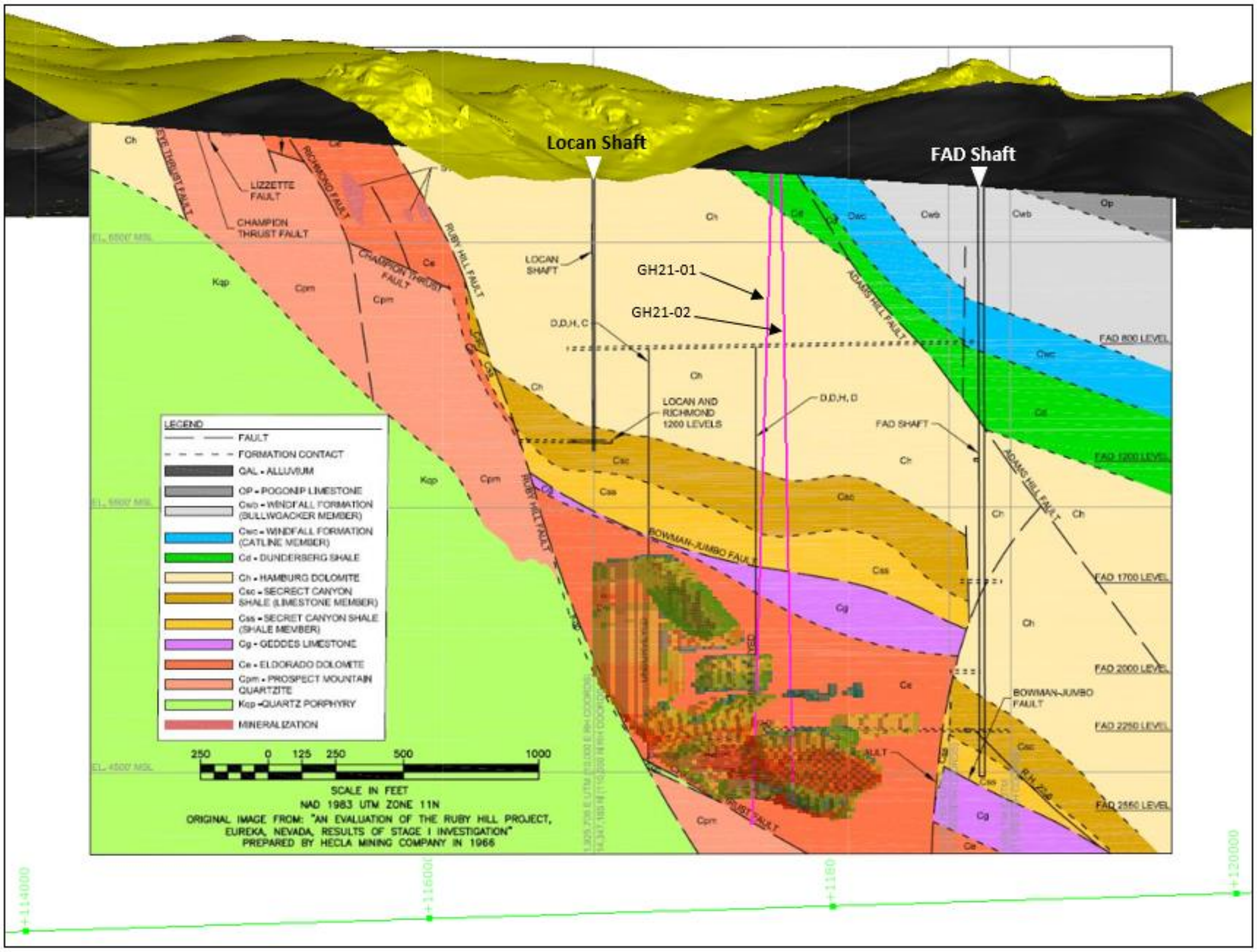


Source: GRE, 2021, Block model is taken from SRK studies, 2017.

All the above-mentioned geological descriptions, deductions from the site visit and confirmations of the mineralization intervals within hole GH21-01, emphasize that the mineralization target is located at the lower part of the Eldorado Dolomite (See Figure 12-3). As seen in Figure 12-3, hole GH21-01 and GH21-02 passed the high-grade mineralization zone. As a result, the lower part of Eldorado Dolomite within hole GH21-01 shows three high-grade mineralization intervals (more than 6.0 ppm), and hole GH21-02 shows 10 high-grade intervals (more than 6 ppm gold). Since there are no more assay results for this formation, any definite comment will be subjected to the results from the remaining holes.

The QP believes drilling along the remaining holes in the 2021 campaign and in the future should be continued beyond the Eldorado Dolomite to penetrate into the underlying stata.

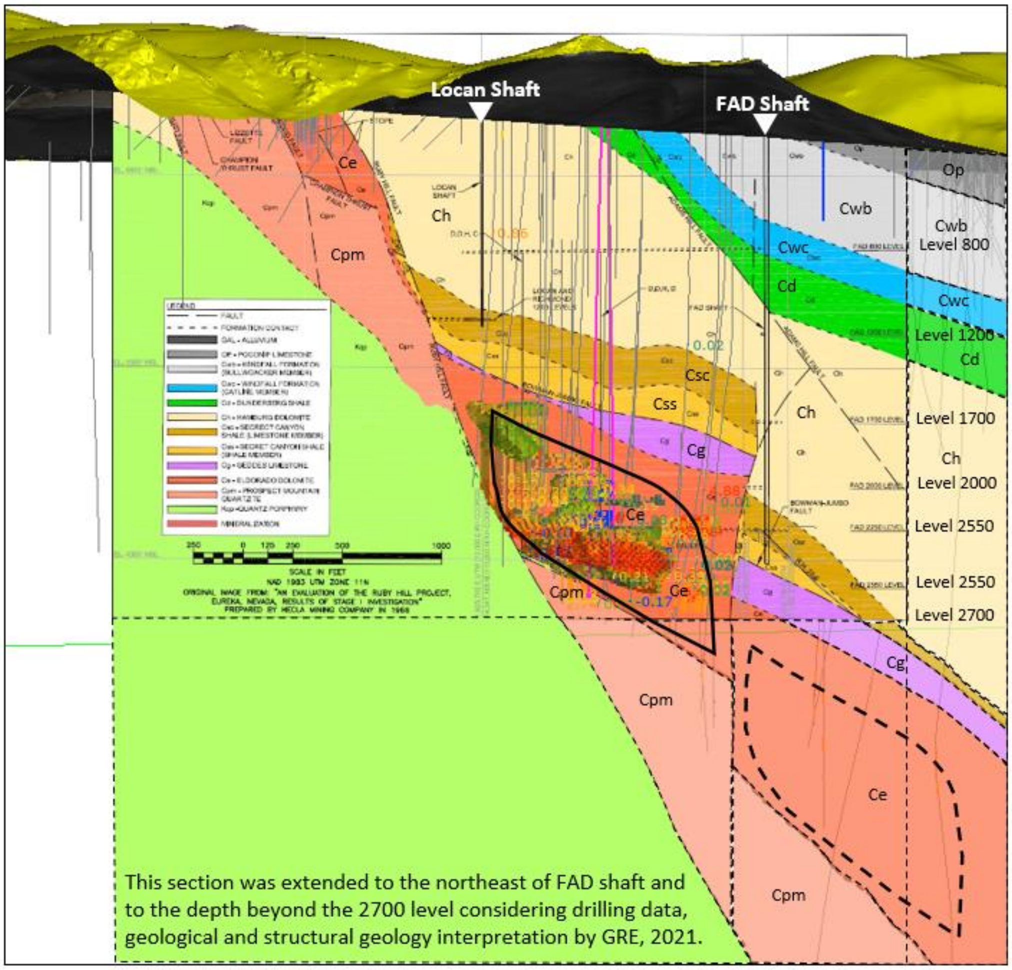
Figure 12-3: Location of FAD Deposit with trace of holes GH021-01 & 02 from 2021 drilling Campaign (the first stage)



Source: Geological Section A-A' along FAD and Locan shafts is taken from Hecla Mining Company report date 1966, Block model is taken from SRK studies, 2017, modified and compiled by GRE, 2021.

Existing geological evidence shows that there is a possibility of the same mineralization zone, which was proven by historical drilling within the Eldorado Dolomite (solid rhomboidal shape on Figure 12-4), on the eastern side of the Jackson and /or Martin faults (dash rhomboidal shape on Figure 12-4) but at a deeper level. Although some high-grade intervals are seen in this new target, more drilling and geophysical land survey are needed to confirm this new target.

Figure 12-4: Location of a possibility of mineralization on the Eastern Side of Jackson and / or Martin Faults



This section was extended to the northeast of FAD shaft and to the depth beyond the 2700 level considering drilling data, geological and structural geology interpretation by GRE, 2021.

Source: Geological Section A-A' along FAD and Locan shafts is taken from Hecla Mining Company report date 1966, Block model is taken from SRK studies, 2017, modified and compiled by GRE, 2021.

12.3 Database Audit

12.3.1 First Stage Database Audit, GH21-01 and partial data from GH21-02

During his site visit, Dr. Hamid Samari completed a manual audit of the hole GH21-01 and part of the hole GH21-02 digital project database provided by Golden Hill by comparing original assay certificates from American Assay Laboratories and Paragon Geochemical, Sparks, Nevada, to corresponding information contained in the database.

The drill assay database contained 611 assay samples only from Golden Hill drill programs. Original laboratory assay certificates were available for the Golden Hill 2021 program (the first stage). The manual audit examined two certificate's PDF files from American Assay Laboratories and one certificate's PDF file from Paragon Geochemical and revealed no discrepancies between the hard-copy information and digital data for the Golden Hill program at the FAD project. No original historical assay certificates were available.

12.3.2 Second Stage Database Audit, (all data available by the effective date)

During a second stage of database audits, GRE evaluated a total of 352 assay results, including 274 assays from hole GH21-02, 48 assays from hole GH21-03, and 30 assays from hole GH21-04 .

Dr. Hamid Samari completed a manual audit of the database provided by Golden Hill by comparing original assay certificates from Paragon Laboratories, Sparks, Nevada, to corresponding information contained in the database. The QP also had a look at core box photos of these holes, which are available in the Golden Hill database, for a visual correlation between high grade intervals and mineralization.

The drill assay database for this campaign contained 352 assay results only from Golden Hill drill programs. Original laboratory assay certificates were available for holes GH21-02, GH21-03, and GH21-04 at the time of writing the report. The manual audit examined four certificate's PDF files from Paragon Laboratories and revealed no discrepancies between the hard-copy information and digital data for the Golden Hill program at the FAD project. For this campaign GRE's QP also checked logs of holes GH21-02, GH21-03, and GH21-04, which were prepared by Golden Hill field geologist Matthew Rhoades, and correlated them with high grade mineralization intervals recorded in the database. The review showed the high-grade mineralization in holes GH21-03 is associated with the replacement sulfide minerals and oxidation which occurred predominately in the Eldorado dolomite. Table 12-3 shows high-grade intervals with more than 1 gpt of gold. Photo 12-9 also shows photos of some of high-grade intervals, which were mentioned in Table 12-3.

Table 12-3: High-Grade Gold interval Within Eldorado Dolomite, Hole GH21-03

No.	From (ft)	To (ft)	Au (ppm)
1	2216	2221	5
2	2211	2216	3.66
3	2231	2237.5	3.327
4	2237.5	2242	3.089
5	2268	2275	2.495
6	2192	2197	1.118
7	2253	2258	1.022

Photo 12-9: Views of Sulfide Mineralization within Eldorado Dolomite, Hole GH21-03

The same scenario is seen in hole GH21-04, in which high-grade mineralization is associated with the sulfide replacement deposit and oxidation which occurred predominately in the Eldorado dolomite. Table 12-4 shows high-grade intervals with more than 2 gpt of gold. Photo 12-10 also shows some of high-grade intervals, which were mentioned in Table 12-3. This review confirmed the result of the previous drilling campaign, in which mineralization predominantly occurred in the Eldorado dolomite.

Table 12-4: High-Grade Gold interval Within Eldorado Dolomite, Hole GH21-04

No.	From (ft)	To (ft)	Au (ppm)
1	2253	2267	5.27
2	2242.5	2253	2.842
3	2305	2316	2.654
4	2283	2288	2.182
5	2332	2367	2.113
6	2316	2327	2.0

Photo 12-10 :Views of Sulfide Mineralization within Eldorado Dolomite, Hole GH21-04

12.4 QP Opinion on Adequacy

The sample management and QA/QC procedures performed recently by Golden Hill during the Phase I drilling completed to date showed:

- Assaying of standard material produced no systematic errors,
- Blank material assays indicated that no contamination occurred from sample to sample, and
- Duplicate assays due to the low amounts of their assays have not shown any meaningful evaluation on the sample's preparation protocol. Therefore, more duplicate samples with higher amounts of the assay are needed to evaluate the sample preparation accurately.

The authors believe the following recommendations should be implemented for the remainder of current drilling programs and for the future:

- Formal, written procedures for data collection and handling should be developed and made available to the FAD field geologist and personnel. These should include procedures and protocols for fieldwork, logging, database construction, sample chain of custody, and documentation trail. These procedures should also include detailed and specific QA/QC procedures for analytical work, including acceptance/rejection criteria for batches of samples.
- Since sedimentary formations are the main factor for location of mineralization at the FAD deposit, separation of different formations and distinguishing their contacts are critical issues that should be considered. A detailed petrography study for different formations along the hole GH21-01 is highly recommended. This work will prepare a stratigraphic index helping field geologists log the rest of the holes based not only on the lithology but also on the formations with the same scale for the remaining holes. A detailed review of field practices and sample collection procedures should be performed on a regular basis to ensure that the correct procedures and protocols are being followed.
- Review and evaluation of laboratory process should be an ongoing process, including occasional visits to the laboratories involved.
- Due to existence of several sanded, crushed, brecciated, and powdered intervals, it is recommended that from now on, all steps of the sample preparation be done on FAD property.
- In general, the QA/QC sample insertion rates used fall below general accepted industry standards, especially for duplicate and standard samples. For the rest of current drilling programs and for the future exploration campaigns, standards, blanks, and duplicates, including one standard, one duplicate, and one blank sample, should be inserted every 20 interval samples, as is common within industry standards.

Based on the review and audit of the project database and all existing project documents, and the author's observations of the geology and mineralization at the project during the site visit, Dr. Samari considers the lithology, alteration, and mineralization data contained in the project database (for the current drilling campaigns) to be sufficiently reliable for use in ongoing exploration and studies.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Golden Hill has yet to conduct mineral processing and/or metallurgical testing at the FAD Property.

14.0 MINERAL RESOURCE ESTIMATES

A current Mineral Resource Estimate has not been completed for the FAD. Historical resource estimates are reviewed in Section 6.7.

15.0 ADJACENT PROPERTIES

The FAD deposit lies within the Ruby Hill mining district. Many adjacent properties and historic mining operations exist. These are either within the FAD AOI (and discussed in Section 6.0) or on the i-80 Gold Corp project called the Ruby Hill Mine (even though the Ruby Hill concessions are contained within the FAD project). This section discusses the history of the i-80 Gold Corp project, and its historic antecedents. The qualified persons have been unable to verify the information for adjacent properties, and the information relating to adjacent properties is not necessarily indicative of the mineralization on the property that is the subject of this technical report.

After Hecla's departure from the project after the decisions to forego FAD development (see Section 6.5.2), the entire Ruby Hill mining district sat dormant for a number of years. The US Smelting and Refining Company reworked some of the dumps during the 1980s. Figure 15-1 shows the tailings leach pads which were active in the 1980s.

Figure 15-1: Tailing leach pads at Ruby Hill in the 1980s

15.1 Homestake Mining/Barrick Gold Period

In 1992, Homestake Mining Company purchased the property. For the duration of the Homestake/ Barrick period, the FAD deposit was included in the general land and claims package of the Ruby Hill Mine but was not developed or explored.

Shortly after purchasing the project, Homestake conducted a drilling program and found significant mineralization in what would later become the Archimedes pit (Wood 2021). In 1997, Homestake sought and received a permit to establish an open-pit mine and processing plant. Plans called for the mine to be in production by 1998, employing more than 100 workers. The mine life was initially estimated at seven and one-half years.

Archimedes is a Carlin-style sediment-hosted gold deposit in carbonate rocks. The mineralized material is a mixture of jasperoid and decalcified limestone exhibiting strong structural controls. Micron-size gold is associated with oxidized pyrite sites and is strongly fracture controlled. Deeper portions of the east Archimedes resource are sulfidic, and root-zones include retrograde-altered base metal skarn and marble hosts. The mineralized area closely adjoins a Cretaceous porphyry intrusive and may be genetically linked to it, as both base metal-related adularia and the intrusive yield similar radiometric ages. Some evidence suggests the presence of a younger cross-cutting Au-As-Hg system superimposed on the earlier base-metal system and associated with Oligocene magmatism. The West Archimedes deposit is about 780 m long, plunging gently S60 degrees E and covered by 15 to 150 m of partially cemented calcareous alluvium. The deposit is subtabular to ovate in cross section, branching locally at structural intersections. The orebody has a central elongated lens of higher grade jasperoid mineralized material enclosed by a more tabular envelope of lower grade decalcified limestone mineralized material.

The mines centered on the Archimedes pit produced 28,284 ounces of gold in the first quarter of 2000 and reported the lowest cost per ounce of all the mines in operation by Homestake (See Figure 15-2). The mine also received the best safety-performance awards in the company. Barrick Gold Corporation acquired the Homestake Mining Company in 2001. Barrick continued to mine and also began concurrent reclamation work. Barrick Gold stopped mining in 2002, because low gold prices and other factors forced a slowdown in mining throughout Nevada.

As the gold market improved, Barrick resumed mining in in 2006 The first gold was poured in 2007 and the mine poured its one-millionth ounce of gold in July 2009. A pit slope failure in 2013 and declining gold prices put the project on standby (McKown, 2014). At the time of shutdown, the project had produced 1.4 million ounces of gold (Waterton, 2015).

Barrick commissioned a technical report for the Ruby Hill Mine property on March 16, 2012. Even though the claim package included the FAD deposit, the 2012 technical report did not estimate resources from FAD. It is mentioned as a potential exploration project within the larger concession (RPA. 2012)

Figure 15-2: Photograph of the Archimedes Pit, in 2021

15.2 Waterton Period

Waterton purchased the asset from Barrick in 2015 and continued residual cyanide leaching of the heaps. It was at this point Waterton separated the district into two concessions: the FAD deposit, and the Ruby Hill Mine (see Figure 1-2). In 2020, Waterton began a 12-month mining program to extract more mineral from Archimedes Phase 8, but was hampered by a slope failure (Wood 2021). Waterton performed no operation or exploration activities on the mineral concessions comprising the FAD deposit. However, they did commission a resource calculation using historic data created by prior owners which is discussed in Section 6.0.

Waterton elected to split the project into two parts: the northern "Ruby Hill Mine" and the southern FAD deposit. In 2021, i-80 Gold Corp purchased the Ruby Hill Mine from Waterton. They commissioned a technical report which was released in October 2021. This report declared a total of 3.8M indicated ounces of open-pit accessible oxide gold in the Mineral Point and Archimedes areas, and ~1.8M oz of sulfide-hosted gold from the 426 Underground and Ruby Deeps underground mining areas. (Wood, 2021). i-80 Gold Corp plans to spend $45.5 million on the project over the next 24-36 months as they proceed toward redevelopment of this asset (Wood 2021).

Apart from the i-80 Gold Corp project, there are no other major mining operations within ~50 km from the FAD project in the region. Figure 6-4 shows the historical producers near the FAD project.

16.0 OTHER RELEVANT DATA AND INFORMATION

Based on historic experience (see Section 6.0), is important to note that hydrogeology must be an area of future attention, and that without mitigation, it is reasonable to expect that tens of thousands of gallons per minute of pumping will be required to access the bottom of the FAD shaft. Hecla's 1966 hydrogeology studies (supported by their direct experience) predicted 12,000 gpm of dewatering at the FAD deposit. This dewatering will have a significant impact on project economic performance and /or exploration costs. However, future dewatering efforts may experience greater success than prior dewatering operations due to a significant improvement in the available technology since the mid-20th century.

For example, Oil-Field directional drilling techniques can offer substantial improvements in dewatering success and can greatly lower overall dewatering cost (Boland, et. al. 2016, and Nitz el al, 2016). In Helca's 1966 report, they evaluated the feasibility of an 8,200-foot-long drainage tunnel. This alternative was discarded, but it is possible that directional drilling could duplicate the tunnel and make passive drainage feasible.

Furthermore, fracture sealing technology is substantially improved since Hecla's effort to seal the conductive regions of the Eldorado dolomite with pressurized cement grout in the 1960s. (William 2018). For example, Rocsil Foam, a Wilson Mining product, has been widely applied to seal fractures and prevent groundwater inflow in underground mines. The product uses a two-component phenolic resin foam product with a 35x expansion factor (Wilson Mining, 2021). This product, or others like it (often incorporating cement in a foam slurry) may be a viable solution to preventing large-scale water inflow into underground workings.

At this stage of project development, there are no hydrogeologic investigations, nor any up-to-date predictions of the dewatering requirements for the FAD shaft for exploration or extraction purposes. Hydrogeology studies are recommended for the early stages of exploration and development (see Section 17.0). These studies will be executed to predict the potential groundwater inflows, and also to select the best mitigation measures (possibly using tools described above) for minimizing dewatering cost and to maximize underground safety.

17.0 INTERPRETATIONS AND CONCLUSIONS

It is the opinion of the authors of this Technical Report that the FAD Property is a "Property of Merit" that warrants future exploration work.

The FAD project is located in the Ruby Hill Mining District, Eureka County, Nevada. Approximately three miles west of the town of Eureka. It is located in Eureka Mining District, a historically prolific mining district. Most of the Eureka District's production was during the period of 1879 to 1890. Hecla (1966) states that the Eureka Mining District produced 2 million tonnes of mineralized material with a value of $122 million, of which 80% was from the Ruby Hill deposit (adjusted to 2021 dollars, this value exceeds $1B).

The FAD deposit is located south of the i-80 Gold Corp's Ruby Hill project (which includes the Archimedes pit, and was operated by Placer/Barrick). Unless otherwise indicated, the term "Ruby Hill", as used throughout this Report refers to the historic Ruby Hill mine, and its associated mineral claims (Ruby Hill 1, Ruby Hill 2, and Ruby Hill FR – see Table 4-1), which are located on the Property and are part of the FAD mineral concession, and does not refer to the project operated by i-80 Gold Corp under the same name.

Eureka mining district contains carbonate replacement and minor vein deposits in Middle and Late Cambrian Eldorado Dolomite and Hamburg Dolomite from which significant amounts of lead, silver, gold, and zinc were recovered. It also contains bulk-mineable, low-grade gold deposits in Late Cambrian and Early Ordovician limestones (Vikre, 1998).

Historic mining activities in the Ruby hill area noted that all mineralization ended abruptly at the Ruby Hill fault. It was therefore hypothesized, and later proven, that the Ruby Hill deposit has been offset and down-dropped by faulting to its current position approximately 2,500 feet below ground surface. It is this down-dropped mineralized block, of unknown extent, that comprises the FAD deposit. In the mid-20th century, Hecla, Homestake, and other major mining companies formed a consortium to explore the FAD deposit. They invested $3M in 1966 dollars (equivalent to ~$20M in 2021) including the development of two shafts (the Locan and FAD), and a total of 158,882 ft (48427.23 m) of exploration across 160 drill holes, from the surface, and from drifts off the shafts.

Large quantities of groundwater (~7,500 gpm) hampered their exploration efforts, and ultimately, they decided that the deposit was not economic under the technical and price conditions present in both 1966 and 1974 (when the deposit was re-evaluated). The project reverted to is prior claimholder and sat inactive until purchased by Waterton in 2015.

SRK and others (Hecla 1966) discovered that mineralized zone has a northwest orientation, sub-parallel to the Adams Hill and Office Faults' trends, dips to the northeast. The mineralized body is tabular, has a strike length of approximately 3,000 ft, about 1,300 ft in width, and ranges in depth from 300 to 500 ft. Higher grade zones are located along and parallel to the lower part of the Eldorado Dolomite. These dimensions are defined by the limit of drilling and may not be the true limits of the depth and extension of the mineralized deposit.

Since acquiring the FAD mineral concessions, the Spring Valley project, and the Ruby Hill Mine in 2015, and to date, Waterton has not undertaken or conducted any exploration work or exploration drilling on the FAD property. However, the historical drilling results from prior owners were sufficient in scope for SRK, under the instruction of Waterton, to calculate a preliminary estimate of available tonnage at a selected Zinc Equivalent grade. Table 17-1 shows the sample set used for this preliminary calculation.

Table 17-1: Resource Database for SRK Calculation

Year	Drill Holes	Number of Drill Samples	Sample Length Total (ft)
1971	1	9	41
1970	13	159	1,153
1960	83	1,413	5,976
1950	23	376	2,728
TOTAL	**120**	**1,957**	**9,898**

Table 17-2 shows the preliminary resource across three mineralized domains (underground regions defined by drilling and geology) assuming a 3% Zinc Equivalent cutoff grade.

A plan view of the mineralized domains as defined by SRK have been presented as Figure 1.x.

Table 17-2: Internal Historic Calculation of Tonnage and Grade at 3% ZnEq Cutoff

Domain	Quantity	Grade	Grade	Contained Metal	Grade	Contained Metal	Grade	Contained Metal	Grade	Contained Metal
	(x1000 Tons)	ZnEq (%)	Zn (%)	Zn (000's lb)	Pb (%)	Pb (000's lb)	Ag (oz/ton)	Ag (000's oz)	Au (oz/ton)	Au (000's oz)
Domain 1	4,193	9.602	5.097	427,402	1.683	141,105	3.146	13,189	0.098	410
Domain 2	1,284	8.531	4.889	125,514	1.450	37,218	2.788	3,579	0.038	49
Domain 3	2,869	12.833	7.802	447,670	2.396	137,495	3.084	8,848	0.098	280

The estimated tons and grade are reported at a zinc equivalent cut-off of 3.0%. The cut-off is based on a price of US$1.10 per lb of zinc, US$1.00 per lb of lead, US$21 per ounce of silver, and US$1,300 per ounce of gold,. The assumed recoveries are for zinc 90%, lead 80%, silver 75%, and gold 10%.

The reader is cautioned that the Waterton/SRK calculations presented above are neither a Resource nor a Reserve as defined by NI 43-101. The calculation did not follow standards set forth in NI 43-101 and current CIM standards for mineral resource estimation (as defined by the CIM Definition Standard on Mineral Resources and Reserves dated May 10, 2014). Golden Hill has not done sufficient work to classify this historical estimate as a current mineral resource and have referred to this estimate as a "historical resource"; Golden Hill is not treating it, or any part it, as a current mineral resource. This historical resource estimate should not be relied upon and has only been included to demonstrate the mineral potential of the FAD Property.

Furthermore, the recoveries estimated at the bottom of Table 17-2 are estimated, and not based on metallurgical test data. Golden Hill has referred to these metallurgical studies as "historical metallurgical estimates" and are not treating it, or any part it, as a current assessment of metallurgical recovery. This historical study should not be relied upon, and this discussion has only been included to demonstrate the metallurgical potential of the FAD deposit

It is important to note that the deposit discovered by Hecla and modeled by SRK is open in many directions, and also may continue in another block down-dropped by the Office fault.

Golden Hill believing the project to be of merit, has commenced a drilling program to validate and expand on the prior drilling results with the ultimate goal of producing an NI 43-101 an CIM compliant mineral resource estimate. At the issue date of this report, 15,849.5 feet (4,831.9 meters) have been drilled in seven borings in a planned program of eight holes.

Golden Hill from 2021 has started to drill eight holes in phase 1, which at the date of this report holes GH21-01, GH21-02, GH21-03, GH21-04, and GH21-05, totaling 12,481 ft were drilled in 2021 and holes PC22-01 and PC22-02, totaling 3,368.5 ft were drilled in 2022 and drilling in the eighth hole is ongoing. GRE's QP Dr. H. Samari conducted an onsite inspection of the project from the 16 to 17 August 2021, accompanied by Golden Hill field geologist Matthew Rhoades. During the site visit, the QP conducted a general geological inspection of the FAD area, including checking the exposed formations, lithologies, and mineralization. Because there is no core samples from the historical drilling campaigns, the site visit was focused on checking the existing core samples, which were collected by Golden Hill drilling during July and August 2021. During the site visit, all core sample intervals from GH21-01 and about 150 core sample intervals from hole GH21-02 were inspected visually by the QP. Lithologies, alterations, and mineralization were logged and cross-refenced with the field geologist.

Currently, Golden Hill's primary exploration target is the carbonate replacement mineralized unit modeled by SRK. However, there is also the possibility of two other shallower deposits:

- A carlin-type deposit within Humberg dolomite, which shows significant sanding alteration intervals, similar to the Archimedes deposit.
- A shallow oxide mineralization within Humberg dolomite, which shows pervasive oxidized intervals, similar to the mineralization at Ruby Hill, which were oxidized to the lowest mining levels, about 250 m below the surface.

It should be mentioned that although assay results from the recent holes GH21-01 and GH21-02 (only drilled hole with assay results for Humberg formation so far) do not show any gold grade within this formation, more borings and sampling are needed to clarify mineralization within the Humberg dolomite.

To the effective date of this report, only a part of assay results, 959 data, are available in the Golden Hill database, belonging to both campaigns 2021, including holes GH21-01, GH21-02, GH21-03, and GH21-04. Nevertheless, the assay results have perfectly confirmed the gold mineralization within the Eldorado dolomite.

Overall, GRE believes that the FAD project has significant exploration potential. The presence of a high-grade underground polymetallic mineralized body has been proven by historical drilling and preliminary grade-tonnage calculations, and the project awaits additional exploration efforts to define a CIM-compliant resource.

Groundwater inflows, which hampered prior exploration and development efforts, can be addressed with new technology and new solutions unavailable in the 1960s including directional drilling, and sealing foam/grout products.

GRE believes that the FAD project has the potential to be a high-value polymetallic underground mining operation and warrants additional exploration investment.

17.1 Risks and Uncertainties

Precious metals and base metals exploration is an inherently risky activity. Historical results are not a guarantee of future exploration success.

Other project risks include:

- Prior underground workings, such as the Locan shaft and the FAD shaft may be expensive to rehabilitate, requiring exploration from the surface (which could greatly increase drilling costs).
- Changes in metals prices could render the FAD deposit less valuable over time.
- The project has not conducted metallurgical studies to determine the recovery of payable metals from the deposit.
- Groundwater inflows may hamper exploration and development.

17.2 Potential Benefits

The project has the following advantages:

- The project is located close to good infrastructure; indeed, the project is close enough to Eureka that there is no access road required.
- The project is located near enough to the Carlin/Elko gold mining district to draw talent and supplies from the US's largest gold producing region.
- The project has adequate power
- The project is likely to have abundant groundwater for exploration and process.
- The project is located in a mining-friendly regulatory jurisdiction, and in a town familiar with, and friendly to, mining.

18.0 RECOMMENDATIONS

Historical exploration has identified significant gold mineralization within the Property. Therefore, an aggressive exploration program is warranted. Recently, Golden Hill has created a drilling program (called Phase 1) consisting of approximately 20,000 ft, of which six holes are planned to target deep mineralization and two holes will test near surface potential. Golden Hill designed all holes for the current drilling program and mentioned that "the FAD Shaft drill campaign (phase 1) is designed to generate as much valuable subsurface information that can, in turn, be leveraged from historical information. Each of the drill holes were planned to intersect massive sulfide mineralization based on historical drilling. For example, the first two holes were designed to twin historic holes DDHE and RDH2A. A further four holes were designed to intersect intercepts from historic underground holes that had collared on the 2250 level. Two additional holes were planned to test for near-surface oxide mineralization proximal to the historic underground workings beneath Ruby Hill. Special precautions were taken to ensure the holes would not intersect any underground workings, either at the 800 level or the 2250 level."

To date, seven holes, totaling 15,849.5 ft, out of eight holes have been drilled. Phase 1 is focused only on drilling and preparing an NI 43-101 geologic report with a budget of $2,756,510.

GRE believes the recent exploration should include but not be limited to the following:

Phase 1: The publication of an NI 43-101 geologic report, including historical exploration and resource estimate along with all geological aspects and information for this underground deposit.

- In this report, GRE has covered most parts of the NI 43-101 geologic report with having drilling data from entire hole GH21-01 and some part of holes GH21-02, GH21-03, and GH21-04 out of eight planned holes. This report has considered sections of the Hecla Mining Company feasibility studies dated 1974, SRK trade-off study and economic analysis dated 2017, all geological report and papers related to the Eureka Mining district from 1962 to date (see Sections 6 and 7), and field visits by its Qualified Person.

- GRE recommends that for validation and accuracy of current FAD drilling data (based on the existing digital data on the Golden Hill database), checking recent QA/QC procedure by taking check samples, and for evaluation of possibility of carlin-type deposit or any overprinting mineralization in FAD property within sedimentary formations, this technical report should be updated after completion of drillings when all assay data are available.

- Historical drilling at FAD is valuable data with respect to a mineral resource estimation moving forward. Since recently, only a drilling program for eight holes is being done by Golden Hill (phase 1). After understanding the whole aspect of the recent exploration program, GRE recommends the second phase of exploration program followed by phase 1:

Phase 2: The publication of a revised FAD resource statement based on the historical data and a review of the SRK resource estimate in 2017. This effort would consider the Hecla Mining Company feasibility studies dated 1974 resource (see Section 6.5.1) but would be validated by the new Qualified Person and remodeled based on the requirements of NI 43-101. This effort will include inspection of prior cores, field verification of drilling monuments, review of prior sample QA/QC methods, and hole twinning with new drilling.

Meanwhile, it will be necessary to acquire the essential claim transfers, land acquisitions, permits, and approvals for an exploration and development program. It is vital to start the permitting effort immediately upon intent to develop. Due to the mix of patented and unpatented mine claims, and due to the size of the project, the project will require a full Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA).

Drilling should prioritize the validation and advancement of the FAD resource. In-fill drilling to convert inferred to measured and indicated resources and twinning holes to validate the data should be a high priority.

Data from Phase 1 of exploration so far have shown that there are oxide and sulfide mineralization intervals with high-grade gold up to 16 g/t (GH21-01 from 2421 ft to 2424 ft) in the Eldorado dolomite formation, which was mentioned in the previous drilling campaigns as the main potential of underground exploration. Because of this potential, Phase 2 of exploration should include an effort at validating the accuracy of existing data. Since the effective date of the original Technical Report, geologists have discovered core and well-catalogued assay results in warehouses around the site, whichcould greatly aid in historic data validation. Geologists will alsoutilize twin holes to the extent possible considering drilling limitations and the variability of the rock.

Phase 2 of the exploration program should include but not be limited to:

- Verification of previous hole locations,
- Inspecting existing core and RC samples,
- Taking random duplicate samples from existing core and RC samples (if there are any),
- Checking assay from existing hole samples (RC and DH if there are any),
- Verification of existing assay database,
- Deep drilling, twinning historical drill holes, to confirm analytical data and to test mineralization where historic drill holes ended in mineralization (5 drill holes or approx. 3,800 m), this program will be carried out after recent drilling program, which is under progress, and
- Metallurgical test work.

Phase 2 is recommended to proceed upon the successful delineation of a NI 43-101 compliant resource for the FAD deposit. Phase 2 is contingent on Phase 1.

The recommended Phase 2 exploration totals $2,600,000 (Table 18-1).

18.1 Recommended Budget

The following tables show an itemized list of the expenditures by phase.

Table 18-1: Phase 1 Ongoing Drilling Program, Costs, and Tasks

Phase 1: 2021-2022 Drilling (Complete, or Pending Assay Results)	
Activity Type	**Cost**
Exploration Geology (Staffing, Assay Lab, NI43-101 Report, Etc.)	$410,000
Exploration Drilling – 7 borings, 5,200m @ ~$409/meter	$2,121,235
Property and Claims Fees	$25,000
Phase 1 Activities Subtotal	**$2,566,235**

Source: Golden Hill, 2021

Phase 1: 2022 Drilling (Pending)	
Activity Type	**Cost**
Exploration Geology (Staffing, Assay Lab, NI43-101 Report, Etc.)	$77,575
Exploration Drilling – 1 boring, 300m @ ~$409/meter	$122,700
Phase 1 Activities Subtotal	**$200,275**

Source: Golden Hill, 2021

Table 18-2: Recommended Exploration Budget Phase 2

Phase 2	
Activity Type	**Cost**
Data Compilation	$50,000
Delineation Drilling – 3,800m @ $575/meter	$2,185,000
Analytical (1,800 samples @ $75/sample)	$135,000
Earthworks	$30,000
Environmental	$100,000
Permitting	$100,000
Phase 2 Activities Subtotal	**$2,600,000**

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CERTIFICATE OF QUALIFIED PERSON

I, Hamid Samari, PhD, of 600 Grant St., Suite 975, Denver, Colorado, 80203, the co-author of the report entitled "Amended and Restated NI 43-101 Technical Report, FAD Project, Eureka, Nevada" with an effective date of April 7, 2022 and an amended and restated date of February 1, 2023 (the "**Technical Report**"), DO HEREBY CERTIFY THAT:

1. I am currently employed as senior geologist by Global Resource Engineering, Ltd.
2. I am a graduate of Azad University, Sciences and Research Branch, Tehran and received a PhD in Geology-Tectonics in 2000 and I am a graduate of Beheshti University, Tehran and received a MS in Geology-Tectonics in 1995 MS and I am a graduate of Beheshti University, Tehran and received a BS in Geology in 1991
3. I am a Qualified Professional in the United States from the Mining and Metallurgical Society of America (MMSA) with special expertise in Geology with membership number 01519QP
4. I have practiced the areas of geology, mining, and civil industry for over 23 years. I have worked for Azad University, Mahallat branch as assistant professor and head of the geology department for 19 years, for Tamavan consulting engineers as senior geologist for 12 years, and for Global Resource Engineering for nearly four years. I have worked on geologic reports and resource statements for silver and gold deposits in the United States and Latin America. This includes epithermal silver deposits in Peru, gold deposits in Nevada and Utah, and mixed precious metals deposits elsewhere in the Western Hemisphere.
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 visited the FAD Property from 16 to 17 August 2021 and conducted a field reconnaissance of the FAD site. This visit focused on the FAD area and checking the core boxes from two holes of GH021-01 and GH021-02. I checked prepared geologic maps including formations, lithologies, structures, and mineralization within the property.
7. I am responsible for Report Sections 1.3, 1.4, 1.5, 1.6, 1.7, 7.0, 8.0, 9.0, 10.0, 11.0, 12.0, 17.0, and 18.0.
8. I have not previously worked on the FAD Property.
9. I am independent of Golden Hill Mining LLC, 2766604 Ontario Ltd. and Aardvark Capital Corp. as described in section 1.5 by National Instrument 43-101.
10. I have read National Instrument 43-101 and Form 43-101F1 and confirm the sections of the Technical Report for which I am responsible (as listed above) have been prepared in compliance with that instrument and form.
11. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information required to be disclosed to make the report not misleading.

Hamid Samari, PhD

"Hamid Samari"

Director of Geology
Global Resource Engineering, Ltd.
Denver, Colorado
Date of Signing: February 1, 2023

CERTIFICATE OF QUALIFIED PERSON

I, J. Larry Breckenridge, P.E., of 600 Grant St., Suite 975, Denver, Colorado, 80203, the co-author of the report entitled "Amended and Restated NI 43-101 Technical Report, FAD Project, Eureka, Nevada" with an effective date of April 7, 2022 and an amended and restated date of February 1, 2023 (the "**Technical Report**"), DO HEREBY CERTIFY THAT:

1. I am currently employed as principal environmental engineer by Global Resource Engineering, Ltd.
2. I am a graduate of Dartmouth College with a degree in Engineering Modified with Environmental Science (BA) and from the Colorado School of Mines with a Masters' degree in Environmental Engineering.
3. I am a Qualified Person under NI 43-101 because I am a registered Environmental Engineer in the State of Colorado, USA, No. 38048.
4. I have practiced the areas of water management, geochemistry, and environmental management -- exclusively for precious and base metals projects for over 25 years. I have worked with Global Resource Engineering in my same role for the last 12 years. I have participated in the permitting process for numerous mines in the United States and in Latin America. I have evaluated geochemical risk for precious metals projects and also performed water availability studies. My most-relevant experience has been the Corani project, a large-tonnage, low-grade silver development project in Peru, which was GRE's flagship client for four years. For this project, I worked on geochemistry, mine water management, pit dewatering, and environmental compliance/permitting.
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 have never visited the FAD Site.
7. I am responsible for Sections 1.1,1.2, 2.0, 3.0, 4.0, 5.0, 6.0, 13.0, 14.0, 15.0, 16.0, and 19.0.
8. I have not previously worked on the FAD Property.
9. I am independent of Golden Hill Mining LLC, 2766604 Ontario Ltd., and Aardvark Capital Corp. as described in section 1.5 by National Instrument 43-101.
10. I have read National Instrument 43-101 and Form 43-101F1 and confirm the sections of the Technical Report for which I am responsible (as listed above) have been prepared in compliance with that instrument and form.
11. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information required to be disclosed to make the report not misleading.

Mr. J. Larry Breckenridge, P.E.
"J Larry Breckenridge"
J. Larry Breckenridge
Principal Environmental Engineer
Global Resource Engineering, Ltd.
Denver, Colorado
Date of Signing: February 1, 2023